APPLICATION OF ANALYSIS, DESIGN, DEVELOPMENT, IMPLEMENTATION AND EVALUATION (ADDIE) MODEL FOR DEVELOPING INSTRUCTIONAL DESIGN IN TEACHER EDUCATION

Researcher:

ALINA RAZA

(110-FSS/PHDEDU/S13)

Supervisor:

PROF. DR. SAMINA MALIK

Co. Supervisor:

PROF. DR. N. B. JUMANI

DEPARTMENT OF EDUCATION

FACULTY OF SOCIAL SCIENCES

INTERNATIONAL ISLAMIC UNIVERSITY, ISLAMABAD

2020

i

Teachers. Training of

Teaching

Application of Analysis, Design, F·evelopment, Implementation and Evaluation (A' DIE) Model for Developing Instructional Design in Teacher Education

By

ALINA RAZA

Reg. No. 110-FSS/PHDEDU/S13

This thesis is submitted for the partial fulfillment of the requirements for degree of

PhD Education

DEPARTMENT OF EDUCATION

FACULTY OF SOCIAL SCIENCES

INTERNATIONAL ISLAMIC UNIVERSITY,

ISLAMABAD

2020

APPROVAL SHEET

APPLICATION OF ANALYSIS, DESIGN, DEVELOPMENT, IMPLEMENTATION AND EVALUATION (ADDIE) MODEL FOR DEVELOPING INSTRUCTIONAL DESIGN IN TEACHER EDUCATION

By

Alina Raza

110-FSS/PHDEDU/S13

This thesis has been accepted by the Department of Education, Faculty of Social Sciences, International Islamic University Islamabad in partial fulfillment of the degree of **PhD Education**.

Supervisor: _____
Prof. Dr. Samina Malik

Co-Supervisor: _____
Prof. Dr. N. B. Jumani

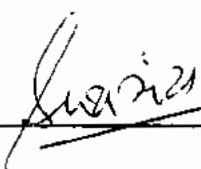Internal Examiner: _____
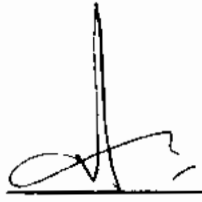Dr. Shamsa Aziz

External Examiner I: _____
Dr. Fazal-ur-Rahman

External Examiner II: _____
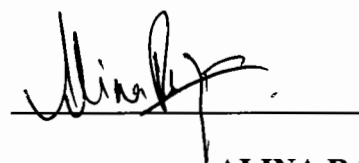Prof. Dr. Muhammad Aslam Asgaar

Dated: _____

Incharge
Department of Education
International Islamic University
Islamabad- Pakistan

Dean
Faculty of Social Sciences
International Islamic University
Islamabad- Pakistan

AUTHOR'S DECLARATION

It is hereby declared that author of the study has completed the entire requirement for submitting this research work in partial fulfillment for the degree of PhD Education. This thesis is in its present form is the original work of the author expecting those which are acknowledgement in the text. The material included in the thesis has not been submitted wholly or partially for award of any other academic certification than for which it is being presented.

ALINA RAZA

Reg. No. 110-FSS/PHDEDU/S13

CERTIFICATE

It is certified that Ms. Alina Raza, Reg. # 110- FSS/PHDEDU/S13 has completed her thesis titled **"Application of Analysis, Design, Development, Implementation and Evaluation (ADDIE) Model for Developing Instructional Design in Teacher Education"** under my supervision. I am satisfied with the quality of student's research work and allow her to submit her thesis for further process as per IIUI rules and regulation.

Prof. Dr. Samina Malik

Supervisor

Prof. Dr. N. B. Jumani

Co- Supervisor

DEDICATION

TO

MY

FAMILY

(WHO MADE ME BELIVE IN MYSELF)

&

TEACHERS

(WHO INSPIRED ME TO KEEP LEARNING)

ACKNOWLEDGEMENTS

There are a number of people whose support, guidance, and affection have been instrumental in the completion of this demanding project of doctoral research. Prof. Dr. Samina Malik, my learned professor and primary supervisor, deserves my special gratitude who has been an inspirational figure not just in my PhD studies but in fact throughout my academic and professional careers. Prof. Dr. Nabi Bux Jamani, my co-supervisor, has been providing me fruitful insights for which I am grateful to him. Dr. Shamsa Aziz, my then chair of the Department, has not only been extremely supportive and encouraging but also kind enough to have provided me with invaluable feedback that improved my thesis a lot— much more than one expects from an internal examiner. My friends and colleagues in the Department of Education at International Islamic University, Islamabad (that include in particular Ms. Humaira Akram and Sumaira Batool) have been extremely supportive throughout, for which I am very grateful to them all. I would especially like to thank Dr. Fauzia Ajmal, my beloved friend and colleague in the Department, whose companionship has been a blessing for me in countless ways. I would like to thank my most affectionate parents Mr. & Mrs. Muhammad Iqbal Raza, whose love and support has been a driving force in my entire life. Shereen Ahmed, my loving elder sister, deserves my special gratitude without whose untiring help in my studies throughout the formative years of my education I would not have reached anywhere. I am also thankful to my beloved sister Dr. Zunaira Raza and brother Shahzaib Raza, for their prayers and support. My loving husband Mahmood-ul-Hassan and beloved daughter Mawara Hassan also deserve my special thanks for their constant support and firm belief that kept inspiring me to achieve greater things in

life. My in-laws, including my mother-in-law, father-in-law and brothers-in-law, whose unbelievable support and selfless love have won my heart and soul, have been consistent in supplying me with incredible motivation for which they deserve my respect and appreciation. Last, but in no way the least, my undergrad students (some of whom have also been part of my study) have been providing the fuel to keep my pursuit to learn new things going for which I feel thankful to them as well.

Thank you all very much. I would have definitely not accomplished this research project without the help, support, and guidance you all have provided me all along!

Contents

Page No.

LIST OF ABBREVIATIONS

3PD	Three Phase Design
4CID	Four Component Instructional Design
ADDIE	Analysis, Design, Development, Implementation, Evaluation
ASSURE	Analyze Learners, State Objectives, Select Material, Utilize Material, Require Learner Response, Evaluation
CAI	Computer Assisted Instruction
CCC	Computer Curriculum Cooperation
CDT	Component Display Theory
CERN	Conseil Européen pour la Recherche Nucléaire (French)
EFL	English as a Foreign Language
FBCL	Facebook Based Collaborative Learning
IBM	International Business Machines
ID	Instructional Design
IPDM	Instructional Product Development and Management
IPISD	Interservice Procedures for Instructional Systems Development
ISD	Instructional System Design
LMS	Learning Management System
MOOCS	Massive Open Online Courses
MOODLE	modular object-oriented dynamic learning environment
OTIL	Online Task-based Interactive Listening
PIE	Planning, Implementing, Evaluating

SREO   Suppasetseree's Remedial English Online

VLE   Virtual Learning Environment

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIX

ABSTRACT

Instructional Design (ID) as a concept has been in debates regarding teaching and learning processes and methodologies since the time of Ancient Greek but it has become an important area in the field of teaching/learning methodologies since 1930s owing to Behaviorists' views about its application. Since then it has generated a lot of awareness and introduced nuanced ways to make the process of instruction more effective—that is why it is being used in planning teaching globally at present. The models derived from Instructional Design are being used to develop various type of learning programs for professional training with the aim to maximize the effectiveness, efficiency and appeal of instruction. These models are used to analyze the learning processes as well as behaviors of the learners. The theories based on Instructional Design are used to analyze, design, deliver, implement and evaluate teaching and learning. Based on Analysis, Design, Development, Implementation, Evaluation (ADDIE) model, this study aimed at developing an Instructional System as well as creating instructional modules for a course (i.e. Teaching-learning Strategies and Reflective Practices). To design the instructional modules (that this study involves) Gagne's Nine Events of Instruction have been used as basis for content development of the modules. The objectives of the study were: to conduct a needs analysis of the target group (as was required in ADDIE model); to design and develop instructional modules based on Gagne's Nine Events of Instruction; to deliver instruction through implementation of Instructional System Design in teaching an undergraduate course named Teaching and Learning Strategies; and to evaluate the utility and effectiveness of Instructional System Design for learners. The twenty students of BS Education Program of the Department of Education at International Islamic University

Islamabad were selected as a sample of the study. This study was experimental in design and conducted in five phases i.e. analysis, design, development, implementation and evaluation according to ADDIE model. The first phase was the analysis-phase in which needs analysis of the target population was done. Pre-test and needs-analysis-questionnaire were administered to determine the needs and requirements of the target group. The second phase was the design-phase in which the instructional plan was designed, incorporating Gagne's Nine Events of Instruction, including course objectives, course outline, instructional procedures, activities, and evaluation. Third phase was the development-phase in which the instructional material (in the form of instructional modules) was developed as planned in the design-phase. Fourth phase was the implementation-phase in which Instructional modules were implemented through blended approach. The last phase of instructional system design (ISD) was the evaluation-phase in which the whole process of instructional design was evaluated and the effectiveness of ISD examined through post-test and course evaluation form. The result show that: a) the needs analysis was successful in finding the performance gaps of learners, b) the course which was designed in line with the findings as shown in the needs analysis proved to be effective. It was recommended that using appropriate models of instructional system design will help plan other courses and training programs in the field of teacher education.

Key words: Instructional Design (ID), Teacher Education, ADDIE, Gagne's Nine Events of Instruction, Module Development, Courseware Development

CHAPTER 1

INTRODUCTION

Teacher education is considered one of the most important areas in the field of education as it aims at providing professional trainings for prospective teachers. The professional trainings are offered under various teacher training programs focusing on developing professional skills and dispositions according to the requirements of the teaching profession. Maintaining the quality of teaching and learning has got a lot of importance in the field of teacher education because the development of a nation rests on that. The quality of education depends entirely on whether or not the teachers are equipped with the latest teaching skills that include understanding learners' aptitude. The instructional designs are meant to help the teachers impart education to the learners effectively and efficiently. Therefore, designing effective teacher education programs and courses for skill development of prospective teachers according to the needs and requirements of the profession and learner is of much importance. The trends in instructional methods and strategies are getting more and more integrated with technology. So, there is a need to explore new dimensions of course development and designing instruction in order to bring innovation into teacher education. Instructional design (ID) received much attention in recent years as an emerging field to develop rigorous types of professional trainings in various disciplines. Instructional design has been exploited in devising numerous models to design, develop, implement and evaluate instructions to achieve effectiveness and efficiency in teaching and learning. Most of the instructional

models prefer adopting the general framework of ADDIE (McGriff, 2000) that is Analysis, Design, Development, Implementation, and Evaluation—which provides a paradigm based on various processes of the generic Instructional Design (ID). Kallio (2008) believes that ADDIE can be used in all forms of instruction with its specific attributes. It is comprised of five progressive phases: The analysis-phase involves situation analysis and needs assessment of learners to identify performance gap. The design-phase seeks to determine instructional goals, objectives and planning learning experiences keeping in view the performance gap identified in previous phase. The development-phase designs and develop the instructional material. The implementation-phase executes the instructional materials in the given program/course and the evaluation-phase evaluates the effectiveness of the instruction/course/program. ADDIE is, therefore, a process to generate performance-based episodes of creating intentional learning environment and thus provides a baseline to develop effective classroom instructions according to the needs and requirements of learners from diverse backgrounds. This study intended to understand the performance gap and identification of current situation, factors, problems, and needs of prospective teachers in experiencing technological resources in classrooms so that appropriate methods, strategies, means and approaches may be rationally identified and selected to train prospective teachers with knowledge and technical skills related to teaching and learning strategies according to the needs of the industry.

A number of researchers in education have used instructional designs and ADDIE in several ways in the field of teacher education and professional development of teachers, such as: designing an instructional system for online learning environments (Bajbouj,

2015), developing philosophical inquiry approach in moral education (Zulkifi, Razak & Mahmood, 2018), designing online course in distance education platform for programming languages at undergraduate level (Durra & Ataizi, 2016) development of blended learning curriculum (Kristano, Mustaji & Mariono, 2017), and evaluation of case-based e-CME activities (Mojtahedzadeh, et al, 2015), development of an open online course for professional development of teachers (Trust and Peckers, 2018), investigating the application of ADDIE Model of Instruction by secondary school teachers (Nagusa, 2014) development of the curricula for medical educators (Cheung, 2016) and examination of e-book design process on pre-service teachers (Usta & Guntepe, 2017), ADDIE in preparation of instructional material for traditional, electronic and online teaching (Drljaca et. al, 2017), application of learning theories and models of instructional design in classrooms and laboratory at higher education level (Khalil & Elkhider, 2016). These researches reflect that ADDIE can be applied effectively and efficiently in several ways to meet the intended objectives. Many Researches have shown application of instructional design and ADDIE in general as well as in teacher education and professional development of teachers, however, limited attention have been paid to design effective teacher education programs, specifically for prospective teachers. In this study ADDIE was used to design, develop implement and evaluate the course of Teaching and Learning Strategies for the prospective teachers in BS Education Program of the Department of Education at International Islamic University, Islamabad. This study intended to understand the performance gap and identification of current situation in the context discussed above. The study involves understanding the factors responsible, identifying the problems faced by the learners, and determining the needs of prospective teachers so that appropriate methods,

3

strategies, means and approaches may rationally be identified and adopted into designing the course to train prospective teachers. The contents of the course were designed and developed in the form of instructional modules/courseware using Gagne's Nine Events of Instruction. It is meant to explore new dimensions for teachers to apply ADDIE and Gagne's Nine Events of Instruction in developing certain courses which would ultimately help improve the quality of instruction in teacher education.

1.1 Rationale of the Study

Teacher education has been considered one of the most important areas in the field of education to train prospective teachers in order to teach learners of diverse needs and levels effectively and efficiently. The emerging trends in teaching and learning have brought about a paradigm shift in education that has had an impact on educational system, that includes, teaching methodology and students' learning styles. The trends in instructional methods and strategies are moving towards integrating technology into the classroom. The Instructional System Designs provides a framework that incorporates multimedia and interactive features in the curriculum to create a conducive teaching and learning environment. The aim of this research was to develop an instructional system design based on ADDIE incorporating Gagne's Nine Events of Instruction to design the instructional modules for the course of Teaching-learning Strategies and Reflective Practices to teach prospective teachers of BS Education program of the Department of Education at International Islamic University, Islamabad. This instructional system design would give the teachers an opportunity to apply innovative ways in their teaching and the learners will learn more productively according to their needs and aptitudes. ADDIE has

4

been widely used to develop training programs and courses at different levels and in various fields. ADDIE has been widely used to develop effective training programs and courses at different levels and in various fields. In present study a prospective teacher training course has been designed keeping in view the systematic procedure of ADDIE that is: Analysis, Design, Development, Implementation and Evaluation.

During these five phases a needs analysis of the target group was conducted for course planning; design and developed instructional modules based on Gagne's Nine Events of Instruction; delivered instruction through teaching a course and evaluated the utility and effectiveness of Instructional System Design on prospective teachers learning. ADDIE is not only the overall process, but its each phase is also a process itself having its own specifications and procedures to be handled carefully. Because the output of each phase is the input of next phase therefore mismanagement at any stage can affect the whole process. That is why evaluation has been considered as an ongoing practice and is vital at the end of each phase to avoid any errors. ADDIE provides a baseline to develop effective classroom instruction keeping in view the needs and requirements of learners of diverse backgrounds. There are multiple instructional design models introduced and developed by researchers and instructional designers, but ADDIE is the generic, basic and simplest representation of instructional design having the essential steps of an Instructional system design. Therefore, the present study intended to implement ADDIE to develop an Instructional design in teacher education program.

1.2 Statement of the Problem

Maintaining the quality of teaching and learning has tremendous importance in the field of teacher education to meet the teaching standards and demands of a nation. The current trends in instructional methods and strategies are moving towards integrating technology in teaching and learning. So, there is a need to explore new dimensions of course development and instruction to improve and upgrade teacher education programs. Moreover, there is a need to design the systematic development of instructional specifications using learning and instructional theory to ensure the quality of instruction. Designing effective teacher education programs and courses for skill development of prospective teachers according to the needs and requirements of the profession and learner is of much importance. The study involves understanding the factors responsible, identifying the problems faced by the learners, and determining the needs of prospective teachers so that appropriate methods, strategies, means and approaches may rationally be identified and adopted into designing the course to train prospective teachers. Therefore, it was proposed that a needs assessment was required to understand the performance gap and identification of factors, problems, and determination of needs of prospective teachers in experiencing technological resources in a blended learning environment in the classrooms. ADDIE Model and Gagne's Nine Events of Instruction have been incorporated in developing numerous instructional designs and models. Based on ADDIE Model, the present study aimed at developing an Instructional System Design and creating instructional modules for a course titled Teaching and Learning Strategies using Gagne's Nine Events of Instruction as basis for content development of module. It is meant to explore new dimensions for teachers to apply ADDIE Model and Gagne's Nine Events of

6

Instruction in the course development—which will help improve the overall situation in teacher education.

1.3 Objectives of the Study

The study is to focus on the following objectives:

1. To conduct a needs-analysis of the target group as required in ADDIE model;

2. to design and develop instructional modules based on Gagne's Nine Events of Instruction;

3. to deliver instruction through implementation of Instructional design in teaching a course on teaching and learning strategies;

4. and to evaluate the utility and effectiveness of Instructional System Design on students learning.

1.4 Research Questions

1. What are the learners' current needs and demands and the level of their skills and abilities—based on which—the requirements of the course and instructions would be designed?

2. How can instructional modules based on Gagne's Nine Events of Instruction be designed and developed to attract and involve all the senses of learners?

3. How will the Instructional System Design be implemented effectively to teach learners?

4. How would the utility and effectiveness of Instructional System Design be evaluated?

1.5 Significance of the Study

Instructional design is a powerful tool for providing learners with a matrix of different learning experiences and opportunities under various learning modes. The framework used in the study would provide a guideline for instructional designers and curriculum developers in development and implementation of effective pedagogical and andragogical applications in various subjects—specifically in the area of teacher education. Instructional designs allow information to be displayed in variety of formats that enable students to interact with the materials efficiently. The present study provided evidence of as to what extent instructional system design has the potential to design and deliver in classroom effectively and efficiently. Consequently, teachers and students would be able to use technological resources in classrooms to have a blended learning environment along with self-study component with face to face interaction. Teachers would be able to use interactive instructional modules developed through instructional system design to incorporate e-learning components in their regular teaching materials, that include: integrate content, pedagogy, and theory to build on experience and address individual areas of interest and need, while being responsive to the needs of student to build knowledge base, abilities, and dispositions with regard to teaching techniques, curriculum design, assessment practices for informed decision-making in the classroom and enhance proficiency in teaching, learning, and professional development.

1.6 Delimitation of the Study

The study was delimited to the students of BS Education Program of the Department of Education at International Islamic University, Islamabad. It was to focus only on the course of Teaching-learning Strategies and Reflective Practices.

1.7 Conceptual Definition of Major Terms

1.7.1 Instructional Design

Instructional Design is the process of developing instructional specifications keeping in view learning and instructional theory. It is the systematic procedure of analysis of learning needs and goals; which is designing and developing a delivery system, instructional materials and activities to meet those needs, implementation and evaluation of the effectiveness of overall instructional process. (Pennsylvania State University, na). It is a roadmap that helps ensure the achievements of outcomes through diverse learning environments.

1.7.2 ADDIE Model

ADDIE is acronym for the five phases of Instructional design: Analysis, Design, Development, Implementation, and Evaluation. It is the basic framework of instructional system design.

1.7.3 Gagne's Nine Events of Instruction

Gagne (2005) described nine specific internal processes that occur when a person is engaged in learning. It also explains how teacher can support these processes through steps called the events of instruction.

1. Gaining attention

2. Informing the learner of the objective

3. Stimulating recall of prerequisite learned capabilities

4. Presenting the stimulus material

5. Providing learning guidance

6. Eliciting performance

7. Providing feedback about performance correctness

8. Assessing the performance

9. Enhancing retention and transfer

CHAPTER 2

LITERATURE REVIEW

This chapter presents a detailed review of the literature for in-depth understanding about the concepts, theories and relevant researchers about the present study and its related areas.

2.1 Instructional Design

Instruction in education refers to an intentional arrangement of learning experiences and a pre-planned goal-directed teaching process (Romiszowksi, 1981) in order to achieve the intended learning outcomes affectively. Instruction is, thus, different from education, training and teaching because education is a broader term that involves all experiences in which people learn and includes training; teaching and instruction. Training is a subset of instruction designed to develop any specific skill while teaching is a process of instruction/education delivered directly by a person, not through certain mode of computer or other media. Therefore, instruction is the process of developing and disseminating information, materials and activities in order to meet the set objectives and attain identified learning goals.

The term "design" is a process of problem identification and problem-solving in which systematic, precise and creative planning and designing of instruction is involved for effective and efficient implementation of instructional plan to solve an instructional problem. Inappropriate planning can have undesirable consequences such as wastage of resources, time, and money etc. the fallout of poor instructional design can have long-term

effects with ineffective, inefficient learning environment and unmotivated learners. An efficient design must consider all those factors that would make possible the successful implementation of instructional plan.

The basic level of instructional design process involves systematic planning of instruction at three levels: carrying out the analysis to identify the learning goals, devising instructional strategies; and evaluating procedures for the improvement and course revision. Instructional Design is a process of planning and developing instructional procedures keeping in view instructional and learning theories. It is a systematic procedure of analyzing learning needs and goals, designing and developing an instructional delivery process, implementing the instructional materials and planning activities to meet those needs, and evaluating the effectiveness of overall instructional process. (Pennsylvania State University, na).

Instructional designs have been extensively used to identify performance gaps and develop training programs in order to improve human performance in terms of efficiency and effectiveness. Efficiency is the ratio between the inputs and outputs, whereas, effectiveness means assessment of desired and obtained results. Therefore, Instructional Design is a framework to plan teaching in logical steps (Richards & Lockart, 1994) to carry out effective and efficient instruction.

2.2 Philosophy of Instructional Designs

Philosophical understanding of a concept or design has a pivotal role in any field of study as it provides a rationale for making decisions, provide historical insight, directions and common grounds with other professions. Instructional designers should

12

have an in-depth study on educational philosophy and theories to develop a sound background of learning and instruction to form the baseline of instructional design.

2.3 Theories of Instructional System Design

Theory is an organized set of statements that allows us to explain, predict, or control events (Smith & Ragan, 2005). There are two types of theories: descriptive and prescriptive. Theories in which actions are prescribed for certain results are called prescriptive theories whereas descriptive theories are those in which conditions are described and hypothesized as they exist. A theory provides the baseline to the instructional designers to design meaningful instructions. Overtime many theories have influenced instructional design including, learning theories, instructional theories, general system theories and communication theories (Richey, Klein & Tracey, 2011).

2.3.1 Learning Theories

Effective Instructional designs are based upon learning theories in order to plan and organize external events to facilitate the internal learning processes because learning theories describe the principles and conditions of learning; that is, how people learn new ideas and concepts and what exactly learning is. Therefore, Instructional design systematically reflects learning principles into instructional plans for efficient implementation of instructional material, activities, information resources and evaluation mechanism to create specific conditions keeping in view the type of learning and its requirement.

2.3.2 Behavioral Learning Theories

Behaviorism has been a dominant school of thought in early twentieth century which focuses upon the learning measured and observed through change in behavior of the learner. Significant learning theories have emerged under the influence of behavioral approach; such as: connectionism, classical conditioning and operant conditioning by Thorndike, Pavlov and Skinner respectively. Connectionism is one of the prominent stimulus response theories which describes learning through trial and error by involving three major laws of learning; effect, readiness and exercise. Classical and operant conditioning are the stimulus response theories that discuss the mechanism of positive and negative reinforcements in change of behavior. The principles, concepts and procedures emerged through Behavioral learning theories, behavioral objectives, programmed instruction, task analysis, teaching machines, practice and feedback in teaching and learning are the major applications of behavioral approach in ID.

2.3.3 Cognitive Learning Theories

Cognitivism is a school of thought that refers to the study of the mind and the mechanism behind obtaining, processing, storing and using information by individuals (Stavredes, 2011). It is the study of cognitive processes, structures and representations to mediate learning and instruction. Cognitive designs are based upon learners' individual characteristics, factors affecting the learning process and the influences of learners' ways of thinking, understands, knowing, comprehending on their internal mental structures. What is happening inside the leaners' mind is the major question for cognitivists to be answered by drawing inferences about internal cognitive processes through observing the

14

responses of the individuals as a result of different stimulus conditions (David Hung, 2001). Major cognitive theories directly influenced the process of learning and instruction such as Gestalt theory, schema theory and information processing theory. Gestalt theory explains how people see and understand the relation of the whole to the parts that make it up, instead of seeing behavior as isolated incidents and direct application of the laws of learning such as similarity, proximity and closure in learning process. Information processing theory compares human mental processes with computers architecture and the mechanism of working memory—short-term and long-term memory for analyzing, storing and retrieving data. Schema theory describes the construction of mental schema or data structures organized in human memory to facilitate recall of information and adding new knowledge based on existing schema. Cognitive theories have been influential in instructional designs for developing instructional strategies and activities to facilitate information processing and storage and retrieval of information. Graphic organizers, mnemonics, content chunking, rehearsal, cognitive task analysis, cognitive design process and massage design techniques includes many of the strategies frequently applied in instructional design.

2.3.4. Social Learning Theory

Social learning theories discuss learners' social context and the concept of learning in relation to their social environment. The work of Bandura and Rotter about observational learning and self-efficacy is significant in this regard. According to the social learning theories, the major modes of behavior are learned in social situation—a child learns to behave by imitating adults or people in the surroundings through observation. The principles and concepts discussed in Social learning theories have been implemented in

15

Instructional designs; such as, the use of symbolic models for behavior modeling, collaborative learning activities, peer tutoring, discussion groups and creating learning communities for socialization and interaction among learners. Contextual and environmental analyses for creating effective learning environment is one of the main components of ID in order to provide learner-centered instruction.

2.3.5 General System Theory

Hall and Fegan (1975) described system as a set of objects together with relationship between the objects and their attributes. A system consists of many parts connected to each other and performs a function together. General system theory has been considered as a fundamental part of instructional design because its principles and concepts provide an epistemological base line and procedural directions in ID process. The concepts and procedures of various instructional designs are supported by the system approach that is a systematic and scientific process of planning, building, implementing and testing models in particular fields in order to study an existing system, to solve a problem through developing an entirely new system or modification in existing system in successive steps. Therefore, these are called "instructional system design models" which predominantly began its development in late 1960s. Instructional system design models were constructed to provide a visual orientation to illustrate the components of the systems, their relationships and the procedures of instructions in order to achieve an outcome. A generic model ADDIE: Analysis, Design, Development, Implementation and Evaluation is the fundamental example of ISD and the baseline of many instructional design models developed overtime in order to plan and design instructional programs and trainings for

various purposes such as: military; health sector for staff development and patient education; education sector for curriculum, course and faculty development; corporate sector for general product development; organizational improvement and staff development to meet new and emerging ID problems.

2.3.6 Communication Theory

Communication is one of the most basic human activities and a process that has influenced many fields including education. The wide array of this concept reflects the scope of communication theory that not only talks about interaction between individuals but also among groups and large messes in oral, written and mediated forms. There are various models and theories of communication process according to its application in particular study area, such as: biology, psychology, linguistics, mass media, but in education, it is related to the design and delivery of instruction. Teaching and delivering instruction are all about communication that leads towards transfer of knowledge into the minds of learners. Message design techniques in ID is very much influenced by communication theory in terms of designing text, written language, visuals and images, selection of communication channel and information load, not only in print material but specifically in multimedia or web-based environments.

2.3.7 Instructional Theory

The early instructional theories have had a profound impact on the instructional designs as many principles of ID are rooted in instructional theory such as Tyler's (1949) basic principles of curriculum development and instruction in which he described the following elements: goal identification, selection, organization and evaluation to check the

17

effectiveness of learning experiences. According to Tyler (1949) identification of goals and objectives should be based upon the information gathered from the students about their needs and requirements related to the course. In other words, conducting "needs-assessment". For appropriate selection of learning experiences, he suggested the following principles: appropriate prior knowledge and predispositions, satisfaction from attainment of desired objective, maintaining student and instructor's interest and opportunity to practice. He suggested that learning experienced should be sequenced, continuous and integrated to produce meaningful and long-lasting impact. He advocates the importance of summative and formative evaluations with follow-up studies to determine the effectiveness of learning experiences. Bloom's taxonomy, individualized instruction, school learning model by John Carroll to calculate actual learning time of student, Bloom's addition of human characteristics in school learning in which he discussed the essential components of instructional quality such as providing cues and directions, active participation, feedback and reinforcement—are all based on the psychological principles of learning. Blooms also included an essential component in his instructional theory named as learning outcomes in which he suggested a relationship among learning outcomes and other variables such as students cognitive and affective characteristics, quality of instruction, mastery of learning task, rate of learning and students' achievement of learning outcomes. Bruner's (1966) cognitive theory of instruction is another influential theory in the field of ID in which he discussed the four components necessary for instruction: predisposition, structure of the representation of the knowledge, sequence of presentation to enhance learning and reinforcement through feedback and rewards keeping in view culture, motivation, and

personal characteristics of learners. All these above mention concepts and principles have been frequently applied in various ID models.

2.3.8 Media Theory

Media theories are concerned with facilitating and enhancing learning process through the use of instructional media and technology. This field has influenced the ID process in terms of content presentation with the help of media for maximum accuracy, concept formation and creating realistic learning experiences. Edgar Dale's (1946) cone of experience visualized the role of media in instructional process by giving abstract to concrete learning experience till the provision of direct experience to the students during instruction. Visuals have a fundamental importance in instructional media theory and play in variety of forms such as realistic images to refer real world, analogical to portray comparisons and maps and graphical organizers for logical representation, according to the requirement of the subject matter. It involves not only still pictures, diagrams, illustrations, maps but also videos, computer generated images and animations. Dual coding theory by Allan Paivio (1971) supported to employ multimedia with sound in order to provide visual as well as verbal information to strengthen the effectiveness of instructional media in teaching-learning process. The new concept of media ecology also emerged that considered media as a learning environment in which user has a direct interactivity with technology that lead towards individualized instruction and group instruction.

Media selection has variety of models that focuses upon self-instruction, group instruction, and e-learning environment to facilitate learning keeping in view learner characteristics, content, instructional strategies, environment and management. Use of

media and delivery systems are concerned with two major functions: automating instruction in which teaching machines and programmed instructions for individualized instruction has been used to automate instructional process. The other function is creating realistic and interactive learning environments through computer-based and web-based online instruction. Media theory provides a baseline approach to create an effective and attractive learning environment by engaging all senses of learners through advanced instructional technologies to enhance teaching-learning process and facilitate instruction.

2.3.9 Conditions-based Theories

Condition-based theories are related to the selection and design of instructional strategies for performance improvement in the learning process. This field has emerged from instructional psychology research in which psychological principles are applied to enhance learning which have become more relevant in ID research lately. The philosophy of the condition-based theories is based in the modification and management of teaching keeping in view the major components of teaching-learning processes such as: learning outcomes, subject matter, learners' characteristics in order to develop a harmony between the internal process of learning (going on in the minds of the students) and external instructional processes, to make the teaching more effective. The major ID applications of condition-based theories are: Blooms Taxonomy of learning objectives in which he presented classification of educational objectives; Gagne's work on "domains of learning" to explain types and conditions of learning and identification of learning tasks; "Events of Instruction" in which nine components are involved to design activities for effective instruction and information processing; "Learning hierarchies" to determine learning and

20

instructional sequence; and "Performance-Content Matrix "by Merrill (1983) for classification of learning tasks.

The scope of condition-based learning theories has been expanded to cover the principles derived from the theories of motivation, learning and instruction. "Generative and Supplantive Strategies" by Smith and Regan (2005) to support internal learning processes and knowledge construction, "Complex Learning" by Merrienboer and Kirschner (2007) for application and transfer of skills:, David Jonassen's (1997) work on Problem-solving influenced the condition based ID theory in term of developing structural knowledge, metacognitive and problem-solving skills and "Motivational Design" by Keller (1983) addressed learners motivation through designing instruction keeping in view learners abilities, skills and prior knowledge. Keller's ARCS model (relevance, confidence, satisfaction, attention) of motivation also covered motivational problems and strategies in the instructional design process.

2.3.10 Constructivist Design Theory

Constructivism has had a profound impact on instructional design which believes that every individual construct a unique set of knowledge or personal interpretation based on his experience and learning. Constructivism can be defined as "an active process in which meanings are developed on the basis of experience" (Bednar, et al, 1991). Social constructivism is another aspect of constructivism in which learning is considered a collaborative activity.

In recent years new approaches in teaching-learning strategies and ID has emerged keeping in view the principles of constructivism. ID practitioners take guidance from

21

constructivist approach specifically in developing self-knowledge, providing facilitated and active learning, designing authentic and contextualize learning activities, creating rich and collaborative learning environments, conducting analysis, and designing and conducting assessments. Moreover, development of constructivism as theory expanded its scope as a constructivist instructional designs theory not only to adapt new ways of design and development of instruction but as a tool of reexamination of design process and redefining the role of technology accordingly. Constructivist instructional designs models are based on "nonlinear, cyclic and iterative design process using authentic problem-solving techniques" focusing local context and collaborative development procedures. These models are different from ISD models because ISD models are objectivists and supported by empirical research and constructivist design models are based on the multiplicity of perspectives that cannot be generalized. Layers of negotiation ID model by Cennamo (2003) and Recursive, Reflective ID Model by Willis (2009) are the examples of constructivist ID models represents recursive and reflective process.

Constructivist instructional design has a deep-seated impact in providing theoretical support for creating online learning and Computer-based Collaborative Learning Environment and suggests ways in which activities based on constructivist principles can be applied to sustain corresponding mental constructions. (David Hung, 2001). Bajbouj, Ali and Shah (2015) adopted a constructivist design approach to develop an instructional design for programming languages course. Online Learning communities and social networking is the result of the development in the field of social constructivism

22

in which learner is actively sharing experience and gaining multiple perspectives, collaborating and interacting with each other over a mutual area of interest.

2.3.11 Performance Improvement Theory

Performance improvement refers to the use of system approach to identify and address performance gaps and problems for the improvement of the performance of individuals, programs and organizations. General system theory, communication theory, learning theory and organizational development theory provided the baseline to the performance improvement theory. There are several performance improvements models and most of the models have five major components: 1) Performance analysis a comparison of actual and desired performance to find out performance gap; 2) Cause analysis to determine root causes of performance problems; 3) Selection, design and development of interventions to improve performance; 4) Implementation and change management to obtain support for a new intervention; 5) Evaluation and measurement through formative, summative and confirmative assessment in order to determine the impact. (Van Tiem et al., 2004).

The cause-analysis-phase is based upon Behavior Engineering Model by Gilbert (1996) in which the principles of behavioral learning theory was applied. Joe Harless (1970) developed the Performance Improvement Process Model to improve the quality of human performance in which he introduced the concept of front-end analysis along with organizational and project alignment; that covers intervention design, testing, implementation and revision as well as evaluation and monitoring of project. The Organizational Elements Model by Kaufman (2006) refers to the identification and

23

alignment of results and their consequences by including three levels of organizational needs, micro, macro and mega along with two levels of qusai needs process and inputs associated with strategic mega, micro and macro level planning for each organizational element.

Evaluation Models for Performance improvement were also introduced in order to evaluate the impact of Performance improvement interventions. Kirkpatrick's four-stage evaluation model originally developed in 1959 has been used until now by the instructional designers to determine the impact of training programs and other type of interventions and strategies. In response to the criticism on Kirkpatrick's model about its narrow approach in training discrete skills and biasness towards bottom-line outcome, Brinkerhoff (1988) introduced a Six-stage Integrated Model of Evaluation. Results Assessment System was another evaluation model introduced by Swanson and Holton (1999) for measuring the outcomes of performance improvement in three distinct domains: performance, learning and perception in order to make decision that may lead to increase performance. The current trends in the field of performance improvement are getting closer to instructional design because both are concerned with measurable outcomes, performance improvement and learning of individuals, organizations and systems through training, education and strategic interventions in a result-oriented system.

2.4 History of Instructional System Design

History of ISD begins with the contribution of Aristotle, Socrates and Plato for conceptualizing learning theories and instructional techniques such as questioning, argumentation, modeling, repeated practice and feedback. William James wrote Principles

24

of Psychology in 1890 in which he emphasized the basic pedagogical principles of instructions including planning, gaining attention, providing new information in connection with the previous knowledge and curiosity.

1900 was the era of visual instruction movement, filmmaking and technological development. During that time teaching through films was adopted as a method of instruction in schools, first catalogue of instructional films was published, teacher training institutes began to offer visual instruction courses and the Computing Tabulating Recording Corporation was established in 1911. This was followed by the behavioral school of thought that emerged during the World War-I under the influence of the works by E. L. Thorndike and his fellows. In 1920 the concept of educational objectives and individualized instructions was introduced by Mary Ward and Frederick Burk. Meanwhile, Instructional Plans by Carleton W. Washburn and Helen Parkhurst, Social Efficiency Movement by Franklin Bobbit and Ralph Tyler's concept of learning objectives and teaching machines by Sidney Pressey were presented. National Professional Organization for Visual Instruction later named as "The Association for Educational Communications and Technology" (AECT) and International Business Machines (IBM) was established in 1924.

During the era of Great Depression in 1930s and he Second World War (1941-1945) the Progressive Movement flourished. Rousseau, Pestalozzi, Froebel and John Dewey were one of the prominent philosophers of that time. Ralph Tyler's work on writing instructional objectives in behavioral terms, introducing the assessment procedure of formative and summative evaluation, Instructional Media Research and Development for

military training needs in contribution with Gagne, Briggs and others educational psychologists in designing training modules and instructional media and technology are some of the major developments of this time. Moreover, other ground-breaking theories such as Dale's Cone of Experience (1946), Bertalanffy's General System Theory (1940), a behaviorism movement by Watson followed by the principle of operant conditioning by Skinner provided a baseline to the use of Instructional System Designs in teaching and learning process.

In 1950s and 60s Behaviorism flourished and components of ID began to be developed and articulated. Programmed Instructions by Skinner, Task Analysis Procedures by Miller, Taxonomy of Educational Objectives by Benjamin Bloom in 1956 and Development of IBM Teaching Machine Project were some of the major contributions in ISD history. Robert Mager's procedure of writing behavioral objectives (1962), criterion reference testing by Robert Glaser (1962), Scriven's (1967) discussion about importance of formative evaluation, instructional system and its mechanism defined by Robert Glaser (1962) Nine Events of Instruction and Psychological Principles in System Development by Robert Gagne (1965) were considered milestones in the development of Instructional Design. The instructional design movement was founded by James Finn who introduced the theory of system approach. Ted Nelson (1965) invented the term hypertext, while, the first comprehensive CAI elementary school curriculum was developed in 1963 and the Computer Curriculum Corporation (CCC) was launched in 1967.

During 1960s and 1970s, major developments in ISD and instructional applications of computers were observed such as IBM 1500 computer developed for computer-assisted

instruction, PLATO, TICCIT systems and Apple I Computer by Steve Jobs and Steve Wozniak. ISD became a specialized field of study wherein various ID Models were developed and by the end of the decade more than 40 models had been estimated.

In 1980's and 90's computer-based interactive instructional systems and personal computers had started being used in educational institutes, corporate sectors, training departments, and consulting firms. In this regard, Component Display Theory by David Merrill and Constructivist approach was a breakthrough in presenting the instructional material, designing learning environment and multimedia development were of much importance. Development in IT was significant; particularly, creation of World Wide Web, Netscape navigation browser software, Hypertext, hypermedia and internet. Application of ID in corporate setting for organizational development and enhancing human performance made a great impact in the field of ISD and keeping in view organizational needs more complex and elaborative designs were introduced. Rapid Prototyping was also introduced for evaluation and improvement of instructional material and computer-based training via CD-ROM that become a common method of delivering interactive instructions.

2000 has been an era of performance technology management for educational and other organizations as well as application of multiple instructional technologies for objective based instruction, intranet and internet facilitated instructional designs, web-based applications for e-learning and online distance education systems. With the improvement of internet facility and its bandwidth, the use of rich media such as videos, interactive simulations, gaming technology and instructional advancement in online learning via Learning Management Systems (LMS), MOODLE, MOOCS, was made

possible which allowed to manage, deliver, and track online learning courses and assessments.

2010s can be considered as an era of advancement in mobile technology, smart phones and tablets followed by social media applications penetrated in almost every sector. Various approaches of e-learning have been experimented. The concept of "blended learning" emerged in education and industry that made possible the delivery effective training experiences. A paradigm shift—from traditional face to face instructions to online and blended learning approaches—has revolutionized the global system of education in terms of delivery and dissemination transforming the concept of the traditional classroom. Today personalized learning outcomes based on instructional materials are being designed to create and enhance teaching and learning experiences.

2.5 Models of Instructional Design

Some of the ID models have already been discussed in the theoretical perspective of ID along with their corresponding theories. This section specifically focused upon ID models. Models are graphical representation to visualize the existing problem, to break it down into discrete, manageable units (Reiser, 2001). Instructional models, thus, are the conceptualized simple representations of complex forms and concepts to provide procedural frameworks for the systematic instructions. It is a guideline or sets of strategies to integrate fundamental components of ID process such as needs-analysis of the target population to identify the goals and objectives, design and developing combinations of the instructional strategies, assessment and evaluation procedures. (Learning technology Service, NC State University, 2010). These basic components are common in almost all

instructional models. Instructional models can be followed in a linear fashion or modified, elaborated and tailored according to the instructional needs, requirements and situations to create a workshop, course, curriculum, program, training session (McGriff, 2001). Application of ID models require a thorough knowledge about theories of learning and instructional design to ensure efficiency, effectiveness and quality of training, human performances, institutions and organizations.

A great number of instructional design models have been developed for various educational settings ranging from simple to complex that provide step-by-step guidance for developing instruction. This section provides a brief overview of prominent ID models developed overtime. According to Gustafson (1981) there are three categories of models: classroom oriented, product oriented, and system oriented. Norbert Seel (1997) identified three types of models: theoretical/conceptual, organization, and planning and prognosis. Placement of any model is based upon the assumptions driven by the model developer.

2.5.1 The ADDIE Model

ADDIE is a basic and generic instructional design (Reiser & Dempsey, 2007) influenced by the system theory with five core elements: Analysis, Design, Development, Implementation, and Evaluation (Sugie 2012). ADDIE is an umbrella term that describes a systematic approach to instructional development and also refers to a family of models that share a common underlying structure as there are more than 100 ID Models based on generic ADDIE (Molenda, 2003; Kruse, 2011).

29

The ADDIE Model
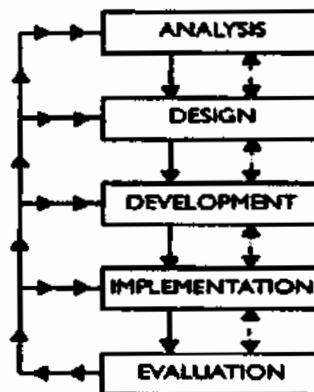
Figure 2.1

2.5.2 Algo-Heuristic" Theory

Lev Landa (1974) proposed Algo-Heuristic Theory wherein he presented a logical structure of algorithms and heuristic as a method of instruction to develop higher order and critical thinking skills among students.

2.5.3 Instructional System Development (IPISD) Model

The IPISD Model introduced by Branson (1975) is a five-stage model; comprised of analysis, design, develop, implement and control. This model focuses upon inspection techniques throughout the ISD process for prototyping within optimum quality, time and cost.

2.5.4 Gerlach and Ely Design Model

Gerlach and Ely Design Model, developed by Vernon S. Gerlach and Donald P. Ely (1980), focused on the classroom teachers who want to deliver and design instruction

30

keeping in view the principles of learning not only at K12 but also at higher education level. This model focuses on ten stages: specification of content, specification of objectives, assessment of entering behaviors, determination of strategy, organization of groups, allocation of time, allocation of space, selection of resources, evaluation of performance and analysis of feedback.

2.5.5 Kirk and Gustafson Design Model

Kirk and Gustafson Design Model (1986), that was published in a book titled "Instructional technology: A Systematic Approach to Education" by Frederick G. Knirk and Kent L. Gustafson, contained three phases: the problem determination stage involves needs-assessment and task analysis for identification of performance gaps and goal setting; the design stage includes designing objectives, specification of teaching strategies and media; and the development stage focuses on creating and producing instructional material or the final product, its revision, implementation and analysis of the results. This model has three independent phases having their own further components and can be used in a variety of situations by the experts as well as novice instructional designer.

2.5.6 Hannafin and Peck Design Model

Hannafin and Peck Design Model (1987) involved three sequenced phrases: the need assessment, design and development & implementation along with the on-going process of evaluation. The process starts with the assessment-phase for a thorough needs-analysis of learners, organization and performance gaps for further determining the goals and objectives. The second stage, that is, the phase of designing depends upon the outcome of the needs-analysis in which instructions and learning experiences are designed to fill the

31

performance gap as well as the requirements of the learners and organization. The third phase involves development and implementation of the product/training or program developed keeping in view the findings of the design-phase. While, valuation is a continuous process in this model and covers all phases simultaneously.

2.5.7 The Diamond Model

The Diamond Model (1989), introduced by R. M. Diamond in his book "Designing and Assessing Courses and Curricula: A Practical Guide", provides a system-oriented model having two phases specifically designed for higher education level. Phase one focuses on project selection and design starts from the project generation and selection for examining feasibility of the project, needs and success rate. The second and third step of the phase one is based on basic planning inputs and project specific factors covering research, goals, time, all types of resources, and students related factors. The phase two of this model further comprises of seven stages regarding project production, implementation and evaluation. Diamond model presents a comprehensive learning system with systematic design, structure and flow to design courses and curriculum projects at the higher education level with easy to use, cost effective and sequential features.

2.5.8 The Spiral Model

The Spiral Model is a spiral shaped risk driven model presented by Barry Boehm in 1986 in his paper "A Spiral Model of Software Development and Enhancement" in which he described a software development process framework by integrating risk management procedures. This model comprises of four sectors. The first sector begins with determining objectives, alternatives and constraints through a detailed management plan.

The second sector is about evaluating alternatives, identification and resolving risks by conducting a detailed needs-analysis, prototyping and risk reduction strategies. The third sector is based upon development and validation of the next level product by selecting the best development model keeping in view the identified risk factors. While the last phase is about planning the next phase through project revision and decision making to continue the next loop of spiral. Planning for next phase is required in case the continuation of spiral is decided.

2.5.9 Rapid Prototyping Model

Rapid prototyping model (1990), introduced by Eli Steven D. Tripp and Barbara Bichelmeyer, introduced a design methodology specifically designed for software engineering and computer-based instruction. The model starts with the needs-assessment, contents-analysis and setting objectives. Rapid prototyping is a parallel procedure of design/construction and utilization/research keeping in view the needs, content and objectives to maintain and install instructional system.

2.5.10 Bergman and Moore Model

Bergman and Moore Model (1990) was a product-based development model comprised of six phases: analysis, design, development, production, author and validation; with corresponding four sub phases: input, activities, deliverables, evaluation. This model was specifically designed to produce effective and efficient interactive multimedia products in minimum time and cost.

2.5.11 The de Hoog, de Jong and de Vries Model

This product driven Model was introduced in 1994 and refers to a product-based model for simulations and expert systems development. It was influenced by the spiral model of software engineering by Boehm. This model presented the requirements of product development such as rapid prototyping, computer-based tools for prototype development, testing and web structures for simulation development. The web structure comprises of five partial products: conceptual, operational, instructional, interface, and learner model that represents the overall development of entire production. The spiral around axis reflects development of following four components: compliance, quality, integration and specify represents the local development.

2.5.12 The Gentry (IPDM) Model

The Gentry (IPDM) Model (1994), was an instructional product development and management model that refers to the concepts, procedures and the supporting processes accompanied by various techniques and job-aids during ID process. This model has three major components: the development component, the supportive component connected by the communication component. The development component has eight subcomponents including: needs-analysis, adoption, design, production, prototyping, installation, operation and evaluation. The supportive component involves five subcomponents: management, information handling, budget resource allocation, personnel and facilities. The major function of IPDM model is to develop a communication between two major components and subcomponents throughout the ID process.

34

2.5.13 The Bates Model

The Bates Model was introduced by Bates (1995) specifically for designing open and distance learning products and courses. Influenced by system approach and ADDIE, the model refers to a front-end system design comprised of the four stages: course outline development, selection of media, development/production of materials, and course delivery. Instructional development team and its role in each phase is also identified accordingly.

2.5.14 The ASSURE Model

The ASSURE Model by Heinrich, Molenda, Russell, and Smaldino (1996) was influenced by the Gagne's Nine Events of Instruction and involved six components: analyses learners, state objectives, selection and utilization of strategies including media and technology, learner participation, evaluation and revision. This model is comprehensive and can be used easily by teachers to plan classroom instructions and design activities for creating an effective learning environment.

2.5.15 The Dorsey, Goodrum and Schwen Model

The Dorsey, Goodrum and Schwen Model (1997) refers to a rapid collaborative prototyping specifically useful to design course and products within courses. This model reflects the five cycles of prototyping: creating a vision, exploring conceptual prototypes, experimentation of hands on mockups, pilot-test working prototypes, and full implementation of evolving vision under further four categories: process, interaction, fidelity, and feedback. The model reflects high level of interactivity and focuses on rapid prototyping across all ADDIE components, but it lacks detailed operational procedures.

2.5.16 4C/ID Model

Inspired by Elaboration Theory and Merrill's First Principles of Instruction, 4C/ID model was introduced by Merrienboer (1997). It is a four-component instructional design model: Learning Tasks, Supportive Information, Procedural Information and Part-Task Practice. This model focuses on planning and designing instructions and training programs for creating an effective learning environment to teach complex skills.

2.5.17 The Nieveen CASCADE Model

The Nieveen CASCADE Model (1997) refers to a computer-based electronic performance support system specifically designed for curriculum material development and training programs for education as well as corporate sector. Keeping in view ADDIE as a basic framework, Nieveen model starts with preliminary research while concludes with summative evaluation, along with an in-between cyclic developmental process comprised of analysis, design and extensive use of formative evaluation until the achievement of optimum quality in terms of validity, practicality, and effectiveness.

2.5.18 Seels and Glasgow ISD Model

Seels and Glasgow ISD Model (1998) is based on basic ADDIE framework that specifically emphasizes on project management and diffusion of results and is arranged into three phases: i) needs-analysis management, ii) instructional design management, and implementation and; iii) evaluation management for the promotion of adoption and distribution of the product.

2.5.19 Smith and Regan Model

The Smith and Regan Model (1999) is a system-oriented three-phased model based on cognitive psychology with its emphasis on designing instructional strategies. Its first phase is "analysis" with four subcomponents: learning environment, learners, learning task and write test items. Second phase deals with "strategy" having two further step procedures: determine organizational, delivery and management strategies, and write and produce instructions. While, the third phase involves "evaluation" in further two steps: conducting formative evaluation and revision of instructions. The major function of this model is the application of systematic problem-solving process for ensuring effective and efficient learner-centered instructions.

2.5.20 Reigeluth's Model

Reigeluth's Model (1999) also known as elaboration theory was introduced by Charlie Reigeluth for learner-centered instruction and optimal learning through sequenced procedure of instruction. Elaboration Theory suggests a seven-step instructional procedure from simple-to-complex to deliver effective instruction that is: an elaborative sequence, learning prerequisites, summarizing, synthesizing, applying analogies, cognitive strategies, and learner control. The basic objective of this theory is to develop strong cognitive structures in meaningful learning contexts. It was influenced by the works of Ausubel and Bruner.

2.5.21 PIE Model

Introduced by Stepich, Lehman and Russell (2000) this is a three-phased classroom-oriented model involving planning, implementing, and evaluating specifically

designed for effective individual or small group classroom instructions also using media and technologies. PIE model involved three components: planning, implementation and evaluation for creating a learner-centered media rich classroom environment.

2.5.22 The Dick, Carey and Carey Model

The Dick, Carey and Carey Model (2001) is a widely published and recognized system-oriented Model in the field of instructional design. The model starts with a needs-analysis and goal identification parallel with instructional, learner and contextual analysis followed by the next step of writing performance objectives, developing assessment instruments, devising instructional strategies, developing instructional materials, designing and conducting formative, evaluation along with revision of instruction ended with summative evaluation. The detailed aspects of this model are analysis and the evaluation-phase, and its design and development process can be used in education, business, industry, and military training with emphasis of performance technology and computer-based instruction.

2.5.23 Empathic Instructional Design Model

Empathic Instructional Design model by Siemens (2002) is a five-step model specifically designed to blend technology and instruction. The five steps are: i) observe, ii) collect data, iii) reflect and analyze, iv) brainstorm and v) prototype.

2.5.24 The 3-Phase Design Model (3PD)

Sims and Jones (2003) 3-Phase Design Model is an instructional design process model specifically designed for creating online projects and dynamic teaching-learning

environments with the emphasis on functional aspects of course delivery. 3PD is comprised of three integrated phases: phase 1 involves functionality that is a pre-delivery planning phase in which analysis, design and development is also involved to create a functional delivery for teaching and learning. Phase 2 is related to enhancement that is an initial delivery phase involved implementation and evaluation aspects of the project, while, phase 3 involves maintenance with ongoing delivery and support involved revision and modifications keeping in view the evaluation results.

2.5.25 Kemp, Morrison, and Ross Model

Kemp, Morrison, and Ross Model (2001) is a classroom-oriented model with major focus on curriculum planning. This instructional design reflects continuous cyclic process associated with nine major components: identification of instructional problems, learners' characteristics, task analysis, instructional objectives, content sequencing, instructional strategies, designing the message, development of instruction, and evaluation instruments. The model has been modified overtime with the addition of the components, such as projects management and support services. The other major components involved are formative and summative evaluation throughout the ID process. This model is applicable in education, business and industry and can be started from anywhere and in any sequence as appropriate.

2.5.26 SREO Model

Suppasetseree's Remedial English Online (SERO) Model by Suppasetseree (2005) is an internet-based instructional system specifically designed for interactive language teaching. This model has six phases with further subcomponents. It starts with analysis of

39

the setting—that involves problem identification, needs-assessment and curriculum analysis. The next phase is the prototype construction in which the subcomponents include writing objectives, identifying learner, selecting content, developing instructional module, specifying teaching methods and instructional media, identifying instructional environment, specifying management plan and identifying evaluation. Next phases are about producing instructional package and testing prototype and conducting teaching and learning activities and evaluations.

2.5.27 OTIL Model

Online Task-based Interactive Listening (OTIL) Model is specifically designed for English language learners. This model has following six phases with subcomponents: identify setting, setting instructional goals, design lessons, produce on-line instructional package, conduct developed session, and evaluation. This is a system-oriented model focusing task-based interactive and collaborative teaching and learning environment. Linh and Suppasetseree (n.d) developed instructional design "Facebook Based Collaborative Learning" (FBCL) Model to enhance EFL writing skills. After a detailed analysis of five instructional design models and by including a seven-step model of Brahmawong (1991) it was found to be satisfactory and appropriate for EFL instruction writing on Facebook. Therefore, it was recommended for the development of an instructional framework. Tobase et.al (2017) conducted a study and used ADDIE Model to develop and evaluate the online course on basic life support for the students of nursing school and found it effective and appropriate for devising educational strategy in virtual learning environment. Bajbouj,

Alwi and Shah proposed a new model to cater to the requirements of online learning environment.

There are numerous other models that have been developed over time in the field of instructional design according to the needs and requirements of the instructional program and the learners. It is pertinent to say that most of these and other models have adopted the general framework provided by ADDIE (McGriff, 2000).

2.6 The Approaches of ADDIE

ADDIE provides a process to generate performance-based episodes of creating intentional learning environments and by using these categories ID practitioners continue to innovate, develop and invent new approaches. Various researches were conducted in which ADDIE had been taken as a basic framework of instructional design. Bajbouj (2015) adopted ADDIE for designing an instructional system for course development and proposed a new model appropriate for online learning environments. Ozdilk and Robeck (2009) analyzed operational priorities of instructional designers according to ADDIE's steps. Zulkifi, Razak and Mahmood (2018) used ADDIE to develop philosophical inquiry approach in moral education. Cheung, L. (2016) used the ADDIE Model and developed curriculum to teach Chest Radio-Graph Interpretation to internal medicine residents. Durra and Ataizi (2016) conducted a study and applied ADDIE to design an online course on distance education platform for programming languages at the undergraduate level. Almomen, Kaufman, Alotaibi, Rowais, Albeik, Albattal (2016) applied ADDIE to a continuous professional development program for primary care physicians. All

instructional designs take classroom as a learning space in which location, time and space is dynamic.

2.6.1 Analysis-Phase

Analysis-phase is the foundational phase of instructional design to identify the performance gap and determine its causes in order to address the problems. The related literature suggests several the common procedures of gap identification in various ways. Beatty (2014) conducted a detailed literature review to analyze different video games and provided a theoretical framework to describe and analyze video games in four layers—to facilitate game designers to build or modify video games for educational purpose. Linh and Suppasetseree (n.d) introduced a new FBCL model based on the findings of analysis and synthesis of five instructional design models. Zulkifi, et. al. (2018) conducted a needs-analysis to design a moral education module and did document-analysis of current moral education curricula, teachers and students' problems, goals and objectives, previous knowledge and teaching-learning environment through focused group interviews. Cheung (2016) conducted a needs-analysis to develop curriculum to teach Chest Radio-Graph Interpretation to internal medicine residents. According to the study of Durra and Ataizi (2016) learners-analysis, contents-analysis, technical-analysis, and structural and environmental analysis was involved in the needs-analysis-phase to design a fully online course for programming languages.

2.6.1.1 Validation of Performance Gap

Validation of performance requires "performance assessment" in three successive steps. First, measuring the actual performance through observation, tests and interviews

42

and collecting data from surveys and reports. Second, confirming the desired performance. While, the third step involves identifying the causes of performance discrepancy and categorizing it in terms of knowledge, skills, and resources, etc. The instructional designs can only be suggested to address the performance gaps caused by lack of knowledge and skills—otherwise ADDIE process is suggested to be stopped.

Kristano, Mustaji and Mariono (2017) conducted a needs-analysis to identify the performance gap of students to develop a blended learning course of audio/radio media and found that students experienced difficulties in developing manuscript due to limited time and deficiency in understanding the course material. Bajbouj (2015) conducted a needs-analysis in five phases (i.e. awareness of problem, suggestions, development, evaluation, and conclusion) by adopting an improvement research methodology to propose a model for online learning environment. The study also identified challenges in implementation of the online courses such as frequently updating information, instant feedback, collaborations in online environment and diversity. Ozdilk and Robeck (2009) conducted a thematic content analysis to analyze the operational priorities of instructional designers during ADDIE and found the analysis-phase on highest priority level. To develop curriculum of Chest Radio-Graph Interpretation, Cheung (2016) analyzed learners in terms of knowledge, skills and attitude to assess performance gap of internal medicine residents

2.6.1.2 Determine Instructional Goals

The main objective or the aim of this component is to generate goals keeping in view the performance gaps. A goal is defined as the description of a broad expectation or a task in a form of statement that is expected from a student/learner after attending the

43

course or session, etc. Bloom's Taxonomy provides a guideline of organizing learning goals according to the cognitive domains, from simple to complex. In this stage, goals are determined keeping in view the performance gap.

2.6.1.3 Learners' Analysis

The main objective of learner analysis is to identify previous experiences, expectations, preferences, attitude and motivation of the target audience. Tobase and Peres (2017) conducted a needs-analysis of target audience to identify the local needs and determine the learning activities, schedules and availability of resources for designing and implementing an online course on basic life support. Mojtahedzadeh, Ebrahimzadeh, Zandi, Sarmadi and Alipour (2015) conducted a detailed system-analysis of learners' needs and preferences, capability of faculty members for e-content development and availability of IT facilities to develop an instructional design of interactive case-based e-contents. Cheung (2016) also conducted a learners' analysis to check their existing knowledge skills and attitudes towards designing a curriculum on chest radiography for medical students. Durra and Ataizi (2016) analyzed learners' preferences with respect to their characteristics, gender, academic score, previous learning experience and ability to work on online leaning platform in order to design a fully online course for programming languages.

2.6.1.4 Environmental Analysis

Creating an effective learning environment is one of the major objectives of ADDIE process—that requires a comprehensive understanding about the concept of leaning space—a term used to refer to the intentional learning that has brought about a paradigm shift with regard to the concept of a traditional classroom refocusing it in a broader context.

44

It is essential to understand the learners' environment as it has a profound impact on designing instructions. Environment-analysis determines the learning contexts in terms of the settings and location of instruction, requirements of facilities and resources, teaching-learning strategies and delivery methods keeping in view the environmental constraints and facilities. Durra and Ataizi (2016) conducted an online environmental analysis to select the most suitable online platform to design an online course for programming languages.

2.6.1.5 Job and Task Analyses

The job analysis is a detailed list of tasks and duties required to be performed in a specific job while the task analysis is a process of breaking down each task into a deeper level by further analyzing the tasks into sub-tasks to determine performance requirements. The Job and task analyses are suitable to develop skill-based instructions. Cheung (2016) conducted a job and task analysis of internal medicine residents to design the goals and objectives of a curriculum on chest radiography.

2.6.1.6 Contents-Analysis

It is a process to determine, identify and organize the content to be delivered specifically for content-based instructions. Content analysis enables instructional designers to structure and break down the related information into manageable units and sub-units in a logical hierarchy. Durra and Ataizi (2016) conducted a contents-analysis to convert the existing programming language course into a totally online distance learning platform.

2.6.1.7 Instructional Analysis

This phase determines the instructional delivery system through analyzing varieties of systems such as: face to face instruction, computer-based training, video conferencing,

ten tasks he identified for the design-phase are: identify, design and sequence course objectives, instructional material, practice examples, practice activities, feedback, revision of key points, assessment, instructional media and instructional strategies.

In the design-phase, Tobase (2017) considered following components for developing an online course of basic life support important: content selection, storyboards, developing students' profiles keeping in view the theoretical assumptions of adult learning and instructional matrix keeping in view the medical guidelines of respective country. Durra and Ataizi (2016) conducted another study to design an online course for programming languages and the components included in the design-phase are: defining the objectives, designing communication factors, ensuring the support services, setting up the course calendar and schedules, designing the course contents, developing the technological sub structure, preparing the evaluation system and setting up an online environment.

2.6.2.1 Instructional Goals, Objectives and Course Outlines

This component focuses on developing a course outline and planning instructional goals and objectives for sequencing and breaking down the contents into units, topics and sub-topics. The basic objective of the component is to help the instructional designers to determine the scope of the course and hierarchy in order to incorporate all the relevant contents in the instructions in form of modules, lessons and topics. Supporting material, activities and assessment exercises are designed in accordance with the concepts. Zulkifi, et. al (2018) designed contents of moral education curriculum in the design-phase to develop philosophical inquiry approach in moral education. Cheung (2016) also conducted

47

a study to develop chest radiography curriculum and designed the course goals and objectives in the design-phase.

2.6.2.2 Design Strategy

It is a process of determining the strategies of contents design in the form of module, lessons and topics keeping in view the objectives, concepts, knowledge and ability of the student. The process involved in this phase includes planning course structure, learning sequence, timings, content presentation, sequence of activities and intervals for activities, the supporting material, and feedback. Durra and Ataizi (2016) also conducted a structure analysis to design an fully online course on distance learning platform and organized it keeping in view the synchronous and asynchronous structure of the course for programming languages.

2.6.2.3 Instructional Strategies

Developing instructional strategies is an important component of the design-phase in which strategies to deliver instructions and contents are designed, such as warm-up, middle and ending activities along with the audio, videos and other supporting tools. A study by Zulkifi, et. al (2018) showed that teaching strategies were selected according to the course objectives to implement moral education curriculum. Cheung (2016) selected small group teaching strategies with an immediate instructors' feedback for the curriculum of chest radiography interpretation.

2.6.2.4 Learning Assessment

Designing assessment strategies according to course objectives and contents is an essential part of the design-phase. This process involves determining the types of

assessment activities and exercises at various points of the contents to measure students' learning, such as pre-tests, practice tests, knowledge review exercises and lesson assessments. Zulkifi, et. al (2018) designed assessment exercises aligned with the course objectives in moral education curriculum.

2.6.2.5 Delivery Formats and Authoring Tools

Variety of authoring tools are available for designing face-to-face instruction, online and distance education and blended learning environment. In this stage the delivery format and authoring tools are determined for successful implementation of the instructions keeping in view the conceived learning environment such as multimedia-based or blended learning environment. Technical and instructional media requirement would also be considered accordingly. Durra and Ataizi (2016) conducted technical analysis to determine the technical equipment and software in order to design an online platform for the programming languages course.

2.6.2.6 Course Flowchart

It is the visual representation of the organizational flow of the course along with all the activities and tasks. This process aims at enabling the instructional designers to review the course structure for identification of any issues or problems in the course structure. Kristano, Mustaji and Mariono (2017) developed flowchart web to design blended learning instructional material for course development. Beatty (2014) developed a multilayer framework after doing a detailed analysis of video games to show the elements and layers in video game constructions.

49

2.6.2.7 Storyboard

Story board is a visual representation or an organizational flow to describe and review the sequence of all the components of lessons. Tobase (2017) used elaborated storyboards for designing an online course for medical practitioners on the basic life support.

2.6.2.8 Instructional Plan

Instructional plan refers to a detailed plan of the implementation of teaching-learning process having session-wise objectives, session plans, course schedule, teaching-learning strategies, assessment plans and a list of required resources. Kristano, Mustaji and Mariono (2017) developed instructional lesson plan draft for planning of the blended learning course contents properly. Based on ADDIE, Mojtahedzadeh, et. al. (2015) designed teaching-learning framework for e-CME course development and selected case-based scenarios as a teaching strategy in the design-phase.

2.6.2.9 Course Design Document

The course design document is a roadmap of designing and developing phases of ADDIE process—including all the specifications in detail such as: goals and objectives, course description, outline, teaching-learning and assessment strategies, time framework, technical specifications, storyboards and graphical specifications etc.

2.6. 3 Development-Phase

This is the third step of ADDIE to develop instructional material keeping in view the outcomes of the analysis and design-phase such as developing lesson plans, course

content, instructional modules, supporting material. A prototype in the form of hardware or software may also be included in this phase. According to the study conducted by Tobase (2017) to develop online course, the development-phase includes the elaboration of required material and learning objects, tutorials, text and animations. Zulkifi, et. al (2018) developed lesson plans and course activities of eleven sessions in this phase for moral education modules and adopted the steps of philosophic inquiry for sequencing of the instructions. According to the study of Durra and Ataizi (2016) the components involved in development-phase to design an online course are: preparing an online platform, developing the instructional modules, course contents and evaluations.

2.6.3.1 Generate Instructional Material

The instructional material based on the planning done in the design-phase, along with supporting media and activities is developed mostly in the form of modules for training purposes. Keeping in view the mode of training, the format of modules can be changed—as Kristano & Mariano (2017) developed instructional material for blended learning scenario for audio/radio media development course. According to the study by Cheung (2016) instructional material on chest radiography interpretations was developed and sequenced in eight sessions keeping in view the course requirements.

2.6.3.2 Module Development

The instructional modules are developed for training purposes because they lower the delivery cost, reach to a wider target audience with effective instructional methods, associated feedback and drill and practice. Combination of collaborative activities with self-paced learning and problem-based learning can be offered through the training

51

modules to deliver the same quality of instruction to all the learners as well as a significant amount of content to the learners—that helps addressing individual differences in terms of background/skills/knowledge/learning styles, developing a homogeneous background knowledge of the topic, improving motivation, reusing the content in the future and systematically developing the instructional program. Durra and Ataizi (2016) developed such instructional modules and uploaded on the system to implement their online course of programming languages at undergraduate level. Torre (2018) created learning module to teach purposive communication course by using ADDIE framework in which the participants experienced individualized instruction, students-cantered, and technology-led learning environment.

2.6.3.3 Events of Instruction

Robert Gagne was an American psychologist who pioneered the field of instructional science. Although most of his work was done for military trainings, yet it proved to be beneficial for developing instructions for civil education as well. He simplified the concept of effective instruction and introduced an instructional design theory that came to be known as Nine Events of Instruction for different type and level of learning. His theory proposes that there are several levels and types of learning and specific conditioned instructions must be designed to be interwoven in the form of sequential events according to the type and level of the learners. Following are the Gagne's Nine Events of Instruction followed by corresponding cognitive process:

1. Gaining attention: activating learners' information receptors by providing stimulus to ensure reception of information

2. Informing learners of objectives: communicating the desired outcome to develop expectancy about the learning process.

3. Stimulating recall of prior learning: recalling of the existing knowledge for information retrieval from short term memory.

4. Presenting the stimulus: delivering contents through appropriate teaching methods for selective perception.

5. Providing learning guidance: facilitating the students to develop in-depth understanding of the concepts as their long-term memory (semantic encoding)

6. Eliciting performance: asking the learners to respond and demonstrate their learning.

7. Providing feedback: giving informative feedback on the learners' performance for reinforcement and assessment.

8. Assessing performance: giving feedback, to retrieve and reinforce learning as the final evaluation.

9. Enhancing retention and transfer: providing opportunities to practice the learned skill in a variety of situations for generalization of the capability in a new situation.

It is evident from the available researches that educators can apply Gagne Nine Events of Instruction in various educational settings to achieve the instructional goals effectively. In the field of medicine, structured lesson plan for ophthalmology trainees (Wong, 2017) and junior doctors were prepared for improvement in psychomotor skills in surgical procedures (Khadjooi K, Rostami K, Ishaq S. 2011). PowerPoint lectures for undergraduate medical students in paediatrics were also developed integrating Gagne's

Nine Events of Instruction to achieve training objectives and performance improvement (Ali, S. & Ali, L. 2015). Events of instructions can also be applied in computer based and blended classroom environments to design instructions. The findings of the study by Baba, Sale, and Zirra, (2017) revealed that a multimedia program designed with Gagne's Nine Events of Instruction supported transfer of learning by improving the learning skills of the Arts students at the secondary school level. Çalışkan (2014) found Gagne's Nine Events of Instruction, among most preferred instructional designs by pre-service science teachers in terms of planning during their course on the teaching applications.

2.6.3.4 Interactive E-lessons

Interactive e-lessons usually have many different formats based on the objectives and context of the instructions. In a common setting they have linear sequence of screens along with text, graphics, animations, audio, video, exercises, feedback, links of recommended readings, online resources and additional information on the specific topic. Mojtahedzadeh et.al (2014) conducted a study and developed e-contents for the medical education course called case-based e-CME activities.

2.6.3.5 Develop Supporting Material and Job Aids

The supporting material and job aids also developed along with instructional material. It may include readings, reference books, handouts, and other relevant resources.

2.6.3.6 Developing User Guides

The user guides are developed to provide instructions to the teachers and students for effective implementation. User guides or user manuals are detailed instructional booklets in which the instructions of as to how to use each aspect of the module are given

54

to avoid any confusion or misunderstanding. In some cases, the training guides to develop e-contents for teachers can also be designed. Mojtahedzadeh, et. al. (2015) developed guidelines for the faculty members on contents-development for e-learning and also arranged a hands-on workshop on interactive case-based e-CME content development.

2.6.3.7 Pilot Test

A pilot test is conducted to run the prototype instructional modules for feedback, assessment and revision purpose. In the study conducted by Kristano, Mustaji and Mariono (2017) the preliminary field testing was done on e-contents prototype developed for blended learning before actual course delivery for the course revisions. Zulkifi, et. al (2018) pilot-tested the moral education modules over six weeks and incorporated in modules the recommendations of the experts as a result of this process.

2.6.4 Implementation-Phase

This phase is about delivering the instructions effectively and efficiently to achieve desired outcomes and to ensure transfer of knowledge and students' understanding of material. Mojtahedzadeh, et. al. (2015) conducted a faculty development training on e-contents development following the steps of ADDIE. Zulkifi, et. al (2018) implemented moral education modules for eleven weeks on secondary school students followed by an evaluation. Cheung (2016) successfully implemented chest radiograph interpretation curriculum on internal medicine residents. Durra and Ataizi (2016) implemented online course on distance learning platform for programming languages at undergraduate level.

2.6.4.1 Management of Instruction

In this phase procedures are adopted to ensure the effective functionality of all systems and administrative support for the successful implementation of the course to produce learners who meet the job performance requirements. Therefore, developing a checklist can be very helpful to make sure the availability and functionality of all the resources available.

2.6.4.2 Teacher and Student Preparation

In the implementation-phase course that has been developed is implemented on the students according to the plan set out. Effective course instruction and successful course implementation requires a training session of the course instructor/teacher as well as students before initializing any course to get desirable outcomes. In case of online training mode, the preparation of trainers and trainees becomes more important to judge the functionalities of all training aspects.

2.6.4.3 Implementation of Instruction

Implementation of instruction involves the following components: implementation of appropriate teaching strategy and mode of the training (i.e. face-to-face, online, blended) along with all the required resources and reference material, determining the location and time schedules, preparing the environment in terms of ensuring the technical and organizational requirements in which teaching will be conducted and launching the course. According to the experimental study conducted by Tobase (2017) the platform of Moodle was selected to create a Virtual learning environment to implement an online medical course. Kristano, Mustaji and Mariono (2017) implemented the blended learning syllabus

56

for audio/ media course and found the students to be more engaged and motivated during the instructions.

2.6.4.4 Computer-based Learning Approaches

Computer-based learning approaches can be used under any type of learning domain such as Cognitive, Affective and Psychomotor. There are three major approaches of computer-based Learning (a) self-paced courseware, that is completely independent and supplemented by resources and assessments (b) facilitated instruction, that is supported by instructor (c) Blended learning, which is a combination of both the previous approaches.

Blended Learning is a combination of online learning, face-to-face activities, and real-world practice. This approach also combines different training media; such as, traditional instructor led teaching supplemented with electronic formats". Kristano, Mustaji and Mariano (2017) developed an e-learning instructional material for blended learning and found the blended learning model to be more effective practical approach than others in teaching-learning process.

2.6.4.5 Synchronous vs Asynchronous Approaches

Table 2.1

Synchronous	Asynchronous
• Time dependent • Chat and IM • Video and Audio conferencing • Online content	• Time independent • Email • Recorded lessons • Recorded audio and video • Offline content

57

2.6.5 Evaluation-Phase

Evaluation refers to the measurement of the extent of the effectiveness throughout ADDIE process, within the phases, between the phases, and after the implementation. Formative Evaluation is ongoing, during and between phases to improve the instruction before the final version is implemented, while, summative evaluation is conducted after the implementation of the final version of instruction—to assess the overall effectiveness of the instruction. In ADDIE the results of the formative evaluation of each phase may lead the instructional designer back to any previous phase; therefore, the product of one phase is the starting point of the next. Mojtahedzadeh et.al (2014) evaluated the effectiveness of case-based e-continuing medical education (CME) activities through the program evaluation questionnaire and found it to be highly rated by the participants. Kristano, Mustaji and Mariono (2017) developed blended-learning-based instructional material and evaluated the contents through expert validation at prototyping stage of the course for further improvement and modification. The results of the study showed positive impact of blended learning syllabus in the learning process. Linh and Suppasetseree (n.d) developed and evaluated the effectiveness of FBCL model through an expert evaluation form for the necessary revisions.

2.6.5.1 Formative and Summative Evaluation

Formative evaluations run parallel to the learning process to assess instructional objectives as well as the quality of learning material. Summative evaluation is done at the end or completion to evaluate the effectiveness of overall process. An online course evaluation conducted by Tobase (2017) reflected a detailed procedure of formative and

summative course evaluation through pre-posttests, checklists and course evaluation forms and results showed satisfactory results. Linh and Suppasetseree (n.d) added formative, summative evaluation and revision of instruction as an important component of FBCL model. Zulkifi, et. al (2018) used expert observations as formative evaluation and interviews from the students as summative evaluation after implementation of the moral education modules and found them applicable and effective to improve critical thinking and moral reasoning among the students. Cheung (2016) conducted formative evaluations through feedback from learners and summative evaluations through four-point rating survey from the faculty. Durra and Ataizi (2016) conducted formative evaluations of an online course on programming language through homework assignments and weekly opinions of learners and faculty on distance education platform.

2.6.5.2 Determining Evaluation Criteria

There are varieties of models available to determine the criteria of evaluation but generally students may be evaluated on three levels: perceptions, learning and performance. Each level requires specific tools to gather data and it is on the instructors as to which tools they prefer for each level—for this purpose, questionnaires, checklists, surveys, pre-posttests, in depth interviews and many other appropriate options can be selected.

2.6.5.3 Evaluation Document

A report in which evaluation plans as well as results of formative and summative evaluation is recorded and documented is called an evaluation document. Evaluation plans

can be revised keeping in view the requirements and the level of satisfaction of the stakeholders.

2.7 New Trends in ID

Instructional Systems Design (ISD) is a systematic decision-making process of identifying instructional problems, translating learning problems into instructional plans, achieving learning outcomes and ensuring the quality of instruction keeping in view all stakeholders (e.g., learners, learning facilitators, administrators, employers and parents). An instructional design promotes effective and efficient instructions, keeps the learner involved and motivated, and helps to improve their learning processes. Teaching-learning process requires a clear roadmap of the instructions, aims and objectives, selection and organization of learning experiences, and the ways the training could help the learner as well as how to perform new tasks or acquire new skills to improve learner's performance and efficiency.

The instructional designs provide a baseline to educational institutes to make decisions regarding the best pedagogical practices. After evaluating a new training initiative and its impact on learners, ID can analyze the training to determine if the end results were met and whether as a result a tangible and effectual outcome was achieved. Learning should be designed for helping the learners more efficiently. Analysis of a given learning situation helps to establish realistic goals for a learning outcome and to be able to reach the established goals and outcomes. By evaluating the benefit—that the learning initiative enabled employees to learn a new skill, adapt to change, and proficiently improve

their performance—the ID will continue to save the teachers' time and energy. Targeted learning can also make a positive difference in terms of enhancing the learning outcome.

Instructional designs create meaningful training experiences that energize learners through the learning process. It has been one of the top priorities in an education set up to deliberate as to how learning impacts the learners. It remains so in a way that is reassuring and engaging to achieve the professional goals of the learners through skills development. An ID will help educational institutes to meet the strategic and year-end goals through the training opportunities that are designed and delivered in a productive way. An ID can provide a context and fun interaction that can help even the most technology adverse to feel comfortable.

Instructional design approaches, theories, models and ID practices are now changing their dimensions towards more humanistic than mechanistic (Reiser, 2001) by involving the human characteristic, (Wilson, 1995) revising the nature of the design team and incorporating educational philosophies and current trends in modern education (Kallio, 2008). Instructional designers and educators can also use advanced applications of information technology to deliver effective instructions in various contexts (Reiser, 2001) keeping into consideration the needs, motivation and critical thinking skills of the learners (Faryadi, 2007). Theories of ID need to extend the scope to invent instructional design techniques, procedures, tools as well as the technology of ID itself in other areas and fields to serve the needs of the learner.

Various researches referred to the new trends in the field of instructional design. Kristano, Mustaji and Mariono (2017) talked about development of blended learning

curriculum as a new approach for curriculum advancement in the field of instructional technology. Beatty (2014) took video games as a theoretical framework for instructional design and Mojtahedzadeh, et al (2015) developed and evaluated case-based e-CME activities based on ADDIE model. Zulkifi, et. al (2018) developed moral education modules (following the steps of ADDIE) to improve philosophic inquiry and critical thinking of secondary school students. Cheung (2016) conducted a study and developed curriculum to interpret chest radiographs for internal medicine residents. Durra and Ataizi (2016) carried out a study to design an online course for programming languages using ADDIE on distance learning platform.

2.7 ADDIE in the Teacher Education

Various researches have used instructional designs and ADDIE model in numerous capacities in the field of teacher education and professional development of teachers. Trust and Pektas (2018) conducted a study and developed an open online course for professional development of teachers guided by ADDIE. The study was based on the learning principles and achieved its objectives and professional learning goals according to post course survey data. Nagusa (2014) conducted a survey among 49 secondary school teachers of Tanzania to consider the application of ADDIE Model of Instruction and recommended on-going in-service teacher training for teachers to keep applying ADDIE principles throughout their professional life. A study conducted by Cheung (2016) illustrated the application of ADDIE to develop the curricula for educators to help them teach chest radiograph interpretation and found the curricula very useful. Usta and Guntepe (2017) did a study on pre- service teachers to examine e-book design process based on ADDIE and found the

62

problems and deficiencies in the design-phase of e-books, and the way out to eliminate those deficiencies.

Drljaca, Latinovic, Stankovic, and Cvetkovic (2017) provided an in-depth review of ADDIE in preparation of instructional material for traditional as well as electronic and online teaching. Another study conducted by Martin (2011) highlighted the process of instructional design in designing instructional modules for digital literacy course in community college setting. The study compared two instructional models and identified the tasks for teachers while designing instructions. A study conducted by Fathima (2013) stressed to improve teachers' instructional practices by using appropriately programmed instructional design in order to achieve curricular objectives through learner cantered teaching. Khalil and Elkhider (2016) provided a practical framework for the application of learning theories and models of instructional design in the classrooms and laboratory by the faculty members at higher education level along with explanation about the science of instructions and learning as a theoretical evidence for effective and efficient design and delivery of instructional material. The above mention researches reflect that ADDIE can be and has been applied effectively and efficiently in in numerous ways to achieve the intended objectives of improving the teaching-learning process.

2.8 Gagne Events of Instruction in Teacher Education

Gagne's Nine Events of Instruction have been widely used for skill development and training purposes in various fields. According to Khadjooi, Rostami and Ishaq (2011) Gagne's model is based on the mental events of information processing; that is why, it is an effective way to ensure the effectiveness of a systematic learning program. They

63

deigned a lesson plan based on Gagne's Nine Events of Instruction for a practical procedure of junior doctors to enhance their psychomotor skills. Ngussa (2014) explored the possibility of the application of Gagne's model in classroom instruction of high school students by secondary school teachers in Mousoma Tanzania and strongly recommended the application of events of instruction in the classroom teaching as it was found to be very helpful. Abdelmagid (2018), while revisited the guidelines of instructional practices and the quality of students learning, studied the concept of augmented reality into teaching and learning situation with reference to Gagne's framework of instruction and proposed an instructional model for teachers supported by Gagne framework and the augmented reality learning process. Islam and Salam (2019) applied Gagne's Nine Events of Instruction to evaluate the effectiveness of a teacher training program and concluded that such type of development training sessions need to be conducted on regular basis following systematic approach and sequence of instruction to fill the gap between actual and desired performance. According to Mancia, Filho, Miquelin, Ribeiro, Geus, and Souza (2017) effectiveness of the application of Gagne's model for learning management and training processes has been widely accepted that provides a conceptual basis for effective learning and assessment. They used Gagne's events of instruction to train electricians through a prototype game about maintenance of power live-lines and found it a very useful approach for training risky activities. Another interesting application of Gagne's Model was reflected through the study by Mie, Ramli and Alhirtani (2015) in which Gagne's approaches were used effectively to facilitate teachers in teaching Arabic to non-native speakers at the university level and found teaching activities more attractive, effective and student-centered. The study recommended to promote the application and utility of Gagne's nine

64

events at both, the school and university level by education ministry and educational organizations to facilitate the teachers as well as students and to make the teaching-learning process result-oriented.

2.9 Chapter Summary

Instruction is an efficient and appealing intentional arrangement of learning experiences and a pre-planned goal-directed teaching process to achieve intended learning outcomes (Romiszowksi, 1981). The term "design" is a process of problem identification and problem-solving in which systematic planning and designing of instruction is involved with a high level of precision, creativity and expertise for effective and efficient implementation of instructional plan to solve an instructional problem. An efficient design must consider all the factors responsible for the successful implementation of instructional plan. It is a systematic procedure of analysis of learning needs and goals; designing and developing a delivery system, instructional materials and activities—in order to meet the needs and requirements of the learners and ensure implementation and evaluation of the effectiveness of overall instructional process (Pennsylvania State University, nd). Instructional design is an emerging profession that focusses on establishing and maintaining efficient and effective human performance that is guided by a model of human performance; is carried out systematically; based on open systems theory, and oriented to finding and applying the most cost-effective solutions to the problems of human performance.

The philosophical and theoretical rationale for the instructional designs is based on making decisions, providing historical insight, forging common grounds with other

professions and providing a clear direction to the instructional design process. A theory is a systematic way of looking at things in a way so as to provide logical explanation for the things/events. There are two types of theories that are more related to instructional design studies; descriptive and prescriptive. Overtime many theories have influenced instructional design such as: learning theories, behavioral learning theories, cognitive learning theories, social learning theories, general system theories, instructional theories, general system theories and communication theories, media theories, condition-based theories, constructivist design theories and performance implementation theories.

History of ISD began with the contribution of Aristotle, Socrates and Plato for conceptualizing learning theories and instructional techniques such as questioning, argumentation, modeling, repeated practice and feedback. The early 1900 was the era of visual instruction movement, filmmaking and technological development and World War I. During that era Computing Tabulating Recording Corporation was established, behavioral school of thought emerged, the concept of educational objectives, individualized instructions, Social efficiency movement was introduced. Also, The Association for Educational Communications and Technology (AECT) was launched and Teaching machines, Computing-Tabulating-Recording Corporation (IBM) was established during that time.

1930s was the era of Great Depression and Progressive Movement that extended the philosophies of Rousseau, Pestalozzi and Froebel and John Dewey. 1940s was the era of Instructional Media Research and the development for military training needs during Second World War (1941-1945) in which psychologists and educators such as Gagne, Lesli

Briggs and others contributed to designing variety of instructional techniques; including teaching machines, training modules, instructional films and audio-visual technology. In 1950s Behaviorism flourished, B.F Skinner invented Programmed Instruction, Robert miller developed Task Analysis Procedures, while, Taxonomy of Educational Objectives was developed by Benjamin Bloom. During the same era, Development of IBM Teaching Machine Project was a major contribution in ISD history. 1960s and 70s was the era of rapid development and articulation of components of instructional system design. During that era Robert Mager's Writing Behavioral Objectives and Criterion-referenced Instructions(s), Testing, Instructional System and Its Mechanism by Robert Glaser, Nine Events of Instruction by Gagne, Instructional Design Movement by James Finn, Hypertext Invention by Ted Nelson, Intrinsic Programming Model by Crowder and the launch of CAI Elementary School Curriculum and Computer Curriculum Corporation (CCC), IBM 1500 computer, PLATO, TICCIT systems and Apple I Computer were the major developments in instructional system development. ISD became a specialized field of study and various Models of the instructional design developed including the Dick & Carey Model and by the end of the decade more than 40 models were estimated.

In 1990's constructivist approach was introduced, World Wide Web, Netscape navigation browser software, Hypertext, hypermedia and use of internet, computer-based training via CD-ROM was a breakthrough in the field of IT. 2000 was the era of the improvement of internet facility and its bandwidth that enabled the use of rich instructional media including videos, interactive simulations, gaming technology and advancement in online learning via Learning Management Systems (LMS), MOODLE, MOOCS, mobile,

smart phones and tablets followed by social media applications. Several different approaches of e-Learning have been experimented over time, while, the concept of blended-learning has emerged in the fields of education and industry to deliver effective training experiences.

A great number of instructional design models have been developed overtime for various educational settings; ranging from simple to complex in order to provide step-by-step guidance for developing instructions categorized as classroom oriented, product oriented, and system oriented based on the models such as: ADDIE, Algo-Heuristic (Landa, 1974), Instructional System Development (IPISD) Model (Branson, 1975), Gerlach and Ely Design Model (1980), Kirk and Gustafson Design Model (1986), Hannafin and Peck Design Model (1987), The Diamond Model (1989), The Spiral Model by Boehm (1986), Rapid prototyping model by Tripp & Barbara (1990), Bergman and Moore Model (1990), The de Hoog, de Jong and de Vries Model (1994), The Gentry (IPDM) Model (1994), The Bates Model (1995), The ASSURE Model by Heinrich, Molenda, Russell, & Smaldino, (1996), The Dorsey, Goodrum and Schwen Model (1997), (4C/ID) Model by Merrienboer (1997), The Nieveen CASCADE Model (1997), Seels and Glasgow ISD Model (1998), The Smith and Regan Model (1999), Reigeluth's Model (1999), Stepich, Lehman and Russell's PIE Model (2000), The Dick, Carey and Carey Model (2001), Empathic Instructional Design model by Siemens (2002), 3-Phase Design Model (3PD) bySims and Jones (2003), Kemp, Morrison, and Ross Model (2001), SREO Model (2005), and OTIL Model. There are numerous other existing models in the field of

instructional design as well and most of the models have adopted the general framework of ADDIE (McGriff, 2000).

ADDIE is a model which provides a paradigm that refers to the major processes that comprise the generic ISD: Analysis, Design, Development, Implementation, and Evaluation. Kallio (2008) indicated that ADDIE can be used in all forms of instruction with its specific attributes. The analysis-phase involves performance gap analysis, learner, content, and task analysis and to see as to how they influence the design of instruction. The design-phase addresses how instructional goals and objectives shape strategies. The development-phase addresses the tools and processes used to create instructional material. The implementation-phase addresses the execution of the instructional materials or program. While, the evaluation-phase" addresses both formative and summative assessment. Thus, ADDIE is a systematic process of generating performance-based episodes of creating intentional learning environments. The instructional Designers and education practitioners continue to innovate, develop and invent new approaches by using the categories of ID derived from ADDIE.

Various researches were conducted in the past in which ADDIE had been taken as a basic framework of instructional design such as designing an instructional system for online learning environments (Bajbouj, 2015), analyzing operational priorities of instructional designers (Ozdilk and Robeck, 2009), developing philosophical inquiry approach in moral education (Zulkifi, Razak and Mahmood, 2018), developing curriculum to teach Chest Radio-Graph Interpretation to internal medicine residents (Cheung, 2016), designing an online course on distance education platform for programming languages at

69

undergraduate level (Durra and Ataizi, 2016) and a continuous professional development for primary care physicians (Almomen, Kaufman, Alotaibi, Rowais, Albeik and Albattal, 2016). Instructional designs facilitate learning in a way that learners can demonstrate improved job performance and apply their newly acquired knowledge, skills and attitudes in a range of situations.

Various researches have introduced new trends in the field of instructional design as well as teacher education and in professional development of teachers such as: development of blended learning curriculum (Kristano, Mustaji & Mariono, 2017), designing of video games (Beatty, 2014) and evaluation of case-based e-CME activities (Mojtahedzadeh, et al, 2015), development of an open online course for professional development of teachers (Trust and Peckers, 2018), investigating of the application of ADDIE Model of Instruction by secondary school teachers (Nagusa, 2014), development of the curricula for medical educators (Cheung, 2016) and examination of e-book design process on pre-service teachers (Usta and Guntepe, 2017). Moreover, ADDIE has also been used in preparation of instructional material for traditional and non-traditional electronic and online teaching (Drljaca et. al, 2017), designing instructional modules for digital literacy course in community college setting (Martin, 2011), using appropriate programmed instructional design for effective teaching (Fathima, 2013), applying learning theories and models of instructional design in the classrooms and laboratory at higher education level (Khalil & Elkhider, 2016). These researches reflect that ADDIE can be effectively applied in numerous ways to achieve the intended objectives of learning skills and knowledge.

70

Gagne's Nine Events of Instruction have widely been used for the skill-development and training purposes in various fields such as: deigning a lesson plan for a practical procedure of junior doctors to enhance their psychomotor skills (Khadjooi, Rostami & Ishaq, 2011), investigating application of Gagne's model in the classroom instruction of the high school students by the secondary school teachers (Ngussa, 2014), application of the augmented reality into teaching and learning situation with reference to Gagne's framework of instruction (Abdelmagid, 2018), evaluating the effectiveness of a teacher training program (Islam and Salam, 2019), application of Gagne's model for learning management and training processes (Mancia, et. al, 2017), and facilitating teachers in teaching Arabic to non-native speakers at the university level with the help of Gagne's approaches (Mie, Ramli & Alhirtani, 2015).

CHAPTER 3

RESEARCH METHODOLOGY

This chapter presents a detailed overview of the research methodology applied to conduct the present study. It includes the research design and the gradual progression of the study in five phases according to ADDIE; that is, Analysis, Design, Development, Implementation and Evaluation.

3. 1 Research Design

The objectives of the study involved multiple perspectives that required data to be collected from the qualitative as well as quantitative sources. Therefore, the overall research approach of the present study was a mixed method in which a convergent research design was selected. Quantitative data was collected through close ended Likert scale questionnaires, VAK learning style inventory and evaluation forms. Pre-test and post-test were used to collect the data through experimentation. Qualitative data was collected through an open-ended questionnaire at the needs-assessment phase.

3.2 Population

All the prospective teachers of BS Education Program enrolled in the public-sector universities of Pakistan studying Teaching and Learning Strategies following the HEC approved syllabus for this course were taken as the population of this study.

3.3 Sample

A class of BS Education (7th semester) comprised of twenty (20) students (prospective teachers) registered in the course entitled Teaching-learning Strategies in the Department of Education, at International Islamic University Islamabad were taken as the sample of the study by using purposive sampling technique to tryout the interactive courseware/modules.

3.4 Instruments

Following instruments were used for data collection in the study.

- Needs-analysis questionnaire (Appendix-C)

- VAK Learning style inventory (Appendix-D)

- Pre-test (Appendix-E)

- Post-test (Appendix-F)

- Course evaluation form (Appendix-G)

Needs-analysis Likert scale and open-ended questionnaire, VAK learning style inventory and pre-test were used in the first phase of the study, the needs-analysis-phase. Post-test and course evaluation forms were used in the evaluation-phase of instructional design process. The details of each instrument are also provided in the document of the needs-analysis and evaluation.

3.4.1 Needs-analysis Questionnaire

A Needs-analysis questionnaire was administered to collect data from the prospective teachers based on the following parameters:

- Previous experience of learning

- Students' attitude towards the learning environment

- Format of instruction/current practices in use of instructional technologies in classroom

- the available resources for the students

- Preferences and motivation of the students

- The expectations from the course

- Recommendations

Section A was about the demographic information to develop an instructional profile of the students, while, section B was about students' previous learning experience to analyze the existing teaching methodologies that were implemented by the teachers in their classrooms which consisted on 3-point scale: (1) none of the teachers, (2) some of teachers, (3) most of the teachers. Section C was about students' previous experience of learning in terms of course contents and curriculum for the course analysis with 3-point scale: (1) none of the courses (2) some of the courses (3) most of the courses. Section D had items related to students' attitude towards learning environment which was consisted of five-point scale: (1) Strongly agree (2)　Agree (3) Neutral (4) Disagree (5) Strongly disagree.

Section E was about the use of instructional technologies in the classroom to get information about the existing practises of the use of instructional technologies by the students with five-point scale: (1) never rarely (2) less than half the time (3) about half the time (4) more than half the time (5) almost always. Section F had items related to the

available resources in the university with 3-point scale: (1) not accessible (2) restricted access (3) free access. Section G was about the motivation and attitude of students towards learning environment with five-point scale: (1) strongly agree (2) agree (3) neutral (4) disagree (5) strongly disagree. Section H had items related to the recommendations of the students for improvement in teaching and learning situation with four-point scale: (a) no importance at all (2) little importance (3) quite great importance (4) very great importance. The reliability value of Needs assessment questionnaire was .837.

Section I had seven (7) open ended questions to get to know about any other requirements of prospective teachers' skills they want to develop/learn, to identify problems if any and constraints in the teaching and learning process. It was also meant to estimate the expectations from the course as well as preferred learning environment and the teaching methodology/format of instruction or any other recommendation to improve teaching and learning process as a prospective teacher.

3.4.2 VAK Learning Style Self-Assessment Questionnaire

Visual, Auditory, Kinesthetic (VAK) is a 30-item inventory used to identify learning styles of target group in term of visual, auditory and kinesthetic style of learning— which was used for the self-assessment in this study as well. The main objective to administer this questionnaire was to utilize obtained data and to develop courses/modules and learning environment according to the learning needs of the target group. Identification of learning styles helped in designing module activities, exercises, variety of visuals/illustrations, and examples.

3.4.3 Pre-test

75

A pre-test consisting of fifty (50) multiple choice questions was administered to check the students' current level of knowledge about the course. The results were utilized as pre-requisite information for the module development.

Table 3.1

Table of Specification for Pre-test

Domains	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
Knowledge	2	2	4	2	2	2	2	1
Comprehension	2	2	4	2	2	2	2	1
Application	2	1	4	2	2	2	2	1
Total	6	5	12	6	6	6	6	3=50

3.4.4 Post-test

A post-test was also taken at the end of the semester for the final evaluation of the course. The post-test comprised of fifty (50) multiple choice questions covering all the aspects of course outline.

Table 3.2

Table of specification for post-test

Domains	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
Knowledge	1	1	1	1	1	1	2	2
Comprehension	1	1	3	3	3	3	3	3
Application	1	1	3	3	3	3	3	3
Total	3	3	7	7	7	7	8	8=50

3.4.5 The Course Evaluation Form

At the end of the course, a course evaluation form was administered to get the feedback from the students about the following aspects of the course:

- Teaching methodology

- Course design

- Learning environment

- Use of instructional technology in the classroom

- Motivation and attitude

- Feasibility/Usability of interactive courseware/module

  - Course design

  - Quality of the contents and coverage

  - Overall experiences

The section A was about participants experience with teaching methodology during the course which was consisted of five-point scale: (1) Strongly agree (2) Agree (3) Neutral (4) Disagree (5) Strongly disagree. Section B was about overall course design with five-point scale: (1) Strongly agree (2) Agree (3) Neutral (4) Disagree (5) Strongly disagree. Section C was about students' attitude towards learning environment having five-point scale: (1) Strongly agree (2) Agree (3) Neutral (4) Disagree (5) Strongly disagree. Section D was about use of instructional technologies in classroom during the course which was consisted of five-point scale: (1) Never/Rarely (2) Less than half the time (3) about half the time (4) more than half the time (5) almost always. Section E was about motivation and attitude of participant during the course with five-point scale: (1) Strongly agree (2) Agree

77

(3) Neutral (4) Disagree (5) Strongly disagree. Section F had items related to the recommendations of the students for improvement in teaching and learning situation with four-point scale: (a) no importance at all (2) little importance (3) quite great importance (4) very great importance. The next sections was about feasibility/usability of interactive courseware/modules, course design, quality of content and coverage, and overall experience with course, which was consisted of five point rating scale: 1, 2, 3, 4, 5. The reliability value of Course Evaluation Form was .936.

3.5 Validity

The research instruments were reviewed by the experts to ensure the validity of the instrument. The review of the experts provided very important recommendations for overall improvement of the research instruments. In light of the recommendations of experts following amendment were incorporated in research instruments before the data collection: Proofreading, eliminating grammatical errors, formatting, developing more comprehensive statements according to the level of the students, alignment of research instruments keeping in view the objectives of the study and revising indicators/parameters of research instruments.

3.6 Pilot Testing

Pilot testing was done on the class of BS Education 7th semester comprised of 20 students registered in the course of teaching learning strategies and reflective practices of the Department of Education at International Islamic University, Islamabad to ensure the validity of research instruments—after which the necessary amendments were made. Results of the pilot testing of research instrument indicated following improvements to be

incorporated: developing simple and understandable statements, eliminating grammatical errors, overlapping of concepts in one statement etc.

3.7 Data Collection and Analysis

The study was conducted in five phases i.e. analysis, design, development, implementation and evaluation. Data collection in the needs-analysis-phase was carried out through Likert scale, open ended questionnaire, VAK learning style inventory and pre-test. Post-test and course evaluation forms were administered in the evaluation-phase of the study. Quantitative data was analyzed by calculating the percentages of close ended questionnaires. While t-test was applied to compare pre-test and post-test results after having conducted the experiment. The qualitative data gathered through the needs-analysis involving the open-ended questionnaire was analyzed through a thematic analysis.

3.8 Procedure of the Study

The framework for this study was provided by ADDIE—that is the most basic model of instructional system design, while, the study was conducted in five successive phases (i.e. analysis, design, development, implementation and evaluation) in a way that the output of one phase became the input of next phase—that is why the format of the thesis was designed keeping in view the procedures and stages of the ADDIE. The first phase was the analysis-phase in which needs-analysis of the target population was done. Pre-test and needs-analysis questionnaire were administered to determine the needs and requirements of the target group. The second phase was the design-phase in which the instructional plan was designed, incorporating Gagne's Nine Events of Instruction, including course objectives, course outline, instructional procedures, activities, and

79

evaluation. The third phase was the development-phase in which the instructional material in a form of instructional modules was developed as planned in the design-phase. The fourth phase was the implementation-phase in which the instructional modules were implemented on the target group through blended approach. In the last phase, that is, the evaluation-phase of instructional system design (ISD), the whole process of instructional design was evaluated and the effectiveness of ISD examined through post-test and evaluation form. Each phase was documented in detail including the necessary components. The overview of each document is given below, while, the detailed documents are given in data analysis section, that is the next section (chapter 4).

3.8.1 Analysis

The analysis of the study that involved various stages (as explained in detail the chapter on analysis) was aimed at detecting the user expectations, problems, and dysfunctions in the learning process and as to how instructional design can provide the best solution of those problems. A detailed needs-analysis document was prepared to explain the procedure, background, purpose, objectives, target population, methodology, needs-assessment instruments, data collection and the analysis. Following were the specifications of analysis document that are discussed in detail in analysis document (chapter 4):

3.8.1.1 Learners' analysis

A learners' analysis involved analyzing the population targeted keeping in view learners' previous knowledge, learners' previous learning experiences; that included: teaching methodology analysis & course analysis, attitude towards learning environment,

80

motivation/expectations and learning styles to determine the appropriate instructional strategies and delivery environment.

3.8.1.2 Environmental analysis

Analyzing environment means gathering information about the available and required resources; so that the instructional decision making may be done accordingly. Instructional decision making based on environmental analysis involved: learning strategies, required resources and mode of instruction.

3.8.1.3 The Content Analysis

The content analysis provides a brief overview of the course specification and the overall planning of the course. The content analysis intended to indicate the course objectives, type of tasks and levels of work difficulty, timings, selection of the course, major themes and areas, pre-requisite knowledge and skills, task and the topic analysis. The procedure applied for the content analysis for this study was: identification of overall course goals and outcomes, formulation of unit wise course outline, identification of prerequisite knowledge areas and the development of modular hierarchy of the course outline.

3.8.1.4 Instructional Analysis

Instructional analysis is a process to identify types and levels of learning in order to build a learning hierarchy of knowledge and skills and to identify the prerequisite

knowledge and skills. This information was further utilized to design module-wise and unit-wise course objectives in this study.

3.8.1.5 Instructional Media Analysis

The instructional media profile is a well-defined set of instructional proceedings to determine as to what type of media and other resources are to be used in the classrooms so as to arrange those accordingly. The main objective is to incorporate the right instructional material for each student.

3.8.2 Design

The design-phase intended to develop a plan of instruction keeping into consideration the results derived from the needs-analysis to fulfill the instructional needs of the students and teacher. A detailed design document was prepared to explain the whole process of development, implementation and evaluation of instructional process. Gagne's Nine Events of Instruction were adopted in planning contents and delivery methods of instructional modules. At the end of the design-phase, a plan of factual specifications was prepared for closing the performance gap due to the lack of knowledge and skills. Design document established the line of sight for maintaining an alignment of learners' needs, designing goals and objectives, course development, implementation of strategies and assessment throughout the ADDIE process.

Following were the specifications of design document that have been discussed in detail in design document (chapter 4):

- **Purpose of the course**: overall intended aim/goal of the course

82

- **Audience description:** detailed description about the target group of students

- **Course objectives:** overall intended outcomes of the course

- **Learning assessment:** description about assessment strategies used in the course

- **Instructional strategies:** description about instructional strategies used in the course keeping in view Gagne's nine events of instruction

- **Time schedule**: description about time schedule of the course delivery

- **Course structure description**: involves detailed description about course structure in terms of number of units, topics and sub-topics

- **Development tools:** description about software/tools used to develop a courseware

- **Course planner:** a detailed course planner including units, contents/topics & subtopics, unit objectives and course activities

- **Delivery formats and Authoring tools:** includes detailed description about course delivery format, course delivery requirements and course development tools/software

- **Technical and Instructional Media Requirement:** reflects some of the technical and instructional media requirements of the course in terms of hardware, software and other organizational requirements

- **Flowchart of Instructional Courseware:** the flowchart reflected the overall organizational design of the instructional module/courseware and the division of the course segments into modules and units

- **Storyboard:** Storyboard is a document that describes all the components of final interactive lessons to review the contents as well as the selection of instructional

83

technique. It also determines the sequence of lessons specifying which element would appear in each of the screen

- **Implementation plan:** it involves a detailed plan of course implementation process keeping in view target audience and instructional requirements.

3.8.3 Development

Development-phase aimed to develop instructional modules as planned in the previous phase (i.e. design-phase) by incorporating Gagne's Nine Events of Instruction as well as interactive exercises, instructions, text, graphics, audios and videos to attract and involve all senses of learners. A development document was also prepared to present the whole process of generating and validating the learning resources. At the end of the development-phase, a comprehensive list of learning resources was developed as identified in the previous phases. Specifications of the development-phase were as follows: (for details see development document chapter 4)

- Generate Content in a form of modules according to Gagne's framework
- Development of courseware
- Supporting Media
- User manuals
- Pilot Test

3.8.3.1 Module Development

In this study, contents have been developed in the form of modules while Gagne's Nine Events of Instruction. Content specifications are as follows:

84

- Course description

- Course objectives

- Course outline

- Module wise breakup

- Module objectives

- Unit wise breakup

- Unit objectives

- Beginning activities/motivational tasks/gaining attention

    o Introductory activities/warm-up

    o Clarify the objectives

    o Confirmation of the pre-requisites

- Middle activities

    o Demonstrations, role-play, simulations...

    o Guided practice

    o Independent practice

    o Feedback

    o Assessment

- Ending activities

    o Debriefs, Transitions, Revision, Summaries

- Instructional strategies

- Lesson plans

Table 3.3

Instructional Plan/Module Development according to Gagne's framework

Events	Activities
Gaining attention	Introduction of lesson starting with a case study, story, video, questions, diagram, example to provide a background information about topic
Informing Objectives	Informing students about the objectives of the session
Recall previous knowledge	Questioning about previous experiences and pre-requisite concepts
Presenting stimulus	Presenting lesson content by using various teaching methods and strategies
Providing guidance	Demonstrating and showing how to do or create something
Eliciting performance	Students' demonstrations and presentations Practical activities &exercises
Providing feedback	Immediate feedback by teacher
Assessing performance	Questions, quizzes and variety of assessment activities throughout the instruction
Enhancing retention and transfer	Highlighting important points Giving Reference material

3.8.3.2 Development of Courseware

The courseware development is a process that involves developing media and interactive components as well as producing various formats of a CD for web delivery.

3.8.3.3 Supporting Media

The courseware also included the supporting material in form of handouts, lecture notes, presentations, illustrative material i.e. pictures, graphs, tables, training material, self-study guides, web guides, worksheets, reference books and user manuals for the purpose of fulfilling the requirements of the course on Teaching-Learning Strategies and Reflective Practices which this study was based upon.

3.8.4 Implementation

The implementation-phase intended to create a learning environment to teach the course designed to the students of BS Education at International Islamic University, Islamabad. The prototype instructional modules were tested through an experiment. The duration was of four months (i.e. one complete semester). Following were the objectives of the experiment: To check the effectiveness of teaching through instructional modules; to identify the deficiencies of the instructional design, and to modify the instructional design accordingly to close the performance gap effectively. In this phase certain procedures were adopted to ensure the effective functionality of all the systems and maintenance of institutional support for the successful implementation of the course. Therefore, a checklist was developed to make sure the availability of all resources and functionality of all the available equipment to manage, administer, facilitate and deliver the instruction. Following were the specifications of the implementation document:

3.8.4.1 Prepare the teacher

In order to provide effective instructions and ensure successful course implementation it is essential to conduct training sessions for the course instructors/teachers as well as they are the ones responsible for the successful implementation of the courseware.

3.8.4.2 Prepare the students

The preparation of the students before the initializing of any course is necessary to get the desirable outcomes. This step involved the procedure applied to prepare students for the course.

3.8.4.3 Learning styles

Students may have variety of learning styles in one classroom in terms of visual, auditory and kinesthetic abilities. In this step, students learning styles were inquired to check the students' preferred learning styles as determined in the needs-analysis-phase so that the course was designed accordingly.

3.8.4.3 Student Pre-requisite Knowledge and Skills

This stage is about checking the students existing knowledge about the concepts in order to get help in the module contents development through pre-test.

3.8.4.4 Recruitment Strategy

The recruitment strategy for this course was adopted according to the university's rules of course registration. Therefore, all the students who joined the 7th Semester registered the course.

3.8.4.5 Schedule

The schedule of the classes was designed keeping in view the instructional plan to avoid any mismanagement during the implementation-phase

3.8.4.6 Pre-course Communication

Before the formal beginning of the course, a few pre-course communication sessions were arranged in which an overview of course and course objectives were discussed with the students.

3.8.4.7 Integrate and Test Courseware

First, the courseware had to be tested in the actual classroom environment in order to ensure the proper functionality of all its components before its final launch for the students.

3.8.4.8. Course Orientation Session

In the first session of the course an orientation session was arranged to share with the students the course goals, objectives, course planner, course assessment and evaluation as well as the details about the overall course activities throughout the semester.

89

3.8.4.9 Implementing Instruction

The course was implemented according to the instructional plan and modules designed according to Gagne's Nine Events of Instruction.

3.8.4.10 Feedback

Feedback is another important aspect adopted by instructor during the course implementation to ensure getting the feedback at various stages, that included: during the activities and exercise in the class, at the end of each unit and written feedback on the assignments.

3.8.4.11 Conclusion

At the end of each unit a section was designed i.e. Summary and Transition to highlight the important points of the lecture and to do the revision of the topics.

3.8.4.12 Formative and Summative Assessment

Each unit contained activities and unit exercises to engage the learners to evaluate the learning outcomes on a regular basis as well as at the end of the course.

3.8.4.13 Course Evaluation

At the end of the course, a course evaluation performa was administered to get the feedback from the students about the teaching methodology, course design, learning

environment, use of instructional technology in the classroom, motivation and attitude, and feasibility/usability of interactive courseware/module. The course was implemented according to the instructional plan and modules designed according to Gagne's Nine Events of Instruction. The course outline, courseware and related material were distributed among the participants.

- Feedback
- Conclusion
- Formative assessments
- Summative assessment
- Course evaluation

3.8.5 Evaluation

The evaluation-phase aimed to evaluate the effectiveness of the whole ISD process including the instructional courseware/modules. In the first phase of the evaluation, the criteria of the evaluation of the courseware/modules were determined in order to measure as to what extent the approach had been successfully implemented and that whether it had been successful in achieving its objectives. A post-test was conducted to evaluate the understanding of the learners, while, the course evaluation form was used to evaluate the overall course design, its methodology, usability of courseware and learning environment. A detailed evaluation document was prepared to document the methodology as well as the data collection procedure and results. Following were the specifications of the evaluation document:

- Teaching methodology through the courseware/modules

- Overall Course design

- Students learning

- Motivation and attitude

- Learning environment

- Recommendations

- Feasibility/usability of interactive Courseware/Module

    o Course design

    o Quality of content and coverage

    o Overall experiences

In this section an overview of all the ADDIE document specifications was given. The detailed documents have been provided in the next chapter on analysis.

Table 3.4

Time-frame

Phases	Time-frame
Pilot-test Phase (Six Months)	
Need Analysis	04 Weeks
• Needs analysis Questionnaire	
• Pre-test	
• VAk learning style Questionnaire	
• Data Analysis & Gap Identification	
• Analysis Document	
Design	04 weeks
• Detailed course planner	
• Flow chart	
• Story board	
• Design Document	
Development	03 months
• Module Development	

• Courseware Development	
• Development Document	
Implementation	01 Week
• Implementation plan	
• courseware pilot-test of two units	
• Implementation Document	
Evaluation	03 Week
• Course evaluation form	
• Evaluation Document	
Final-phase (Six Months)	
Needs analysis	Continuous revisions
• Needs analysis Questionnaire	
• Pre-test	
• VAK learning style questionnaire	
• Data Analysis & Gap Identification	
• Analysis Document	
Design	
• Detailed course planner	
• Flow chart	
• Story board	
• Design Document	
Development	
• Module Development	
• Courseware Development	
• Development Document	
Implementation	18 weeks (whole Semester)
• Implementation plan	
• All eight modules/courseware were taught	
• Implementation Document	
Evaluation	3 Weeks
• Course evaluation form	
• Evaluation Document	

Table 3.2 reflects the approximate time-frame of the completion of each phases of

the ADDIE with detailed specification performed in each phase. The study was conducted

in two major phases: pilot-testing phase and final-phase. In pilot-testing phase all stages of

ADDIE were performed including needs analysis, design, development, implementation

and evaluation. The purpose of pilot testing phase was to develop detailed needs analysis,

93

design, development, implementation and evaluation documents so that the experiment of developed courseware/modules were performed for next whole semester. In final phase, again all stages of ADDIE were performed with continuous revisions identified in the pilot-testing phase. The time taken for each phase is also identified.

3.9 Ethical Consideration

In order to conduct this study research ethics were carefully kept in consideration. Students were well informed about the experiment and voluntarily participated in this research. Researcher is highly indebted to the Department of Education, IIUI authorities, faculty and administration to allow researcher to conduct the experiment in the department. The data collected for this research was kept confidential and used only for research purpose.

CHAPTER 4

DATA ANALYSIS

This is the main chapter of the thesis that has been further divided into five sections. It includes the detailed documents of each phase according to ADDIE. The section-wise documents included here include the documents on analysis, design, development, implementation and evaluation document as per the design or model provided by ADDIE. An overview of each of these documents has already been provided in the previous chapter.

4.1 ANALYSIS DOCUMENT

4.1.1 Background

The Department of Education of the International Islamic University in Islamabad is a well reputed department that is recognized for its contributions particularly in the field of teacher education. Currently, the department offers many teacher education degree programs with the basic objective of producing professional teachers who could contribute in the field of education by sharing their experiences and building academic acquaintance with the education community. Maintaining the quality of teaching and learning has a paramount importance for the Department of Education to meet the teaching standards and demands of the nation. The trend in instructional methods and strategies are moving towards integrating technology and thereby exploring new dimensions of course development and instruction using learning and instructional theory to ensure the quality of the instruction as well as improving and upgrading the teacher education programs. Therefore, it was proposed that a needs-assessment need be conducted to understand the performance gap and identify the factors, problems, and needs of the prospective teachers

in experiencing technological resources in a blended learning environment in the classrooms.

4.1.2 Purpose of the Needs-analysis

Needs-analysis is a procedure to conduct a situation analysis to identify the performance gap, factors, problems, and needs of the prospective teachers in experiencing technological resources in the classrooms so that appropriate methods, strategies, means and approaches may be rationally identified and selected to train the prospective teachers with the knowledge and technical skills related to teaching and learning strategies according to the needs and requirements of the learners and the market.

4.1.3 Objectives of the Needs-analysis

Following were the specific objectives of the needs-analysis:

- Learners' analysis—that included the demographics, previous knowledge, motivation, attitude towards learning environment, expectations and previous learning experiences and learning styles—to design the instruction according to the audience's specific needs.
- Environmental analysis—which was meant to evaluate the environment as well as to gather the information about available and required resources in which teaching-learning process would take place—so that the instructional decision-making may can be done accordingly.

- Instructional media analysis—that was carried out to determine as to what type of media would be used in the classrooms and what would be the available resources keeping in view the needs and requirements of the learners.

- Content analysis—that aimed at analyzing the existing course contents for the necessary revisions and improvement in order to determine the course objectives, the kind of tasks and levels of work difficulty, timings, selection of course, major themes and areas, pre-requisite knowledge and skills, task and topic analysis.

- Instructional analysis—which was to identify the types and levels of learning in order to build a learning hierarchy of knowledge and skills and to identify the prerequisite knowledge and skills.

4.1.4 Methodology

4.1.4.1 Target Population

A group of twenty (20) students of BS Education (prospective teachers) studying the course of Teaching-learning Strategies in the Department of Education, International Islamic University, Islamabad were taken as sample of the study by using purposive sampling technique.

4.1.4.2 Instruments

Following instruments were used to collect data from the students to conduct the needs-analysis:

- Needs-analysis questionnaire
- Learning style inventory

97

- Pre-test

4.1.4.2.1 Needs-analysis Questionnaire

A Needs-analysis questionnaire was administered to collect data from the prospective teachers based on the following parameters:

- Demographics

- Previous experience of learning in terms of teaching methodology and course analysis

- Students' attitude towards the learning environment

- Format of instruction/current practices in use of instructional technologies in classroom

- the available resources for the students

- Preferences and motivation of the students

- The expectations from the course

- Recommendations

Section A was about the demographic information to develop an instructional profile of the students, while, section B was about students' previous learning experience to analyze the existing teaching methodologies that were implemented by the teachers in their classrooms which consisted on 3-point scale: (1) none of the teachers, (2) some of teachers, (3) most of the teachers. Section C was about students' previous experience of learning in terms of course contents and curriculum for the course analysis with 3-point scale: (1) none of the courses (2) some of the courses (3) most of the courses. Section D

98

had items related to students' attitude towards learning environment which was consisted of five-point scale: (1) Strongly agree (2)   Agree (3) Neutral (4) Disagree (5) Strongly disagree.

Section E was about the use of instructional technologies in the classroom to get information about the existing practises of the use of instructional technologies by the students with five-point scale: (1) never rarely (2) less than half the time (3) about half the time (4) more than half the time (5) almost always. Section F had items related to the available resources in the university with 3-point scale: (1) not accessible (2) restricted access (3) free access. Section G was about the motivation and attitude of students towards learning environment with five-point scale: (1) strongly agree (2) agree (3) neutral (4) disagree (5) strongly disagree. Section H had items related to the recommendations of the students for improvement in teaching and learning situation with four-point scale: (a) no importance at all (2) little importance (3) quite great importance (4) very great importance.

Section I had seven (7) open ended questions to get to know about any other requirements of prospective teachers' skills they want to develop/learn, to identify problems if any and constraints in the teaching and learning process. It was also meant to estimate the expectations from the course as well as preferred learning environment and the teaching methodology/format of instruction or any other recommendation to improve teaching and learning process as a prospective teacher.

4.1.4.2.2 VAK Learning Style Self-Assessment Questionnaire

Visual, Auditory, Kinesthetic (VAK) is a 30-item inventory used to identify learning styles of target group in term of visual, auditory and kinesthetic style of learning—which was used for the self-assessment in this study as well. The main objective to administer this questionnaire was to utilize obtained data and to develop courses/modules and learning environment according to the learning needs of the target group.

4.1.4.2.3 Pre-test

A pre-test consisting of fifty (50) multiple choice questions was also administered to check the students' current level of knowledge about the course. The results were utilized a as pre-requisite information for the module development.

4.1.5 Needs-analysis Plan

A needs-analysis plan (which was divided in five major components) was developed for the successful execution. The components included:

1. Learners' analysis
2. Environmental analysis
3. Instructional media analysis
4. Content analysis
5. Instructional analysis

The data for learners' analysis, environment analysis and instructional media analysis was collected through needs-analysis questionnaire.

4.1.5.1 Learners' Analysis

It is imperative to get to know the target population/learners; their needs, level; what they already know and aspirations; what they want to learn because only then can a learning instruction be designed. That is why, a learners' analysis was done to plan the instructions keeping in view learners' existing level and the requirements. It involved analyzing the population targeted as well as their learning environment to determine the appropriate instructional strategies and delivery environment. A learner profile was developed based on the data collected about demographic information and skills and knowledge of the subject matter. Planning a learner's profile is also important as it describes the ways a student learns the best. In this study also, the learners' profiles were planned to be conceived in the light of the following parameters:

- Group identification

- Demographics

- Previous knowledge

- Previous Learning Experiences; that included:

    o Teaching methodology analysis

    o Course analysis

- Attitude towards learning environment

- Motivation/Expectations

- Learning styles

4.1.5.1.1   Group Identification

A group of twenty (20) students of BS Education (7th Semester) were selected as the sample of this study. The course entitled Teaching-Learning Strategies was also intended to be designed as a part of this study in the form of a module for a group of 20 students who were going to take the course of Teaching and Learning Strategies in their regular semester i.e. the 7th Semester.

4.1.5.1.2   Analysis of Needs Analysis Questionnaire

4.1.5.1.2.1 Demographics

The details about the general characteristics of the students were derived from the demographic information section of the questionnaire. This research was conducted in the Female Campus of the International Islamic University, Islamabad; hence, all students in the classroom were the female. The CGPA of the previous semesters of the students was also enquired.

4.1.5.1.2.2 Previous Learning Experience

Analyzing students' previous experience is very much important to find out the gaps in the knowledge as well as the needs of the students. The previous experience was measured from two aspects: the teaching methodology analysis and the course analysis which will follow.

4.1.5.1.2.2.1 Teaching Methodology Analysis

The teaching methodology analysis deals with the students' previous experience of learning that considers various teaching methodologies throughout the previous semesters.

While taking into account the experiences the students had had with all the teachers in their previous semesters—particularly, with respect to the teaching methodologies and course delivery—they responded to the queries. A questionnaire was also designed keeping in view the Gagne's Nine Events of Instruction that provided the baseline of the module development.

Table 4.1

Teaching Methodology Analysis

Section A: Previous experience of learning (teaching methodology analysis)		None of the teachers	Some of the teachers	Most of the teachers
1.	Before beginning the lecture, teacher tries to capture attention by using various techniques.	5.0%	80%	15%
2.	Effectively introduces the topic	5.0%	60%	35%
3.	Outlines the objectives (Introduces the aims and objectives of every session/topic)	10%	35%	55%
4.	Connects the previous knowledge of the learners with new information to help them understand new concepts	5.0%	60%	35%
5.	Delivers the lectures in an organized and coherent way	0%	65%	35%
6.	Contextualizes the contents (connects the contents to the real-life situation)	0%	65%	35%

Table 4.1 shows the teaching methodology analysis in which 80% and 60% respondents respectively reported that some of the teachers tried to capture the students' attention by using various techniques before beginning the lecture and effectively

103

introduced the topic. While, 55% reported that most of the teachers introduced the aims

and objectives of every session/topic. While, 60% and 65% respectively responded that

some of the teachers connected the previous knowledge of the learners with new

information to help them understand the new concepts and that they delivered the lectures

in an organized and coherent way.

Table 4.2

Teaching Techniques/Methodologies

Exploits the following techniques/methodologies	None of the teachers	Some of the teachers	Most of the teachers
a. Lecture	0.0%	30%	70%
b. Discussion	0.0%	60.0%	40%
c. Demonstration	20%	75%	5.0%
d. Problems solving	40%	60%	0.0%
e. Project method	10%	85%	5.0%
f. Simulation and games	85%	15%	0.0%
g. Story telling	60%	35%	5.0%
h. Role play	40%	60%	0.0%
i. Computer assisted instruction	70%	30%	0.0%
j. Group work and collaborative learning activities	0.0%	55%	45%

In this section of the teaching methodology analysis opinions about various types

of teaching techniques/methodologies as used by the teachers in the class was also taken

from the learners. Table 4 shows that 70% respondents reported that most of the teachers

used lecture method, while, 60.0% followed by 75%, 60%, 85% and 60% reported that

some of the teachers used discussion, demonstration, problem-solving, project and role

play respectively. While, 85% and 60% reported that none of the teachers used simulation

and games and storytelling method respectively. While, 70% respondents reported that

none of the teachers used computer assisted instruction. While, 55% responded that some

of the teachers, while, 45% said that most of the teachers used group work and collaborative

learning activities.

Table 4.3

Teaching Methodology Analysis

Teaching Methodology		None of the teachers	Some of the teachers	Most of the teachers
8.	The teacher provides clear guidelines to do the assignments.	10%	45%	45%
9.	Provides an opportunity of drill and practice in the class for better conceptual clarity	10%	75%	15%
10.	Provides a timely feedback	5%	80%	15%
11.	Conducts quizzes and exercises on regular basis to access the learning outcome	5%	75%	20%
12.	Provides reference material and other supporting tools to enhance the learning	10%	70%	20%
13.	Concludes every lecture by revising important Points	30%	65%	5%

105

14.	Uses visual material and illustrations	20%	80%	0.0%
15.	Gives examples to explain the topic	0.0%	20%	80%
16.	Makes the class interactive by engaging the learners	10%	55%	35%
17.	Gives individualized instructions as per an individual's style and pace of learning	60%	40%	0.0%
18.	Uses blended learning approach (i.e. computer based as well as face-to-face) to make the learning effective	90%	10%	0.0%

Table 4.3 presents teaching methodology analysis; in which cumulatively 90% respondents reported that the teachers provided clear guidelines to do the assignments. 75% followed by 80%, 75%, 70%,80%, 55% and 65% respectively responded that some of the teachers provided an opportunity of drill and practice in the class, provided a timely feedback, conducted quizzes and exercises on regular basis to access the learning outcome, provided reference material and other supporting tools, used the visual material and illustrations, made the class interactive by engaging learners and concluded every lecture by revising important points. While, 80% reported that most of the teachers gave examples to explain the topic. While, 60% and 90% respectively reported that none of the teachers neither gave individualized instructions to the students nor used blended learning approach.

4.1.5.1.2.2.2 Course Analysis

This section was meant to register students' previous experience of the courses they had had in their degree program. The results in this section depicted the students' responses regarding the courses they took in the previous semesters.

Table 4.4

Course Analysis

Section B: Previous experience of learning (Course analysis)	None of the courses	Some of the courses	Most of the courses
19 The contents were easy and understandable.	0.0%	35%	65%
20 Every new concept was initiated with an introduction to grab the learners' attention.	0.0%	65%	35%
21 The material met its objectives.	5%	45%	50%
22 The contents had had practical relevance.	5%	80%	15%
23 Each component connected previous knowledge to help understand the concepts	0.0%	55%	45%
24 The courses were organized.	0.0%	35%	65%
25 The courses included the guidelines for different tasks and activities.	0.0%	65%	35%
26 The courses provided with an opportunity of drill and practice.	15%	65%	20%
27 The courses provided feedback on various tasks.	0.0%	85%	15%
28 The courses had had plenty of quizzes and exercises.	10%	65%	25%
29 The courses recommended reference material and supporting tools.	15%	50%	35%
30 The courses were supported by a variety of visuals and illustrations.	45%	50%	5%

Section B: Previous experience of learning (Course analysis)		None of the courses	Some of the courses	Most of the courses
31	The courses were supported by a variety of examples.	5%	55%	40%
32	The courses were interactive to engage the learners.	5%	75%	20%
33	The courses had had the provision for individualized instructions.	55%	35%	10%
34	The courses involved blended learning approach (i.e. computer based as well as face-to-face) to make the learning interesting.	60%	30%	10%

Table 4.4 reflected the results about students' previous experience of learning regarding courses. The results showed that 65% followed by 50% and 65% respondents reported that most of the courses had easy and understandable course contents, the course material met its objectives and the courses were well organized respectively. While, 65% followed by 80%, 55%, 65% and 65% respectively reported that in some of the courses the concept was initiated with an introduction to grab the learners' attention, had had content with practical relevance, each component connected previous knowledge of the learners to help them understand the concepts, the guidelines for different tasks and activities were included with an opportunity of drill and practice. That results showed that 85% followed by 65%, 50%, 55% and 75% respondents respectively reported that some of the courses provided feedback on various tasks, had had plenty of quizzes and exercises, recommended reference material and supporting tools, supported by variety of visuals and illustrations, examples and interactive to engage learners. While, 55% and 60% responded respectively that none of the courses had had the provision for individualized instructions and blended

learning approach (i.e. computer based as well as face-to-face) to make the learning process interesting.

4.1.5.1.2.1 Attitude towards Learning Environment

This section was introduced to understand the students' attitude towards the learning environment in which students' responses (based on their previous experiences) with reference to learning environment were analyzed.

Table 4.5

Students Attitude towards the Learning Environment

Section C: Students' Attitude towards Learning Environment		Agree	Neutral	Disagree
35	Do you think that the friendly environment in the class helps you learn better?	100%	0.0%	0.0%
36	It is better for the teacher to be little strict, at times.	80%	20%	0.0%
37	Making class more integrative helps learn better.	85%	15%	0.0%
38	Informal setting of the class is good for the learning.	60%	25%	15%
39	Do you think class should have a traditional look—where teacher is standing on a higher podium?	10%	35%	55%
40	The teacher should walk around to engage the students in the learning process.	90%	10%	0.0%
41	Do you think that the use of audio-visual aids helps in creating better classroom environment?	95%	0.0%	5%

109

Section C: Students' Attitude towards Learning Environment	Agree	Neutral	Disagree
42	An interesting initiation on the part of the teacher not only helps catching students' attention but also sets up a friendly environment for the learning.	75%	25%	0.0%
43	Do you think that the teacher's encouraging attitude towards students' questions helps in making the environment better for learning?	95%	0.0%	5%
44	Holding quizzes and doing exercises can help create a better environment of leaning.	95%	5%	0.0%
45	Do you think providing reference or/and reading material helps in creating a competitive environment in the class?	95%	5%	0.0%
46	Splitting students into smaller/bigger groups helps in creating good learning environment.	85%	15%	0.0%
47	Individual attention given to the students by the teacher can contribute in creating better learning environment.	85%	5%	10%
48	Do you think computer-based learning can help build better environment in the class?	60%	40%	0.0%

Table 4.5 depicted students' attitude towards learning environment. The results indicated that all (100%) followed by 80%, 85%, and 60% respondents respectively agreed that the friendly environment in the class helped them learn better, it was better for the teacher to be little strict at times, making class more integrative helped learn better and that an informal setting of the class was good for the learning. While, 55% respondents disagreed that the class should have a traditional look—where teacher would be standing on a higher podium. While, 90% and 95% respectively reported to agree that it would be better if the teacher walked around to engage the students in the learning process and that

110

the use of audio-visual aids helped in creating a better classroom environment. The results disclosed that 75%, followed by 95% respondents respectively agreed that an interesting initiation on the part of the teacher not only helped catching the students' attention but also set up a friendly environment for the learning, the teacher's encouraging attitude towards the students' questions, holding quizzes, exercises and providing reference or/and reading material helped in creating a competitive environment in the class. While, 85% followed by 85%, 65% and 60% respectively reported to agree that splitting students into smaller/bigger groups, providing individual attention and computer-based learning helped build better environment in the class.

4.1.5.1.2.4 Motivation and Expectations

This section was intended to analyze the expectations and motivation of the students regarding the course of Teaching-Learning Strategies. The course had to be redesigned and was taught according to the expectations and the level of the motivation of the students.

Table 4.6

Motivation and Expectations

Section F: Motivation and expectations		Agree	Neutral	Disagree
51	Would you be interested in taking part in this course?	100%	0.0%	0.0%
52	Do you think a course that includes self-study will help you learn better?	90%	10%	0.0%
53	Do you think including interactive exercises/activities will help in making the course interesting?	95%	5%	0.0%

| 54 | Do you think that this course will be more difficult than the traditional learning in the class? | 10% | 45% | 45% |
| 55 | Do you think the course will be challenging for the students of BS (Education) at the 7th Semester? | 30% | 25% | 45% |

The results in table 4.6 revealed the motivation and expectations of the learners with respect to the course that was taught during this study. The result indicate that all (100%) followed by 90% and 95%, respondents respectively agreed that they would be interested in taking part in this course, the course with self-study component would help them learn better and interactive exercises/activities included in the course would help in making the course interesting. While, 45% and 25% respondents respectively remained neutral and disagreed in response to the question that the course would be more difficult than the traditional learning in the class and that the course would be challenging for the students of BS (Education) at the 7th Semester.

Table 4.7

Recommendations

	Do you think the following suggestions will help integrate the Computer Assisted Instruction with Face-to-Face Teaching?	No importance at all	Little importance	Quite/very great importance
1	Better access to technological equipment	0.0%	10%	90%
2	Reliability of equipment	0.0%	10%	90%
3	Availability of high-quality equipment	0.0%	30%	70%

112

4	Training/courses in using instructional technologies	0.0%	5%	95%
5	Instructional technology-support	0.0%	30%	70%
6	Technological hands-on training/courses	0.0%	30%	70%
7	Technical support	0.0%	20%	80%
8	Policies on using instructional technology across the curricula	0.0%	25%	75%
9	Dedicated time in courses to prepare, explore and develop	0.0%	20%	80%

Table 4.7 showed the results of the question about the given suggestions that would help integrate the Computer Assisted Instruction with Face-to-Face Teaching. The results indicated that 90% followed by 90%, 70%, 70%, 95%, 70%, 70%, 75%, 70%, and 80% respondents respectively had given quite great importance to better access to technological equipment, reliability of equipment, availability of high quality equipment, training/courses in using instructional technologies, instructional technology-support, technological hands-on training/courses, technical support, policies on using instructional technology across the curricula and dedicated time to prepare, explore and develop courses to integrate Computer Assisted Instruction with Face-to-Face Teaching.

4.1.5.2 The Environmental Analysis

The environmental analysis is about collecting data and getting information to evaluate the environment in which teaching-learning process takes place. Evaluating environment means gathering information about the available and required resources; so that the instructional decision making may be done accordingly. It is important to

113

understand the existing environment so that limitations and constraints can be considered before designing the instructions.

Instructional decision making based on environmental analysis involved the following:

- Learning strategies

- Required resources

- Mode of instruction

Table 4.8

Use of Instructional Technologies in Classroom

What instructional technologies have you used in the class?	Never Rarely	About half the time	More than half the time
Personal computers/Laptop	80%	10%	10%
Video conferencing systems	100%	0.0%	0.0%
Learning Management System/VLE (WebCT, Moodle etc.)	100%	0.0%	0.0%
Audio equipments (including software)	100%	0.0%	0.0%
Videos	90%	10%	0.0%
Digital cameras	95%	5.0%	0.0%
Web searching	90%	5.0%	5.0%
Internet communication (e.g. e-mail, forums, chat)	75%	10%	15%
Presentation softwares	55%	15%	30%
Drill-practice programs,	80%	20%	0.0%

Tutorials	90%	10%	0.0%
Spreadsheets	100%	0.0%	0.0%
Concept mapping tools	80%	15%	5.0%
Database tools	75%	20%	5.0%
Simulation tools	85%	10%	5.0%
Multimedia	50%	15%	35%
Digital library access	55%	10%	35%
Using basic audio-visual aids (e.g. chalkboard, pictures, images, diagrams, charts, specimens, OHP)	35%	20%	45%
Educational CDs	95%	5.0%	0.0%
E books	85%	10%	5.0%
Lectures	30%	10%	60%
Textbooks	60%	5.0%	35%
Lecture handouts	30%	10%	60%
Practical Classes	35%	35%	30%
Class notes	25%	40%	35%
Discussions sessions	15%	30%	55%

Table 4.8 shows the results that revealed the type and frequency of the use of various technologies in the classroom. The results showed that 80% respondents followed by 100%, 100%, 100%, 90%, 95%, 90%, 75%, 55%, 80%, 90%, 100%, 80%, 75%, 85%, 50%, and 55% respectively reported that they had never or rarely used the personal computers/laptops, video conferencing system, learning management systems, audio equipment, videos, digital camera, web searching, internet communications, presentation

software, drill and practice programs, tutorials, spread sheets, concept mapping tools, database tools and simulation tools, multimedia and digital library in the class. While, 65% of the cumulative respondents reported that they had used the basic audio-visual aids about/more than half of the time in the class. While, 95% respondents followed by 85% and 60% respectively responded that they had never or rarely used educational CDs, e-books, and textbooks. While, 60%respondents followed by 60%, 30%, 60% and 55% respectively said that "more than half the time" they had experienced class lectures, used lecture handouts, experienced practical classes, used class notes and had discussion sessions in the classroom.

4.1.5.5 The Instructional Media Analysis

The instructional media profile is a well-defined set of instructional proceedings to determine as to what type of media and other resources are to be used in the classrooms so as to arrange those accordingly. The main objective is to incorporate the right instructional material for each student. Following parameters were considered to develop the instructional media profile:

Table 4.9

Available Resources

What kinds of facilities are accessible for you in the university?	Not accessible	Restricted access	Free access
Computers (in Lab)	0.0%	30%	70%
Computers (in Class)	90%	10%	0.0%
Video conferencing systems	95%	5%	0.0%

Learning Management Systems/VLE (WebCT, Moodle etc.)	60%	20%	20%
Audio equipment (including software)	80%	5%	15%
Digital cameras	90%	10%	00%
Enough quality of hardware	80%	15%	5.0%
Internet connected computer	45%	35%	20%
Multimedia facility in classrooms	35%	40%	25%
Digital library access	0.0%	15%	85%
Basic audio-visual aids (e.g. chalkboard, pictures, images, diagrams, charts, specimens, OHP)	10%	0.0%	90%
Educational CDs	90%	5.0%	5.0%
E-books	55%	20%	25%
Recorded/Online lectures	75%	5%	20%
Textbooks	15%	25%	60%
Lecture handouts	10%	0.0%	90%
Tutorials	95%	5%	0.0%
Practical classes	45%	25%	30%
Discussion sessions	20%	5%	75%

Table 4.9 depicts the available resources to the students at the university. The results revealed that 70% respondents reported that they had free access to computers in the labs, while, 90% followed by 95%, 60%, 80%, 80% and 80% respectively reported that they did not have access to computers, video conferencing system, VLE, audio equipment, digital camera, quality hardware in the classrooms. While, 80% and 75% respectively

reported that they had no or restricted access to the internet connected computers and multimedia facility in the classrooms. While, 85% respondents followed by 60%, 90%, 55%, 75% respectively informed that they had free access to digital library, basic A.V. aids, textbooks, lecture handouts, practical classes and discussion sessions. While, 90% respondents followed by 55%, 75%, and 95% respectively reported that the educational CDs, e-books, online/recorded lectures and tutorials were not assessable.

4.1.6 Analysis of Open-ended Needs-analysis Questionnaire

Following themes were generated based on the open-ended questions that are further analyzed through percentages:

1. What are your requirements as a prospective teacher?

- Teacher training
  - o Individual Differences
  - o Teaching styles
  - o Classroom management
  - o Dealing with changing situations
  - o Behavioral management
  - o Working with individuals and group
  - o Professionalism
  - o Personality development as a teacher
  - o Teaching skill
  - o Assessment and evaluation
- Activity based education

- Practical work

- Teaching practice

- Teaching through latest skills

- Regular supervision

- Multimedia

- Proper classroom setup equipped with the latest technologies

- Comfortable and well-organized learning environment

- Well-qualified cooperative teachers having updated knowledge

- Seminars on teaching and learning

- Opportunities for active class participation

- Training sessions before the teaching practice

- Proper guidelines

- Self-respect and respect from others

2. Which skills do you want to learn as a prospective teacher?

- Developing the skills for conducting the needs-analysis

- Applying various teaching styles keeping in view the learning styles

- Skills to motivate students

- Skills for personality development

- Presentation skills

- Non-verbal communication skills

- Social work skills

- Writing skills

- Communication skills

- Board writing skill

- Reading skills

- Demonstration skills

- Confidence development

- Ability to understand child psychology

- Effective introduction skills

3. Please identify the problems and constraints you have been facing as a prospective teacher in the teaching and learning process.

   - Practice knowledge about the child psychology

   - Lack of practical activities

   - Lack of technology and unavailability of multimedia

   - Administrative issues

   - Teaching methodology is not appropriate

   - Lack of Professional behavior

   - Unfair assessment

   - Uncomfortable classroom environment

   - Lack of trained teachers

   - Reference material is not provided

   - Support staff is not cooperative

   - Lack of proper instructions by the teachers

4. What do you expect from this course?

- Learn new styles of teaching

- Fulfil the requirements

- Learn strategies according to the needs of the students

- How to recognize needs of the learner

- Practical activities

- How to collaborate with students

- Learn the skills to be a good teacher

- New ways of teaching

- Develop thinking skills

- Develop confidence as a teacher

5. What sort of learning environment would you prefer to have in the classroom?

- Friendly stress-free environment

- Practical activities

- Encourage students' participation

- Teacher gives presentation topics

- Individual or group activities

- Proper classroom with facilities and technology

- Discussion based environment

- Teacher's involvement in solving the students' problems

6. What type of teaching methodology or format of instruction would you want to have in your classroom?

- According to the requirements of the students

- Activity-based

- With proper explanation and instructions

- Start the lecture for concept clarity

- Engage students

- Use board to highlight important points

- Use the discussion method

- Distribute the lecture notes

- Employ the demonstration method

- Make use of the problem-solving methods

7. Please provide some recommendations to improve the teaching and learning process.

- Focused on different angles

- Course evaluation by the students

- Suggestions of course evaluation may be incorporated

- Teacher training

- Teachers should be more cooperative and supportive

- Use of technology

- Encourage self-study

- More assignments and quizzes

- Class discussion

- Some useful and important reading material by the teachers

- Provision of guidelines related to research material on internet, articles and journals etc.

- Feedback

- Reflective practices

- Seminars

- Improve resources

- Ideas sharing

- Administrative support

- IT support

Table 4.10

Requirements

Question statement	Percentage %
8. What are your requirements as a prospective teacher?	
• Teacher training	100%
○ Individual Differences	70%
○ Teaching styles	70%
○ Classroom management	80%
○ Dealing with changing situations	60%
○ Behavioral management	60%
○ Working with individuals and group	50%
○ Professionalism	70%
○ Personality development as a teacher	80%
○ Teaching skill	90%
○ Assessment and evaluation	80%

123

• Activity based education	70%
• Practical work	70%
• Teaching practice	80%
• Teaching through latest skills	90%
• Regular supervision	50%
• Multimedia	100%
• Proper classroom setup equipped with the latest technologies	100%
• Comfortable and well-organized learning environment	90%
• Well-qualified cooperative teachers having updated knowledge	70%
• Seminars on teaching and learning	60%
• Opportunities for active class participation	50%
• Training sessions before the teaching practice	80%
• Proper guidelines	80%
• Self-respect and respect from others	70%

Table 4.10 represents the responses against the question about the requirements of the respondents as a prospective teacher. 100% respondents reported that teacher training is the most essential requirement for the prospective teacher and further they identified the areas in which they required teacher training i.e. individual differences (70%), teaching styles (70%), classroom management (80%), teaching skills (90%), assessment and evaluation (80%). Prospective teachers also identified other requirements such as activity-

based education (70%), teaching through latest skills (90%) and proper classroom set-up with latest multimedia technologies (100%).

Table 4.11

Skills

9. Which skills do you want to learn as a prospective teacher?	Percentage
Developing the skills for conducting the needs-analysis	60%
Applying various teaching styles keeping in view the learning styles	90%
Skills to motivate students	80%
Skills for personality development	50%
Presentation skills	80%
Non-verbal communication skills	70%
Social work skills	50%
Writing skills	70%
Communication skills	80%
Board writing skill	90%
Reading skills	40%
Demonstration skills	80%
Confidence development	70%
Ability to understand child psychology	60%
Effective introduction skills	60%

Table 4.11 shows the responses against the question about the skills they want to learn as a prospective teacher. 90% reported that they want to be skilled in applying various teaching styles keeping in view the learning styles, motivating students (80%), effective presentation & communication (80%), board writing (90%) and demonstration (80%).

Table 4.12

Problems and Constraints

10. Please identify the problems and constraints you have been facing as a prospective teacher in the teaching and learning process.	Percentage
Lack of practical knowledge about the child psychology	70%
Lack of practical activities	80%
Lack of technology and unavailability of multimedia	100%
Administrative issues	80%
Teaching methodology is not appropriate	70%
Lack of Professional behavior	60%
Unfair assessment	60%
Uncomfortable classroom environment	70%
Lack of trained teachers	70%
Reference material is not provided	50%
Support staff is not cooperative	60%
Lack of proper instructions by the teachers	40%

126

Table 4.12 reflects the responses of the respondents against the question about problems and constraints they have been facing as a prospective teacher in the teaching and learning process. The respondent identified lack of practical knowledge about the child psychology (70%), practical activities (80%), technology and availability of multimedia (100%), administrative issues (80%), uncomfortable classroom environment (70%), and lack of trained teachers.

Table 4.13

Expectations

11. What do you expect from this course?	Percentage
Learn new styles of teaching	90%
Fulfil the requirements	70%
Learn strategies according to the needs of the students	90%
How to recognize needs of the learner	80%
Practical activities	90%
How to collaborate with students	60%
Learn the skills to be a good teacher	90%
New ways of teaching	80%
Develop thinking skills	50%
Develop confidence as a teacher	60%

Table 4.13 depicts the responses about the expectations of the prospective teachers from the course and 90% expected to learn new styles of teaching, strategies according to

the needs of the students, practical activities and skills to be a good teacher. 80% expected that this course will help them to recognize needs of the learners, and new ways of teaching.

Table 4.14

Preferences for Learning Environment

12. What sort of learning environment would you prefer to have in the classroom?	Percentage
Friendly stress-free environment	70%
Practical activities	80%
Encourage students' participation	80%
Individual or group activities	90%
Proper classroom with facilities and technology	90%
Discussion based environment	70%
Teacher's involvement in solving the students' problems	50%

Table 4.14 reflects the respondents responses against the question about the sort of learning environment they prefer to have in the classroom and 70% wanted to have stress-free environment, with practical activities (80%), encouraged with students participation (80%), individual and group activities (90%), proper classroom with facilities and technology (90%) an discussion based environment (70%).

128

Table 4.15

Teaching methodology for classroom

13. What type of teaching methodology or format of instruction would you want to have in your classroom?	Percentage
According to the requirements of the students	90%
Activity-based	90%
With proper explanation and instructions	70%
Start the lecture for concept clarity	50%
Engage students	70%
Use board to highlight important points	50%
Use the discussion method	60%
Distribute the lecture notes	50%
Employ the demonstration method	70%
Make use of the problem-solving methods	70%

Table 4.15 represents the responses about the type of teaching methodology or format of instruction prospective teachers want to have in their classroom and 90% reported that teaching methodology should be according to the requirements of the students, activity based (90%), with proper explanation and instructions to engage students (70%), employ the demonstration and problem-solving method in classroom.

Table 4.16

Recommendations

14. Please provide some recommendations to improve the teaching and learning process.	Percentage
Focused on different angles	60%
Course evaluation by the students	50%
Suggestions of course evaluation may be incorporated	70%
Teacher training	70%
Teachers should be more cooperative and supportive	50%
Use of technology	90%
Encourage self-study	70%
More assignments and quizzes	70%
Class discussion	50%
Some useful and important reading material by the teachers	50%
Provision of guidelines related to research material on internet, articles and journals etc.	70%
Feedback	50%
Reflective practices	80%
Seminars	60%
Improve resources	80%
Ideas sharing	50%
Administrative support	70%

130

IT support	90%

Table 4.16 shows the responses of the respondents when they asked to provide some recommendations to improve the teaching and learning process, (70%) recommended to incorporate suggestions of course evaluations, teacher training, use of technology (90%), self-study (70%), more assignments and quizzes, reflective practices (80%), and improvement in resources (80%).

4.1.5.1.6 Analysis of Learning Styles Questionnaire

`VAK learning style questionnaire was administered to get data about the students' learning styles. This questionnaire administered to assess the learning styles of the students in three categories: (a) visual (b) auditory and (c) kinesthetic. This questionnaire helped students in identify their preferred learning style. The possibility that some students would have a combination of learning styles was also taken into consideration.

Table 4.17

Students' Learning Styles

	Visual	Auditory	Kinesthetic	Total
Number of students	07	07	06	20

Table 4.17 showed (based on the data collected from the VAK inventory) that 07 students each had visual learning and auditory styles while 06 had kinesthetic learning styles out of total number of 20 students.

131

4.1.5.3 The Content Analysis

The content analysis provides a brief overview of the course specification and the overall planning of the course. The content analysis intended to indicate the course objectives, type of tasks and levels of work difficulty, timings, selection of the course, major themes and areas, pre-requisite knowledge and skills, task and the topic analysis. Following procedure was applied for the content analysis:

1. Overall course goals and outcomes were identified.

2. A unit wise course outline was formulated.

3. Prerequisite knowledge areas were identified.

4. Modular hierarchy of the course outline was developed

4.1.5.3.1 The Course Outline

Following was the course outline prepared in the light of the ADDIE's model of the instructional design. It was consisted of the tile of the course, overall course objectives and course contents which were divided in unites to identify the major themes and scope of the course.

Table 4.18

The Course Outline

Course title: Teaching & Learning Strategies and Reflective Practices

Capsule Statement/Course Description:

In the present era there has been a growing pressure on the teachers to 'prove', 'show' and 'certify' that their students understand what they are being taught. The teachers are expected to use warm-up activities, promote activity-based teaching and collaborative learning among the students. Moreover, teachers are expected to reflect on their practices to change the weaknesses of the students into strengths. Similarly, there has been a

growing concern to promote creativity and productivity among the students. This shows that there has been seemingly a major shift—from teaching to reflective and performance-based teaching. Therefore, the teachers are expected to prepare the learners for the instructions by using various learning strategies. The basic objective of the course is to equip the prospective teachers to select suitable, sound and effective teaching strategies in the classroom in order to make the teaching-learning process productive. This course also highlights various student-centered and teacher-centered teaching methods. The course also aims at employing the techniques and strategies of reflective practices.

Goals/Outcomes

After completing this course, the students will be able to:

1. explain the concepts of teaching, teaching process and learning strategies;
2. understand the relationship among different elements of teaching;
3. enhance their observational skills during the teaching-learning process;
4. understand the role of a teacher in the teaching-learning process;
5. select suitable teaching-learning strategies during the practical classroom settings;
6. select appropriate teaching strategies according to the nature of the subject matter;
7. develop appropriate lesson plans according to the nature of the subject matter;
8. select and apply appropriate instructional technologies in the classroom.
9. use the appropriate class-room management techniques to develope positive classroom environmnt;
10. reflect on their own practices to identify strengths and weaknesses of their teaching method;
11. improve their teaching in the light of student's feedback and self-reflections;
12. and to apply various student-centered and teacher-centered teaching strategies.

Course Contents:
Unit 01: Teacher and Teaching

1.1 Concept of effective teaching
1.2 Main features/characteristics of teaching
1.3 Personal and professional characteristics of effective teaching
1.4 Teaching as a profession
        1.4.1 Roles and responsibilities
        1.4.2 Demands and challenges

Unit 02 Teaching Process
2.1 Process of teaching
2.2 Variables of teaching
2.3 Active learning
2.4 Characteristics/principles/laws of learning
2.5 Information processing model

2.6 Teaching and learning process

Unit 03: Approaches to Teaching
3.1 Concept of teaching methods and strategies
      3.1.1 Andragogy and pedagogy
      3.1.2 Teacher-centered and student-centered teaching
      3.1.3 Matching teaching styles with the students' learning styles
3.2 Lecture Method
3.3 Demonstration Method
3.4 Discussion Method
3.5 Problem-solving Strategy/Inquiry
3.6 Use of ICTs/Computer Assisted Instructions
3.7 Project Method
3.8 Team Teaching
3.9 Story Telling
3.10 Role Play
3.11 Micro Teaching
3.12 Cooperative Learning

Unit 04: Managing Teaching
4.1 Identifying the learners' needs and characteristics
4.2 Approaches to lesson planning
4.3 Need for lesson planning
4.4 Types of lesson planning
4.5 Daily, Weekly and Yearly Plans
4.6 How Scheme of Studies be formulated weekly

Unit 05: Instructional Technologies
5.1 Definitions, concept and nature of teaching aids
5.2 Instructional technology and its importance
5.3 Selection and use of appropriate teaching aids
5.4 Type/kind of educational technologies

   5.4.1 Electronic (Radio, TV, Projectors and Computers)
   5.4.2 Non-electronic (Boards, Charts, Models, Posters, etc.)
   5.4.3 Print (Books, Journals, Newspapers and Magazines etc.)
   5.4.4 Social media (Facebook, Tweeter etc.)

Unit 06: Classroom Management
6.1 Concept of classroom management
6.2 Positive class-room environment
6.3 Classroom seating arrangement
6.4 Classroom climate
6.5 Classroom decoration

Unit 07: Reflective Practice

7.1 Meaning and nature of Reflective Practices
7.2 Process of reflection
7.3 Major techniques and strategies:
      7.3.1 Critical incident analysis
      7.3.2 Reflective learning journals
      7.3.3 Peer coaching
      7.3.3 Action research
      7.3.5 Portfolios as a source of reflection
7.4 Skills for reflection
7.5 Systematic reflection throughout the teaching-learning process

Unit 8 Models of Reflective Practices:
8.1 Schon's Model
8.2 Gibbs's Model
8.3 Kolb's Model
8.3 Johns Ten "Cs" model

4.1.5.3.2 Areas for Previous Knowledge (Skills, Pre-requisite Knowledge)

Following areas were identified as previous knowledge of the students keeping in view the above mention course outline:

- Concept of teaching
- Approaches of teaching
- Lesson planning
- Use of instructional technologies
- Classroom management
- Reflective practices

4.1.5.3.3 Modular Hierarchy of the Course

The contents of the course were analyzed unit-wise as well as topic-wise and as a result, the course outline was further divided in the modules, units, topics and subtopics in the form of a modular hierarchy according to the concepts presented in each unit.

Table 4.19

Modular Hierarchy of the Course

Title	Contents
Module 01: The Teacher and Teaching	
Unit 1 Concept of effective teaching	1.1 Definition of teaching 1.2 Concept of teaching 1.3 Effective teaching
Unit 2 Main features/characteristics of teaching	2.1 Planning and preparation 2.2 The classroom environment 2.3 Instruction professional responsibilities
Unit 3 Characteristics of an effective teacher	3.1 Personal characteristics 3.2 Professional characteristics
Unit 4 Teaching as a profession	4.1 Concept of profession 4.2 Roles and responsibilities 4.2.1 Code of ethics 4.2.2 Accountability 4.3 Demands and challenges
Module 2: The Teaching Process	
Unit 1 Process of teaching	1.1 Planning 1.2 Revision 1.3 Assessment 1.4 Implementation
Unit 2 Variables of teaching	2.1 Variables of teaching process 2.2 The Transmission Model of Teaching and Learning 2.3 Lowman's Two-Dimensional

	2.4 Teaching-Learning Transactional Model of College Teaching
	2.5 Groccia's Model for Understanding Teaching and Learning
Unit 3 Active learning	3.1 What is learning?
	3.2 Levels of learning
	3.2 Active learning model
	3.3 Dale cone of experiences
	3.4 Active learning strategies
Unit **4** Characteristics/principles/laws of learning	4.1 Readiness
	4.2 Exercise
	4.3 Effect
	4.4 Primacy
	4.5 Intensity
	4.6 Recency
Unit 5 Information processing	5.1 Basic assumptions
	5.2 Computer-mind analogy
	5.3 The information processing system
	5.4 Stage model of information processing
Unit 6 Teaching and learning process	6.1 Teaching and Learning Process Model
	6.2 Context
	6.3 Input
	6.4 Classroom Processes
	6.5 Output

Module 03: Approaches to Teaching

Unit 01	1.1 Andragogy and pedagogy
Concept of teaching methods and strategies	1.2 Teacher-centered and student-centered teaching
	1.3 Matching teaching styles with the students' learning styles

Unit 02 Lecture method	2.1 Concept of Lecture Method
	2.2 Application of Lecture Method
	2.3 Advantages and Disadvantages of Lecture Method
Unit 03 Demonstration method	1.1 Concept of Demonstration Method
	1.2 Steps needed to conduct a demonstration lesson
	1.3 Advantages of Demonstration Method
	1.4 Disadvantages of Demonstration Method
Unit 04 Discussion method	4.1 Concept of Discussion Method 4.2 Typesof Discussion Method 4.3 Lesson development 4.4 Advantages of Discussion Method 4.5 Disadvantages of Discussion Method
Unit 05 Problem-solving	5.1 Concept of problem-solving method
	5.2 Problem-solving Cycle
	5.3 Techniques for Error Free Problem-solving
	5.4 Types of Problems
Unit 06 Use of ICT/Computer Assisted Instruction	6.1 Concept of Computer-assisted instruction
	6.2 History of CAI
	6.3 Common Categories of CAI
	6.4 Advantages of CAI
	6.5 Disadvantages of CAI
Unit 07 Project method	7.1 Concept of Project Method
	7.2 Phases of Project Method
	7.3 Advantages and
	Disadvantages of Project Method
Unit 08 Team teaching	8.1 Concept of Team Teaching
	8.2 Categories of Team Teaching
	8.3 Models of Team Teaching
	8.4 Advantages and Disadvantages of Team Teaching

Unit 09 Story telling	9.1 Concept of Storytelling
	9.2 Storytelling and intercultural understanding
	9.3 Techniques of story telling
	9.4 Performance skills
	9.5 Advantages of Storytelling
Unit 10 Role-play	10.1 Concept of Role-play
	10.2 Steps to conduct Role-play
	10.2.1 Preparation for Role-play
	10.2.2 Conducting the Role-play
	10.2.3 Debriefing
	10.2.4 Other ways of using Role-play
	10.3 Key for Success
	10.4 The Teacher's Role
	10.5 Advantages of Role-play
	10.6 Disadvantages of Role-play
Unit 11 Micro-Teaching	11.1 History of Micro-teaching
	11.2 Concept of Micro-teaching
	11.3 Preparation for a micro-lesson session
	11.4 Re-planning, re-presenting and feedback
	11.5 Teaching skills
	11.6 Video confrontation
	11.7 Advantages of Micro-teaching
Unit 12 Cooperative Learning	12.1 Concept of Cooperative Learning
	12.2 Types of Cooperative Learning
	12.3 Elements of Cooperative Learning
	12.4 Cooperative Learning techniques
	12.5 Advantages

Module 04: Managing Teaching

Unit 01	1.1 Student's personality

Identifying the learners' needs and characteristics	1.2 Students' temperament
	1.3 Students' self-concept
	1.4 Self efficacy
	1.5 Students' motivation
	1.6 Students' concentration
	1.7 Students' critical thinking
	1.8 Students' learning styles
Unit 02 Approaches to the lesson planning	2.1 Forward Design
	2.2 Central Design
	2.2 Backward Design
Unit 03 The Need for lesson planning	3.1 Planning in teaching
	3.2 Decisions involved in planning lessons
	3.3 Setting learning objectives
	3.4 Teaching-learning activities
	3.5 Assessment strategies
Unit 04 Types of lesson planning	4.1 Short term plans
	4.1.1 Daily plans
	4.1.2 Weekly plans
	4.2 Long term plans
	4.2.1 Monthly plans
	4.2.2 Yearly Plans
	4.2.3 The scheme of studies

Module 05: Instructional Technologies

Unit 01 Instructional technology	2.1 Definition and concept of Instructional technology
	2.2 History of instructional technology
	2.3 Rational of using instructional technology
Unit 02 Planning, Selecting, and Using Instructional technology	3.1 Planning of Instructional technology
	3.2 Selection of Instructional technology
	3.3 Uses of Instructional technology

Unit 03 Type/kind of instructional technologies	4.1 Electronic (Radio, TV, Projectors and Computers)
	4.2 Non-electronic (Boards, Charts, Models, Posters, etc.)
	4.3 Print (Books, Journals, Newspapers and Magazines etc.)
	4.4 Social media (Facebook, Tweeter etc.)

Module 06: The Classroom Management

Unit 01	1.1 Classroom management
Concept of the classroom management	1.2 Classroom organization
	1.3. Manager vs teacher
Unit 2 Positive class-room environment	2.1 Classroom seating arrangement
	2.2 Classroom Climate
	2.3 Classroom decoration
	2.4 Classroom discipline
Unit 3 Classroom management styles	3.1 Authoritarian style
	3.2 Indifferent style
	3.3 Authoritative style
	3.4 Tolerant style
Unit 4 Managing difficult behaviors	4.1 What is behavior?
	4.2 Behavior modification techniques

Module 07: Reflective Practice

Unit 1 Meaning and nature of Reflective Practices	1.1 Definitions of reflective practices
	1.2 Scope of reflective practices
Unit 2 Process of Reflection	2.1 Reflection as a process
	2.2 The reflection cycle
Unit 3 Major techniques and strategies	3.1 Critical incident analysis
	3.2 Reflective learning Journals

141

3.3 Peer coaching

3.3 Action research

3.4 Portfolios as a source of reflection

3.5 Skills for reflection

3.6 Systematic reflection throughout the teaching-learning process

Unit 8 Models of Reflective Practices

Unit 1	1.1 Model description
Schon's Model	1.2 Components of the model
	1.3 Application of the model
Unit 2 Gibbs's Model	2.1 Model description
	2.2 Components of the model
	2.3 Application of the model
Unit 3 Kolb model	3.1 Model description
	3.2 Components of the model
	3.3 Application of the model
Unit 4 Johns Ten "Cs" model	4.1 Model description
	4.2 Components of the model
	4.3 Application of the model

4.1.5.4 Instructional Analysis

Instructional analysis is a process to identify types and levels of learning in order to build a learning hierarchy of knowledge and skills and to identify the prerequisite knowledge and skills. This information was further utilized to design module-wise and unit-wise course objectives in this study. Following steps were taken for the instructional analysis:

4.1.5.4.1 Identification of the Types of Learning

Blooms Taxonomy was taken as a framework to identify the types of learning that was categorized in three domains, that are: Cognitive, Affective and Psychomotor. Following is the alignment of outcomes from course goals to modules objectives and unit wise objectives:

Table 4.20

Alignment of Outcomes

Course Title: *Teaching-learning Strategies and Reflective Practices*

Course Goals/Objectives	Module objective	Unit objectives
1. Explain the concept of teaching, teaching process and learning strategies.	1. Familiar with the basic concept, principles and characteristics of teaching and teachers. 2. Distinguish between the personal and professional characteristics of an effective teacher. 3. Explore the ways to become an effective teacher. 4. Understand the major roles of a professional teacher 5. Describe various responsibilities of a teacher 6. Demonstrate different roles of a teacher.	1. Explain the definition of teaching 2. Discuss the concept of teaching 3. Identify and enlist the components of effective teaching 4. Draw a model of effective teaching 5. Conceptualize the main features and characteristics of teaching 6. Design planning and preparation documents for the class 7. Create a conducive learning environment in the class 8. Demonstrate effective instruction for the students in the class 9. Classify professional responsibilities of a teacher in various domains 10. Recognize personal characteristics of the teachers 11. Demonstrate professional characteristics of the teachers 12. Compare personal and professional characteristics of the teachers

143

		13. Explain the concept of profession/professional
		14. Analyze the roles and responsibilities of a professional teacher
		15. Interpret and develop a code of ethics
		16. Categorize demands and challenges of a professional teacher
2. Understand relationship among different elements of teaching.	1. Explain the process of teaching and its intervening variables	1. Conceptualize the concept about process of teaching and its components
	2. Design and apply active learning strategies in the classroom situation	2. Determine planning procedures and goals at different levels of teaching
	3. Interpret characteristics/principles/ laws of learning	3. Plan revision of lesson to improve the teaching process
	4. Conceptualize information processing model with its application in a real situation	4. Develop assessment strategies to evaluate the students' performance
		5. Identify variables of teaching process that affect the teaching-learning process
		6. Develop and explain models of the teaching processes
		7. Compare various models reflecting the teaching and learning processes
		8. Explain the concept of learning
		9. Apply the levels of learning in a classroom situation
		10. Draw and analyze active learning model
		11. Interpret dale cone of experiences
		12. Create active learning strategies
		13. Conceptualize laws of learning by developing a concept map
		14. Design activities according to the laws of learning to conduct the classroom activities
		15. Apply the laws of learning in teaching-learning process

		16. Understand the concept of information processing and the basic assumptions about it
		17. Analyze the computer-mind analogy
		18. Interpret the information processing system
		19. Draw and discuss a Stage model of the information processing
		20. Conceptualize teaching and learning process
		21. Develop a teaching and learning process model
		22. Explain variables in teaching and learning process model such as context, input, classroom processes and output
3. Enhance their observational skills during the teaching-learning process.	Understand the basic concept of methods and techniques of teaching.	1. Understand the concept of teaching methods and strategies
		2. Differentiate between the concepts of andragogy and pedagogy
		3. Compare teacher-centered and student-centered teaching
		4. Identify various learning styles
4. Understand the role of the teacher in teaching-learning process	distinguish between different methods of teaching (lecture method, classroom method, discussion methods, demonstration method, inquiry, problem-solving, discovery method, assignment and project method)	1. Understand the basic concept of lecture method
		2. Identify the advantages and disadvantages of lecture method
		3. Understand the basic concept of demonstration method
		4. Identify the advantages and disadvantages of demonstration method
		5. Understand the basic concept of Discussion Method
		6. Identify the advantages and disadvantages of Discussion Method
		7. Understand the concept of Problem-solving Method

8. Explain Problem-solving Cycle

9. Identify types of the problems

10. Understand the concept of Computer-assisted Instruction

11. Describe the history of CAI

12. Differentiate the common Categories of CAI

13. Identify the advantages and disadvantages of CAI Method.

14. understand the basic concept of Project Method

15. identify the advantages and disadvantages of Project Method

16. understand the basic concept of Team Teaching

17. identify the advantages and disadvantages of Team Teaching

18. Understand the concept of Storytelling

19. Develop intercultural understanding through the storytelling performance skills

20. Identify advantages of Storytelling

21. Understand the concept of Role-play

22. Observe the role of the teacher during the role-play activities

23. Identify the advantages and disadvantages of Role-play

24. Conceptualize Micro-teaching as a process

25. Plan, design and conduct micro-lesson session

26. Manage video confrontations during the micro-lesson session

27. Identify advantages of Micro-teaching

28. Explain the concept of Cooperative Learning

		29. Elaborate various types of Cooperative Learning
		30. Design the cooperative learning strategies keeping in view the elements of cooperative learning
5. Select appropriate teaching strategy according to the nature of the subject matter 6. Apply various student-centered and teacher-centered teaching strategies	Apply the different methods and techniques of teaching.	1. Apply Lecture Method 2. Apply Demonstration Method 3. Apply Discussion Method 4. Apply techniques for error free problem-solving 5. Apply Project Method 6. Apply Team Teaching 7. Apply techniques of the storytelling 8. Demonstrate Storytelling 9. Demonstrate Role-play and follow all the steps to conduct the role-play activities 10. Demonstrate various Teaching skills through micro-lesson 11. Demonstrate the cooperative learning techniques
7. Develop appropriate lesson plans according to the nature of the subject matter	1. Identify learners' needs and characteristics 2. Design lesson plans according to various approaches 3. Understand the need of lesson planning in the teaching and learning situation 4. Construct different types of lesson planning (weekly and daily planning as well as unit and course planning)	1. Identify of the learners' needs and characteristics according to their personality, temperament, self-concept and efficacy 2. Understand the students' motivation to apply various motivational techniques of concentration 3. Develop critical thinking skills among the students 4. Identify Students' learning styles 5. Conceptualize various approaches to lesson planning 6. Construct lesson plans according to Forward Design, Central Design and Backward Design

147

		7. Understand the importance of planning in the teaching
		8. Manage the teaching time according to the lesson
		9. Draw learning objectives according to Blooms Taxonomy.
		10. Develop short-term and long-term plans according to the requirements of the teaching
		11. Develop scheme of studies to manage course contents and the activities
8. Select and apply appropriate instructional technologies in the classroom	1. Understand the basic concept and importance of instructional technology 2. Distinguish between the electronic, display and print media 3. Prepare and use inexpensive aids for teaching	1. Understand the concept of Instructional Technology 2. Analyze the development of Instructional Technology in historical perspective 3. Conceptualize the importance and need of using Instructional Technology 4. Plan the Instructional Technology for the teaching and learning purpose 5. Select Instructional technology for teaching 6. Use Instructional technology to facilitate teaching and learning process and the students' learning 7. Identify the types of instructional technology 8. Differentiate the uses of various instructional technologies according to the teaching-learning situation 9. Prepare basic visual aids for teaching Evaluate the effectiveness of using various instructional technologies in the teaching and learning process
9. Use appropriate class-room management techniques to	1. Understand the basic concept of management.	1. Conceptualize the concept of classroom management

develope a positive classroom environmnt	2. Distinguish between the term management and classroom management.	2. Compare classroom management and organization
		3. Develop skills as a classroom manager and organizer
	3. Apply class-room management techniques to develope a positive classroom environmnt	4. Identify the variables of effective classroom environment
	4. Describe the importance of classroom decoration to establish effective classroom climate	5. Develop positive classroom climate in the class
		6. Conceptualize the importance of classroom decoration
		7. Develop rules and regulations to maintain classroom discipline
		8. Explain the types of classroom management
		9. Distinguish between different management styles
		10. Apply various management styles in the classroom situation
		11. Create active classroom management strategies
		12. Conceptualize the concept of behavior
		13. Apply behavior modification techniques
		14. design behavior modification activities for the specific purposes
10. Reflect on the practices of the learners to identify strengths and weaknesses of their teaching method	1. Understand the meaning and nature of Reflective Practices	1. Conceptualize various definitions of Reflection
	2. Describe the process of Reflection	2. Understand the concept and scope of Reflective Practices
	3. Apply Major techniques and strategies of Reflection	3. Explain the reflection process
		4. Observe a reflective process in the classroom
	4. Demonstrate various skills of Reflection	5. Analyze the reflection cycle
		6. Identify various reflective strategies
		7. Design activities to implement Reflective Practices in classroom

	4. Evaluate systematic reflection throughout the teaching-learning process	8. Apply different types of reflective practices in classroom
Improve their teaching in the light of student's feedback and self-reflections.	1. Understand models of reflective practices specifically Schon's Model, Gibbs's Model, Kolb model and Johns Ten "Cs" model 2. Differentiate and compare different models of reflective practices 3. Apply models of Reflective Practices according to the classroom situations	1. Conceptualize Schon's Model of Reflection 2. Differentiate and compare Schon's Model of Reflection from other models 3. Apply Schon's model in the classroom situations 4. Conceptualize Gibbs's Model of Reflection 5. Differentiate and compare Gibbs's Model of Reflection from and with other models. 6. Apply Gibbs's Model of Reflection in the classroom situations 7. Conceptualize Kolb Model of Reflection. 8. Differentiate and compare Kolb Model of Reflection from and with other models 9. Apply Kolb Model of Reflection in the classroom situations 10. Conceptualize Johns Ten "Cs" Model of Reflection 11. Differentiate and compare Johns Ten "Cs" Model of Reflection from and with other models 12. Apply Johns Ten "Cs" Model of Reflection in the classroom situations

4.1.7 Analysis Summary

The needs-assessment document was prepared to understand the performance gap, problems and needs of the prospective teachers in order to develop an instructional solution accordingly. First, the purpose and objectives of the needs-analysis were defined which followed devising the methodology of the needs-analysis—that included the population,

150

instrumentation, ways of the data collection and data analysis to get solid evidences about the performance gap. The needs-analysis plan was developed and implemented on the following parameters: leaners' analysis, environmental analysis, contents analysis, instructional analysis, and instructional media analysis. The learners' analysis was comprised of the group identification, demographics, previous knowledge, previous learning experience in terms of teaching methodology and course analysis, attitude towards the learning environment, motivation/expectations and learning styles of the learners. The groups of prospective teachers of BS education 7th semester from the Department of Education at International Islamic University, Islamabad were taken as the sample of the study. The teaching methodology and course analysis were conducted to explore their previous learning experience and the prevailing practices of teaching and course development.

The indicators of the teaching methodology and course analysis were identified based on Gagne's Nine Events of Instruction. Gagne's Nine Events of Instructions provide important understanding regarding the following fundamental aspects of teaching: gaining attention, explaining objectives, stimulating recall, presenting material, providing guidance, eliciting performance, providing feedback, conducting assessment, and carrying out retention and transfer. These elements are essential for effective teaching as they provide a roadmap for the session-wise as well as overall course planning to achieve the course objectives. The analysis revealed that the teaching methodology needs to be revised according to the specific plan of instruction in the classroom as well as in terms of course development. The study showed that the lack of instructional planning affects teaching and

151

proves ineffective in achieving the objectives. Gaining students' attention is the fundamental component as developing students' readiness and creating an environment for learning is important for the effective teaching. The needs-analysis identified that capturing students' attention through various techniques is necessary to prepare and warm-up their minds for the teaching-learning process. The study revealed that this segment remains unattended by majority of the teachers, therefore, it is recommended for the teachers to acquire the skills of delivering an effective introduction of the topic by using various techniques to capture the students' attention.

It is an established fact that an effective teaching is based on setting up and informing the learners of some objectives before each session/class as well as for the course. This study confirmed the importance of setting up and pursuing goals, but it also revealed that most of the time students were not informed about the course and session objectives—which would develop confusion and lack of clarity among the students about the purpose of the course. Another major gap identified in the teaching-learning process was not considering the students' prerequisite knowledge, skills and abilities. The study affirmed that connecting and knitting new piece of knowledge with the previous one is important for knowledge construction because if that was not done properly the students would go for superficial and rote learning as they would lack the conceptual clarity. They would also not be able to apply their knowledge in a new situation. That is why it is suggested to build the learning foundation of the students by connecting their previous knowledge to whatever new they would learn.

Presenting the contents using various methods and strategies is very important for the students' learning. The study found that often times the teachers use the same method throughout the teaching process regardless of the students' needs and the requirements of the subject—that often leads to ineffective teaching and lack of conceptual clarity among the students. Therefore, using variety of teaching methods and techniques keeping in view the needs and requirements of the learners and subject matter is essential. It was also found that there was a need to adopt planned instructional procedures so that teachers could provide the instructions in a logical and organized way through the examples and other presentation techniques. The teachers must know what the various ways of providing guidance are; such as: effective demonstration, providing hints, ques, examples, analogies, using visuals and using other such techniques.

Providing the students an opportunity to perform and demonstrate their learning through activities and exercises is important ensuring quality teaching and learning. Therefore, it is vital for the teachers to design the activities, assignments, projects and exercises for the students. The present study manifests that the activities mentioned above are often not employed in the classrooms; hence, the students do not acquire the required skills and the ability of applying those during the course as well as in the real-life situation. The objective of organizing activities can only be achieved if the activities are designed effectively and implemented along with providing constructive feedback. Assessment is another crucial element of teaching-learning process. It is a continuous process that should be done throughout the semester by using variety of assessment strategies. The prevalent practices of conducting assessments in the context of the study, that is the Department of

153

Education at International Islamic University, Islamabad include: a mid-term exam, a terminal test and a semester project. Designing and conducting assessments as per the aims and objectives require time, deliberation and an effort. Using activities for enhancing knowledge transfer and retention are not very common in our setup despite the fact that they are considered crucial in the modern teaching methods. Activities based on retention help the lear ners process learning from short-term to long-term memory such as: revision, exercise, concluding remarks and highlighting the main points or drawing a concept map.

To incorporate the above mention elements in the teaching-learning process a detailed instructional plan needed to be designed to guide the teachers at every step during the teaching. The instructional plan was consisted of the instructional modules/courseware keeping in view Gagne's Events of Instruction to facilitate the teachers following the essential instructional procedures as well as designing a course on Teaching Learning Strategies to train the prospective teachers. The study also found that an effective use of educational resources and technology has often been a challenge for the teachers; that is why, the study introduced the prospective teachers to various teaching and learning strategies; such as: individualized self-paced instructions and the blended learning environment. The environmental analysis about the available and required resources also reflected the lack of resources in the classrooms; therefore, a courseware equipped with multiple educational resources was designed to benefit the teachers as well as students as per their needs and expectations.

The research into educational methodologies/instructions over the years shows that the revisions and up gradation of a course outline according to the specific course

154

goals/objectives as well as the upcoming demands of the teaching profession is of much importance. Keeping in view that, the present study included a contents-analysis of the course outline of Teaching Learning Strategies in order to identify the general as well as the specific objectives. Moreover, it formulated the unit-wise course outlines to determine the themes and sub-themes, and to develop a modular hierarchy of the course outline. Keeping in view the findings of the contents-analysis, the course outline was divided into eight units with each unit further elaborated into a separate module having the units, themes and sub-themes. The purpose of the contents-analysis of the course outline was to analyze each topic and sub-topic of the course as per the course objectives. An instructional analysis was also conducted to design the module-wise and unit-wise course objectives keeping in view the framework of Blooms' Taxonomy. As a result, the instructional alignment of the outcomes of the course goals to the module objectives as well as unit objectives was formulated to design the instructional procedures and assessment activities according to the course requirements.

4.2 DESIGN DOCUMENT

4.2.1 Document Description

The design-phase aimed to prepare a roadmap for closing the performance gap due to the lack of knowledge and skills. Basically, the design document establishes the line of sight to align the needs, purpose, goals, objectives, strategies and assessment during the implementation of ADDIE process.

Following are the specifications of design document:

- Purpose of the course

- Audience description

- Course objectives

- Learning assessment

- Instructional strategies

- Time schedule

- Course structure description

- Development tools

- Course planner

- Delivery formats and the authoring tools

- Technical and instructional media requirement

- Flowchart of the instructional courseware

- Storyboard

- Implementation plan

4.2.2 Purpose of the Course

Teaching methodology has been considered one of the most important areas in teacher education programs in enabling the prospective teachers to apply teaching principles and techniques in the teaching and learning processes. This course (that has been basically designed for the students of BS Education Program of the International Islamic University, Islamabad) intended to train the prospective teachers so that they would be able to develop a connection between teaching process, methodologies and the instructional practices in the actual classroom situation.

156

4.2.3 Audience Description

The target audience consisted the prospective teachers of the BS Education (7th Semester) of the Department of Education at International Islamic University, Islamabad who already had a background of teaching-learning process and other fields related to the teacher education. However, it was not a pre-requisite to the course. The experience level of the prospective teachers may be heterogeneous—from the standpoint of the backgrounds, education, age, specific skills, learning style, and prior experience—nonetheless, all the teachers were assumed to have the desire to increase their knowledge and/or skills in the area of teaching-learning strategies.

The course was developed to identify the desired behaviors that the learners would be able to perform and to create learning experiences accordingly. The course contained everything that is considered necessary to fulfill the instructional needs of the student and the teacher. The course clearly described the overall purpose and the ways of implementation as it had well-defined features, functions, and step-by-step instructions.

4.2.4 Major Course Objectives

After studying this course, the student will be able to:

1. explain the concept of teaching, teaching process and learning strategies;

2. understand the relationship among different elements of teaching;

3. enhance their observation skills during the teaching-learning process;

4. understand the role of a teacher in the teaching-learning process;

5. select the suitable teaching-learning strategies and the practical classroom settings;

6. select the appropriate teaching strategy according to the nature of the subject matter;

7. develop the appropriate lesson plans according to the nature of the subject matter;

8. select and apply the appropriate instructional technologies in classroom;

9. use the the appropriate class-room management techniques to develop a positive classroom environmnt;

10. reflect on their own practices in order to identify the strengths and weaknesses as well as the problems in their own teaching method;

11. improve their teaching in the light of students' feedback and self-reflections;

12. and, apply various student-centered and teacher-centered teaching strategies.

4.2.5 Learning Assessment

- Formative assessments: pre-test, need assessments, exercises, activities, quizzes, projects and portfolio development

- Summative assessment: post-test and evaluation Performa

4.2.6 Instructional Strategies

It would be an instructor-led course with a blended approach along with interactive modules in a form of courseware. Gagne's Nine Events of Instruction are employed for course implementation accordingly:

Table 4.21

Instructional Strategies

Events	Activities
Gaining attention	Introduction of lesson starting with a case study, story, video, questions, diagram, example to provide a background information about the topic

Informing Objectives	Informing students about the objectives of the session
Recalling the previous knowledge	Asking questions about the previous experiences and pre-requisite concepts
Presenting stimulus	• Presenting the lesson contents by using various teaching methods and strategies • Providing a step by step tutorial • Organizing and checking the contents • Providing the explanations, vocabulary and examples • Using multiple version of the same contents • Using instructional media and technology to address diverse learning styles
Providing guidance	• Demonstrating and showing how to do or create something • Scaffolding-cues, hints, prompts • Modeling appropriate learning strategies, concept maps, role plays • Giving examples and non-examples • Presenting case studies, images and illustrations
Eliciting performance	• Arranging the students' demonstrations and presentations • Doing the practical activities • Doing the revision exercises • Demonstrating learning

Providing feedback	• Giving immediate as well as delayed feedback that include:
	   ▪ Confirmatory feedback
	   ▪ Corrective feedback
	   ▪ Remedial feedback
	   ▪ Informative feedback
	   ▪ Analytical feedback

Assessing performance	• Taking pre-test to assess prerequisite knowledge or skills • Taking post-test to assess mastery of the contents or skills after teaching • Taking tests, quizzes and variety of assessment activities throughout the instruction • Giving assignments for practice • Arranging portfolios

Enhancing the retention and transfer	• Summarizing the contents • Highlighting the important points • Giving examples • Making concept maps or/and outlines • Reference material • drill and practice exercises
Material needed	Multimedia, Computer with CD ROM, Internet, Paper and Pencil

4.2.7 Time

This is a 3-credit hour course; having two equal sessions of 90 minute per week.

4.2.8 Course Structure Description

The course is consisted of eight segments while each segment is designed in the form of a module. Each module has its units and further topics and subtopics. The learners will review material related to the topics. for further concept clarifications they can use web resources as well to have access to extra reading material. After reading the material they will go to the activity for practice and self-evaluation exercises. Some other features of the course include:

- Table of contents

- Unit-wise objective

- Reading material

- References

- Visuals/Graphics

- Videos

160

- Exercises

- Instructor's and Student's Guides

4.2.9 Development Tools

Following tools were selected for course development:

- MS word

- MS PowerPoint

4.2.10 Course Planner

Following is the detailed course planner indicating course title, module tile, unit-wise division of the course contents, course objectives, module objectives, unit objectives, and description of the instructional activities.

Table 4.22

Course Planner

Course Title	Contents	Objectives	Activities
Teaching-learning Strategies and Reflective Practices	Course Introduction Course Goals/ Outcomes	1. Explain the concept of teaching, teaching process and learning strategies. 2. Understand the relationship among different elements of teaching. 3. Enhance their observation skills during the teaching-learning process. 4. Understand the role of a teacher in teaching-learning process. 5. Select suitable teaching-learning strategies during the practical classroom settings.	• The course orientation • Warm-up activities • Class introduction, and • expectations from the course

161

6. Select an appropriate teaching strategy according to the nature of the subject matter		
7. Develop appropriate lesson plans according to the nature of the subject matter		
8. Reflect on their own practices to identify strengths and weaknesses of their teaching method		
9. Improve their teaching in the light of students' feedback and self-reflections.		
10. Apply various student-centered and teacher-centered teaching strategies.		

Table 4.22.1

Module 1 Teacher and Teaching

Title of the	Contents	Objectives	Activities
Module 01: Teacher and Teaching	• Module Introduction • Module Outcomes	Following are the objectives of this module: 1. to familiar the students with the basic concept, principles and characteristics of teaching and teachers; 2. distinguish between the personal and professional characteristics of an effective teacher; 3. explore the ways to become an effective teacher; 4. understand the major roles of a professional teacher;	Each unit contains the following activities based on Gagne's Nine Events of Instruction: • Introductory activity • Informing about the session objectives • PK Activity • Lesson demonstration through an appropriate methodology

		5. describe various responsibilities of a teacher; 6. and, to demonstrate different roles of a teacher.	• Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise • Summary and transition
Unit 1 Concept of effective teaching	1.4 Definition of teaching 1.5 Concept of teaching 1.6 Effective teaching	1. Explain the definition of teaching 2. Discuss the concept of teaching 3. Identify and enlist the components of effective teaching 4. Draw a model of effective teaching	
Unit 2 Main features/chara cteristics of teaching	2.4 Planning and preparation 2.5 The classroom environment 2.6 Instructional professional responsibilities	1. Conceptualize the main features and characteristics of teaching 2. Design planning and preparation documents for the class 3. Create a conducive learning environment in the class 4. Demonstrate effective instructions with students in the class Classify the professional responsibilities of a teacher in various domains	
Unit 3 Characteristic s of an effective teacher	3.1 Personal characteristics 3.2 Professional characteristics	1. Recognize the personal characteristics of the teachers 2. Demonstrate professional characteristics of the teachers	

163

	3. Compare personal and professional characteristics of teachers		
Unit 4 Teaching as a profession	4.1 Concept of profession 4.2 Roles and responsibilities 4.2.1 Code of ethics 4.2.2 Accountability 4.3 Demands and challenges	1. explain the concept of profession 2. Analyze the roles and responsibilities of a professional teacher 3. Interpret and develop a code of ethics 4. Categorize demands and challenges of a professional teacher	

Table 4.22.2

Module 2 Teaching Process

Title	Contents	Objectives	Activities
Module 2 Teaching Process	Module Introduction Module Goals/ Outcomes	Following are the objectives of this module: 1. to explain the process of teaching and its intervening variables; 2. design and apply active learning strategies in the classroom situation; 3. interpret characteristics/princi ples/laws of learning; 4. and, to conceptualize information processing model	Each unit contains the following activities based on Gagne's Nine Events of Instruction: • Introductory Activity • Informing about the session objectives • PK Activity • Lesson demonstration through the appropriate methodology • Practice activities • Readings

		with its application in the real situation.	• Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise • Summary and transition
Unit 1 Process of teaching	1.1 Planning 1.2 Revision 1.3 Assessment 1.4 Implementation	1. Conceptualize the concept about process of teaching and its components 2. Determine planning procedures and goals at different levels of teaching 3. Plan revision of lesson to improve teaching process 4. Develop assessment strategies to evaluate the students' performance	
Unit 2 Variables of teaching	2.1 Variables of the teaching process 2.2 The Transmission Model of Teaching and Learning 2.3 Lowman's Two-Dimensional 2.4 Teaching-Learning Transactional Model of College Teaching 2.5 Groccia's Model for Understanding Teaching and Learning	1. Identify the variables of teaching process that affect the teaching and learning 2. Develop and explain models of teaching processes 3. Compare various models reflecting teaching and learning processes	
Unit 3 Active learning	3.1 What is learning?	1. Explain the concept of learning	

	3.2 Levels of learning	2. Apply the levels of learning in the classroom situation
	3.2 Active Learning Model	3. Draw and analyze active learning model
	3.3 Dale Cone of Experiences	4. Interpret Dale Cone of Experiences
	3.4 Active learning strategies	5. Create active learning strategies
Unit 4 Characteristics/principles/laws of learning	4.1 Readiness	1. conceptualize the laws of learning by developing a concept map
	4.2 Exercise	
	4.3 Effect	2. Design activities according to the laws of learning to conduct in the classroom
	4.4 Primacy	
	4.5 Intensity	
	4.6 Recency	3. Apply laws of learning in teaching-learning process
Unit 5 Information processing	5.1 Basic assumptions	• Understand the concept of Information processing and the basic assumptions about it
	5.2 Computer-mind analogy	
	5.3 The information processing system	• Analyze the Computer-mind analogy
	5.4 Stage model of information processing	• Interpret the information processing system
		• Draw and discuss Stage Model of Information Processing
Unit 6 Teaching and	6.1 Teaching and Learning Process Model	1. Conceptualize the teaching and learning process

learning process	6.2 Context 6.3 Input 6.4 Classroom Processes 6.5 Output	2. Develop a teaching and learning process model 3. explain variables in Teaching and Learning Process Model; such as: context, input, Classroom processes and output	

Table 4.22.3

Module 03: Approaches to Teaching

Unit No.	Unit Title	Practical activity for the unit (Quiz/Assignment/ Presentation etc.)	
Title **Module 03:** Approaches to Teaching	**Contents** Module Introduction Module Goals/ Outcomes	**Objectives** Following are the objectives of this module: 1. to understand the basic concept of the methods and techniques of teaching; 2. distinguish between different methods of teaching (lecture method, classroom method, discussion methods, demonstration method, inquiry, problem-solving, discovery method, assignment and project method); 3. and, apply different methods and techniques of teaching.	**Activities** Each unit contains the following activities based on Gagne's Nine Events of Instruction • Introductory Activity • Informing about the session objectives • PK Activity • Lesson demonstration through the appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback

Unit 01 Concept of teaching methods and strategies	1.1 Andragogy and pedagogy 1.2 Teacher-centered and student-centered teaching 1.3 Matching teaching styles with your students' learning styles	1. Understand the concept of teaching methods and strategies; 2. Differentiate between the concepts of andragogy and pedagogy 3. Compare teacher-centered and student-centered teaching 4. Identify various learning styles	• Unit exercise • Summary and transition
Unit 02 Lecture method	2.1 Concept of Lecture Method 2.2 Application of Lecture Method 2.3 Advantages and Disadvantages of Lecture Method	1. Understand the basic concept of Lecture Method 2. Identify the advantages and disadvantages of Lecture Method 3. Apply Lecture Method in teaching	
Unit 03 Demonstratio n method	1.5 Concept of Demonstration Method 1.6 Steps needed to conduct a demonstration lesson 1.7 Advantages of Demonstration Method 1.8 Disadvantages of Demonstration Method	1. Understand the basic concept of Demonstration Method 2. Identify the advantages and disadvantages of Demonstration Method 3. Apply Demonstration Method in the teaching.	
Unit 04 Discussion method	4.6 Concept of Discussion Method 4.7 Typesof Discussion Method	1 Understand the basic concept of Discussion Method 2 Identify the advantages and disadvantages of Discussion Method	

	4.8 Lesson development 4.9 Advantages of Discussion Method 4.10 Disadvantages of Discussion Method	3	Apply Discussion Method in the teaching
Unit 05 Problem-solving	5.1 Concept of Problem-solving Method 5.2 Problem-solving Cycle 5.3 Techniques for Error Free Problem-solving 5.4 Types of Problems	1 2 3 4	Understand the concept of Problem-solving Method Explain Problem-solving Cycle Apply techniques for error free problem-solving Identify types of the problems
Unit 06 Use of ICT/Computer Assisted Instruction	6.1 Concept of Computer-assisted Instruction 6.2 History of CAI 6.3 Common Categories of CAI 6.4 Advantages of CAI 6.5 Disadvantages of CAI	1 2 3 4	Understand the concept of Computer-assisted Instruction Describe the history of CAI Differentiate the common categories of CAI Identify the advantages and disadvantages of CAI Method.
Unit 07 Project method	7.1 Concept of Project Method 7.2 Phases of Project Method 7.3 Advantages and Disadvantages of Project Method	1 2 3	Understand the basic concept of Project Method Identify the advantages and disadvantages of Project Method Apply Project Method in teaching

Unit 08 Team teaching	8.1 Concept of Team Teaching 8.2 Categories of Team Teaching 8.3 Models of Team Teaching 8.4 Advantages and Disadvantages of Team Teaching	1 2 3	Understand the basic concept of Team Teaching Identify the advantages and disadvantages of Team Teaching Apply Team Teaching
Unit 09 Story telling	9.1 Concept of Storytelling 9.2 Storytelling and intercultural understanding 9.3 Techniques of Storytelling 9.4 Performance skills 9.5 Advantages of Storytelling	1 2 3 4 5	Understand the concept of Storytelling Develop intercultural understanding through Storytelling Apply techniques of Storytelling Demonstrate Storytelling performance skills Identify advantages of Storytelling
Unit 10 Role-play	10.1 Concept of Role-play 10.2 Steps to conduct Role-play 10.2.1 Preparation for Role-play 10.2.2 Conducting the Role-play 10.2.3 Debriefing 10.2.4 Other ways of using role-play techniques 10.3 Key for Success	1 2 3 4	Understand the concept of Role-play Demonstrate Role-play following all the steps of the role-play activities Observe the role of the teacher during the role-play activities Identify the advantages and disadvantages of Role-play

	10.4 The Teacher's Role		
	10.5 Advantages of Role-play		
	10.6 Disadvantages of Role-play		
Unit 11 Micro-Teaching	11.1 History of Micro-teaching	1	Conceptualize Microteaching as a process
	11.2 Concept of Micro-Teaching	2	Plan, design and conduct micro-lesson session
	11.3 Preparation for a micro-lesson session	3	Demonstrate various Teaching skills through the micro-lesson
	11.4 Re-planning, re-presenting and giving/getting the feedback	4	Manage video confrontations during the micro-lesson session
	11.5 Teaching skills	5	Identify the advantages of Micro-teaching
	11.6 Video confrontation		
	11.7 Advantages of Micro-teaching		
Unit 12 Cooperative Learning	12.1 Concept of Cooperative Learning	1	explain the concept of Cooperative Learning
	12.2 Types of Cooperative Learning	2	Elaborate various types of Cooperative Learning
	12.3 Elements of Cooperative Learning	3	Design cooperative learning strategies keeping in view the elements of cooperative learning
	12.4 Cooperative Learning techniques	4	Demonstrate the cooperative learning techniques
	12.5 Advantages		

Table 4.22.4

Module 04: Managing Teaching

Title	Contents	Objectives	Activities
Module 04 Managing Teaching	Module Introduction Module Goals/ Outcomes	Following are the objectives of this module: 1. to identify the learners' needs and characteristics; 2. design lesson plans according to various approaches; 3. understand the need of lesson planning in the teaching and learning situation; 4. and, construct different types of lesson planning (weekly and daily planning as well as unit and course planning).	Each unit contains the following activities based on Gagne's Nine Events of Instruction • Introductory activities • Informing about the session objectives • PK Activity • Lesson demonstration through the appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise Summary and transition
Unit 01 Identifying the learners' needs and characteristics	1.1 Students' personality 1.2 Students' temperament 1.3 Students' self-concept 1.4 Self efficacy 1.5 Students' motivation 1.6 Students' concentration	1. Identifying the learners' needs and characteristics according to their personality, temperament, self-concept and efficacy 2. Understand the students' motivation to apply various motivational techniques of concentration 3. Develop critical thinking skills in the students	

172

	1.7 Students' critical thinking	4. Identify the students' learning styles
	1.8 Students' learning styles	
Unit 02 Approaches to lesson planning	2.1 Forward Design 2.2 Central Design 2.2 Backward Design	1. Conceptualize various approaches to lesson planning 2. Construct lesson plans according to Forward Design, Central Design and Backward Design
Unit 03 Need for lesson planning	3.1 Planning in teaching 3.2 Decisions involved in planning lessons 3.3 Setting learning objectives 3.4 Teaching-learning activities 3.5 Assessment strategies	6. Understand the importance of planning in the teaching 7. Manage the teaching time according to the lesson 3. Draw learning objectives according to Blooms Taxonomy
Unit 04 Types of lesson planning	4.1 Short-term plans 4.1.1 Daily plans 4.1.2 Weekly plans 4.2 Long-term plans 4.2.1 Monthly plans 4.2.2 Yearly Plans	1. Develop short-term and long-term plans according to the requirement of the teaching 2. Develop a scheme of studies to manage the course contents and activities

| 4.2.3 | Scheme of studies | | |

Table 4.22.5

Module 05: Instructional Technologies

Title	Contents	Objectives	Activities
Module 05 Instructional Technologies	Module Introduction Module Goals/ Outcomes	Following are the objectives of this module: 1. To understand the basic concept and importance of the instructional technology; 2. distinguish between the electronic, display and print media; 3. and, prepare and use inexpensive aids for theteaching.	Each unit contains the following activities based on Gagne's Nine Events of Instruction • Introductory Activity • Informing about the session objectives • PK Activity • Lesson demonstration through the appropriate methodology
Unit 01 Instructional technology	2.1 Definition and concept of Instructional Technology 2.2 History of Instructional Technology 2.3 rational of using Instructional Technology	1. Understand the concept of Instructional Technology 2. Analyze the development of Instructional Technology in the historical perspective 3. Conceptualize the importance and need of using	• Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise

			Instructional Technology	Summary and transition
Unit 02 Planning, Selecting, and Using Instructional Technology	3.1 Planning of Instructional Technology 3.2 Selection of Instructional Technology 3.3 Uses of Instructional Technology	1. Plan the suitable instructional technology for teaching and learning 2. Select the appropriate instructional technology for the target students 3. Use Instructional Technology to facilitate teaching and learning process		
Unit 03 Type/kind of instructional technologies	4.1 Electronic (Radio, TV, Projectors and Computers) 4.2 Non-electronic (Boards, Charts, Models, Posters, etc.) 4.3 Print (Books, Journals, Newspapers and Magazines etc.) 4.4 Social Media (Facebook, Tweeter etc.)	1. Identify the types of the instructional technology 2. Differentiate the uses of various instructional technologies according to the teaching-learning situation 3. Prepare the basic visual aids for teaching 4. Evaluate the effectiveness of using various instructional technologies in teaching and learning process		

Table 4.22.6

Module 06: Classroom Management

Title	Contents	Objectives	Activities
Module 06: Classroom Management	Module Introduction Module Goals/ Outcomes	Following are the objectives of this module: 1. to understand the basic concept of management; 2. distinguish between the terms 'management' and 'classroom management'; 3. apply the class-room management techniques to create a positive classroom environmnt; 4. and, describe the importance of classroom decoration to establish effective classroom climate.	Each unit contains the following activities based on Gagne's Nine Events of Instruction • Introductory Activity • Informing about the session objectives • PK Activity • Lesson demonstration through the appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise Summary and transition
Unit 01 Concept of Classroom management	1.1 Classroom management 1.2 Classroom organization 1.3. A Manager vs a Teacher	1. Conceptualize the concept of classroom management 2. Compare classroom management and organization 3. Develop skills as a classroom manager and organizer	

176

Unit 02 Positive class-room environment	2.1 Classroom seating arrangement 2.2 Classroom Climate 2.3 Classroom decoration 2.4 Classroom discipline	1. Identify variables of effective classroom environment 2. Develop positive classroom climate 3. Conceptualize the importance of classroom decoration 4. Develop rules and regulations to maintain classroom discipline
Unit 03 Classroom management styles	3.1 Authoritarian style 3.2 Indifferent style 3.3 Authoritative style 3.4 Tolerant style	1. Explain the types of classroom management 2. Distinguish between different management styles 3. Apply various management styles in the classroom situation 4. Create active classroom management strategies
Unit 04 Managing difficult behaviors	4.1 What is behavior 4.2 Behavioral modification techniques	1. Conceptualize the concept of behavior 2. Apply behavioral modification techniques 3. Design behavioral modification

		activities for the specific purposes	

Table 4.22.7

Module 07: Reflective Practice

Title	Contents	Objectives	Activities
Module 07 Reflective Practice	Module Introduction Module Goals/ Outcomes	Following are the objectives of this module: 1. to understand the meaning and nature of Reflective Practices; 2. describe the process of Reflection; 3. apply major techniques and strategies of Reflection; 4. demonstrate various skills for Reflection; 5. and, evaluate systematic reflection throughout the teaching-learning process.	Each unit contains the following activities based on Gagne's Nine Events of Instruction • Introductory Activity • Informing about session objectives • PK Activity • Lesson demonstration through the appropriate methodology • Practice activities
Unit 1 Meaning and nature of Reflective Practices	1.1 Definitions of Reflective Practices 1.2 Scope of Reflective Practices	1. Conceptualize various definitions of Reflection 2. Understand the concept and scope of Reflective Practices	
Unit 2 Process of Reflection	2.1 Reflection as a process 2.2 The Reflection Cycle	1. Explain the reflection process 2. Observe a reflective process in classroom	• Readings • Diagrams • Visuals • Case studies

178

	3. Analyze the Reflection Cycle	• Reflections
		• Feedback
		• Unit exercise
Unit 3 Major techniques and strategies	3.1 Critical Incident Analysis	1. Identify various Reflective Strategies	• Summary and transition
	3.2 Reflective Learning Journals	2. Design activities to implement Reflective Practices in the classroom	
	3.3 Peer Coaching	3. Apply different types of Reflective Practices in the classroom	
	3.3 Action Research		
	3.4 Portfolios as a source of Reflection		
	3.5 Skills for Reflection		
	3.6 A systematic reflection throughout the teaching-learning process		

Table 4.22.8

Module 8 Models of Reflective Practices

Title	Contents	Objectives	Activities
Module 8 Models of Reflective Practices	Module Introduction Module Goals/ Outcomes	Following are the objectives of this module: 1. to understand the Models of Reflective Practices; specifically, Schon's Model, Gibbs's Model, Kolb model and Johns Ten "Cs" Model; 2. differentiate and compare different	Each unit contains the following activities based on Gagne's Nine Events of Instruction • Introductory Activity • Informing about the session objectives • PK Activity

		Models of Reflective Practices; 3. and, apply the Models of Reflective Practices according to the classroom situations.	• Lesson demonstration through the appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise • Summary and transition
Unit 1 Schon's Model	1.1 Model description 1.2 Components of the model 1.3 Application of the model	1. Conceptualize Schon's Model of Reflection 2. Differentiate and compare Schon's Model of Reflection from the other models 3. Apply Schon's Model of Reflection in the classroom situations	
Unit 2 Gibbs's Model	2.1 Model description 2.2 Components of the model 2.3 Application of the model	1. Conceptualize Gibbs's Model of Reflection 2. Differentiate and compare Gibbs's Model of reflection from and with the other models 3. Apply Gibbs's Model of Reflection in the classroom situations	
Unit 3 Kolb Model	3.1 Model description 3.2 Components of the model 3.3 Application of the model	1. Conceptualize Kolb Model of Reflection 2. Differentiate and compare Kolb Model of reflection from and with the other models 3. Apply Kolb Model of Reflection in classroom situations	
Unit 4 Johns Ten "Cs" Model	4.1 Model description	1. Conceptualize Johns Ten "Cs" Model of Reflection 2. Differentiate and compare Johns Ten	

4.2 Components of the model	"Cs" Model of Reflection from and with other models	
4.3 Application of the model	Apply Johns Ten "Cs" Model of reflection in the classroom situations	

4.2.11 Delivery Formats and Authoring Tools

The modules were developed in a courseware format that can be uploaded online or burned in CD format according to the learners' comfort with delivery channels. The technical complexity of the course is basic because the focus was on learning instead of technical difficulties as per the needs of the students and the requirements of the course. Keeping in view the internet connectivity issues or electricity shortfalls, alternatives were also arranged for undisrupted learning process with easy access. Basic software MS Office, MS Word and MS PowerPoint were used to develop interactive courseware/modules to make the experience user friendly for the students.

4.2.12 Technical and Instructional Media Requirements

Following table reflects some of the technical and instructional media requirements of the course:

Table 4.23

Technical/Instructional Media Requirements of the Courseware

Hardware	Software
- Computer systems, laptops - CD ROM - Multimedia - Speakers or Headset - Internet - Multiple copies of CDs	- Operating system, Windows 2010, XP - Internet Explorer, Mozilla Firefox, - Flash Player, Window Media Player, Real Player - Adobe Acrobat Reader, MMB, Photoshop - MS Office 2007 - Slide Presentation with Graphics

Other Requirements

- Course guides
- Modules
- Readings
- Paper and pencil,
- Worksheets,
- Material for other activities

Organizational Requirements

- Furniture
- Classroom
- Whiteboard
- Computer lab

4.2.13 Flowchart of Instructional Courseware

```
┌───────────┐     ┌──────────────┐     ┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│ Cover page│ ──▶ │ Instructions │ ──▶ │    Course    │ ──▶ │    Course    │ ──▶ │    About     │
│           │     │              │     │ description  │     │  objectives  │     │  Courseware  │
└───────────┘     └──────────────┘     └──────────────┘     └──────────────┘     └──────────────┘
                                                                                        │
                                                                                        ▼
                                                                                 ┌──────────────┐
                                                                                 │ Contact and  │
                                                                                 │  assistance  │
                                                                                 └──────────────┘
                                                                                        │
                                                                          ◇             ▼
                                                                                 ┌──────────────┐
                                                                                 │    Course    │
                                                                                 │   Contents   │
                                                                                 └──────────────┘
```

| Module 1 | Module 2 | Module 3 | Module 4 | Module 5 | Module 6 | Module 7 | Module 8 |

| Title page | Icon guide | Module intro | Module objectives | Module contents |

| Unit 1 | Unit 2 | Unit 3 | Unit 1 |

| Unit outline | Unit intro | Unit objectives | PK Activity | Topic content | Practice activities | Instructions /feedback |

| Video clip | | | Readings | | Unit exercise |

| Summary & transition |

| References |

Figure 4.1

183

This flowchart shows the overall organizational design of the instructional module/courseware and division of the course segments into modules and unites. In total eight modules were designed under the course of Teaching-Learning Strategies and Reflective Practices. Each module was further divided in multiple unites. The number of units varies in each module as it shown in detail in the instructional plan. The segments included in a unit can also be seen in the flowchart.

4.2.14 Storyboard

Storyboard is a document that describes all the components of final interactive lessons to review the contents as well as the selection of instructional technique. It also determines the sequence of lessons specifying which element would appear in each of the screen. In order to design this course/module a storyboard was developed as an initial phase of course planning in which every detail of a slide or frame was decided with written notes and procedures and reviewed to make the necessary amendments. A careful development of storyboard is very important to avoid mistakes in the later stages because only at that stage changes could be made but, once it passes through that it can be very hard and sometimes impossible to change it.

4.2.15 Implementation Plan

The course was implemented according to the instructional plan on the 20 students of BS Education (7th Semester) of the Department of Education at International Islamic University, Islamabad from the start of the regular semester. Arrangements were made according to the requirements of instructional plan to avoid any inconvenience to the students and instructor. Arrangement of multimedia was ensured while the students were

required to bring their laptops in the classroom. A few sessions had to be conducted in the Computer Lab as it was required. The timetable of each of the sessions was designed and followed according to the instructional plan.

4.2.16 Design Document Summary

Based on the results of the needs-assessment a design document was prepared. The design document was meant to provide a work-plan of the instructional specifications— based on which the instructional modules/courseware were developed. In order to formulate the design document for the present study, first, the purpose of the course was described that led to developing the course objectives and course outline. The description of the target audience was also given to introduce the participants of the study. The objectives of the course, module and unit were determined and designed keeping in view the instructional analysis from the previous phase. The instructional strategies as well as the assessment strategies were also designed according to the Gagne's events of instruction. The course structure was designed in the form of modules where each module was divided in many units. The specifications were also included along with the contents; such as: the reading material, videos, activities, assessment exercises and unit summary. As a result, a detailed course plan was devised having course title, module titles (with unit-wise division along with the objectives) and instructional procedure. The authoring tools for the courseware development and its requirements were determined. A flowchart and a storyboard were also designed to convert the instructional modules into a courseware. Finally, an implementation plan was prepared to ensure the smooth implementation of the instructional modules/courseware.

185

4.3 DEVELOPMENT DOCUMENT

Development is a phase of Generating and validating the learning resources. At the end of the development-phase, the instructional designer should be able to develop learning resources that were identified in the previous phases. The common procedures that adopted in the development-phase included:

- Production of contents in the form of modules
- Development of the courseware
- Selection or Development of Supporting Media
- Generating the user manual
- Conducting Formative Revisions
- Conducting a pilot test

4.3.1 Module Development

The contents development is a process of collecting and writing all the required knowledge and information. In this study, contents were developed in the form of modules while applying Gagne's Nine Events of Instruction. The contents specifications included the following:

- Course description
- Course objectives
- Course outline
- Module-wise breakup
- Module objectives

186

- Unit-wise breakup

- Unit objectives

- Beginning activities/motivational tasks/gaining attention

    o Introductory activities/warm-up

    o Clarification of the objectives

    o Confirmation of the pre-requisites

- Middle activities

    o Demonstrations, role-play, simulations...

    o Guided practice

    o Independent practice

    o Feedback

    o Assessment

- Ending activities

    o Debriefs, Transitions, Revision and Summaries

- Instructional strategies

- Lesson plans

4.3.2 Development of Courseware

Educational media was selected and developed to enhance the quality of teaching as well as to present and reinforce essential knowledge and skills and to accommodate various learning styles i.e. visual, auditory, and kinesthetic. It was based on the context and expectations of the learners, the performance conditions i.e. the instructional objectives, the available resources, the prevalent teaching and learning culture and its practicality. The

modules were developed in the form of a courseware for the students. The courseware development is a process that involves developing media and interactive components as well as producing various formats of a CD for web delivery. Following were the courseware specifications:

4.3.3 Course Interface
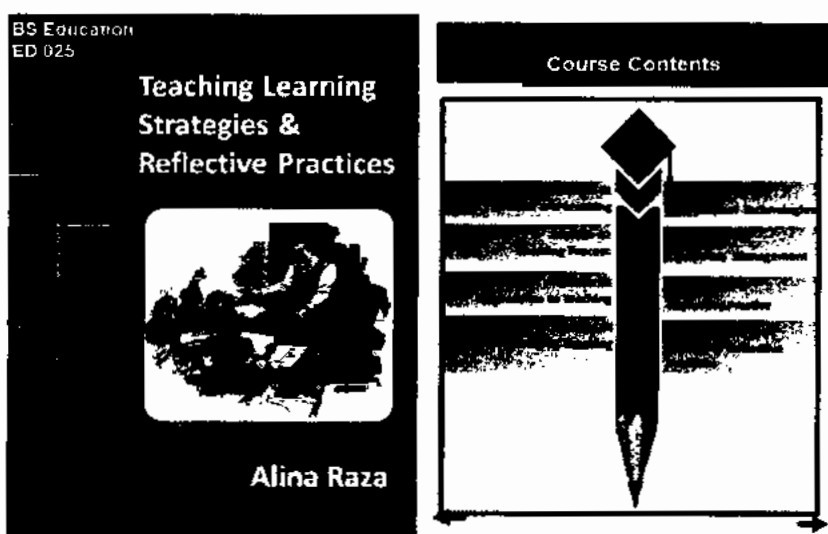
Fig 4.2

A graphical user interface was designed in order to make the courseware easy, efficient, and enjoyable simple i.e. user friendly and attractive. The course interface included the course title, modules hyperlinks, background music, navigation buttons (to precede back and forth), instructions and the related information. The format and sequence of the module were followed in the courseware development as given.

4.3.4 Text Material
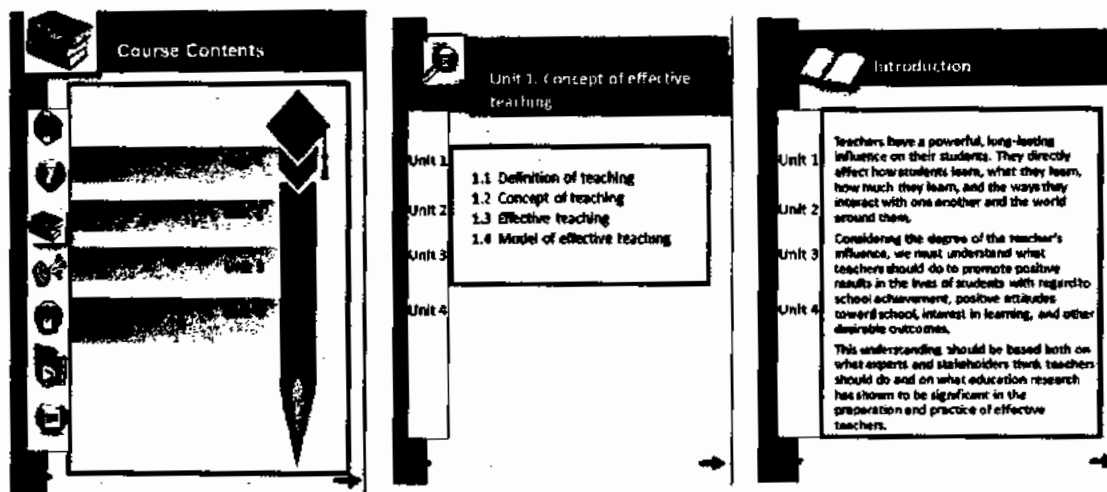
Fig. 4.3

An important component of the courseware was the presentation of the text material in an easy and understandable manner. Fig 4.3 shows how the material was organized and presented in the courseware. The course contents were divided into units, topics and sub-topics. A detailed description related to each topic is also given.

4.3.5 The Reading Materials

The recommended books and further a list of further readings in the form of PDF, Word Documents or/and Hyperlinked are included with each topic to provide enough details on a particular concept.
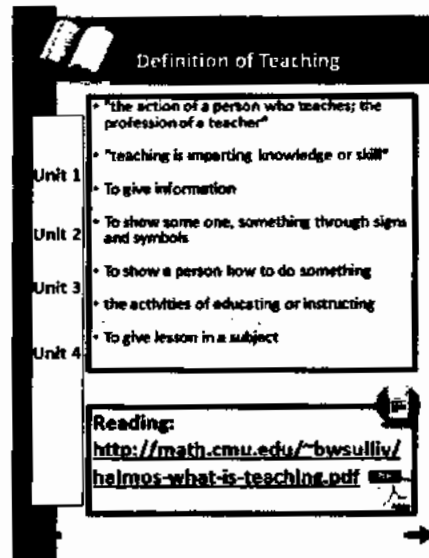
Fig.4.4

4.3.6 Activities and Exercises
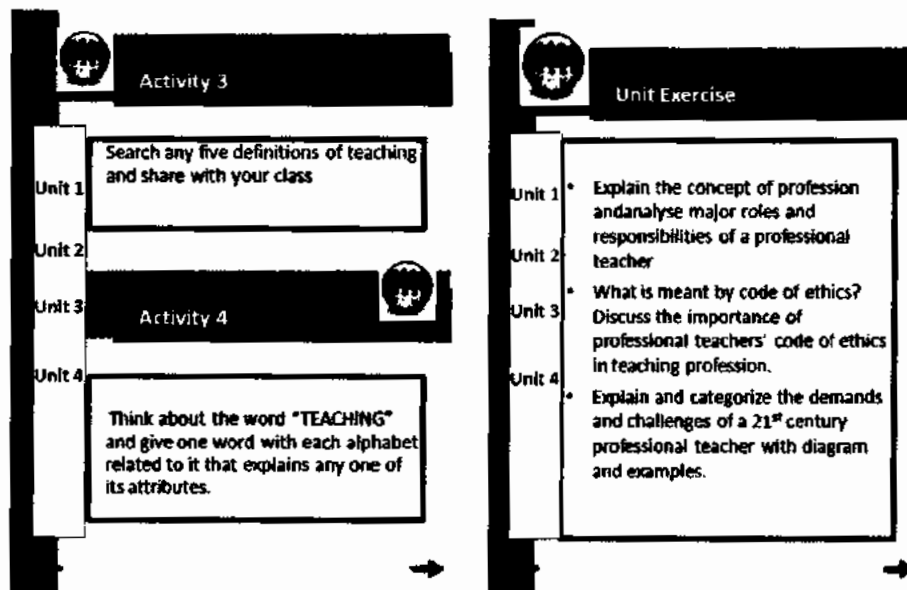
Fig. 4.5

All the units and exercises include the objectives and nature of the topics. The instructions along with each activity were given for the purpose of accuracy and to ensure that the activities yield results.

190

4.3.7 Visuals/Graphics/Images
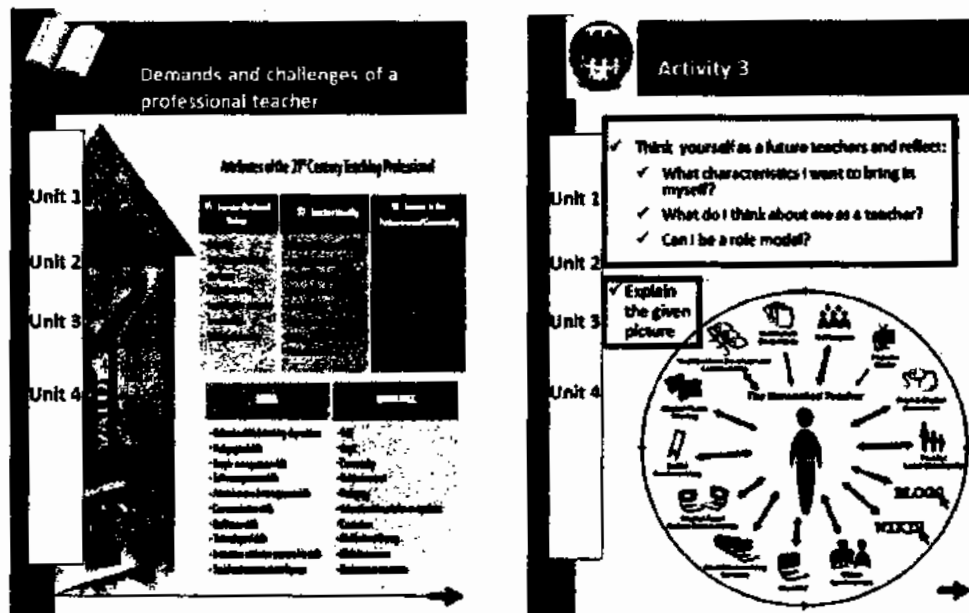
Fig 4.6

The graphics and visuals are important to make the process of teaching and learning interesting as well as understandable for the students. The use of the graphics, images, visuals and diagrams was made according to the requirements of each concept.

4.3.8 Animations

The use of animations is another important aspect that can help enhance students' interest in a courseware. In the present study animations and simulations were collected from various sources and included in in the courseware so as to help generate the students' interest as well as to have some fun in the learning.

4.3.9 Presentations

The presentations made on MS PowerPoint were included as a reference material on various topics for better conceptual clarity of students.

191

4.3.10 Videos
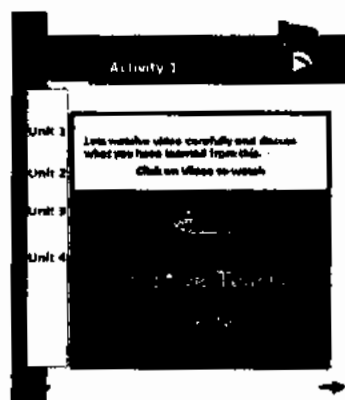
Fig. 4.7

Relevant educational videos in the compatible formats were also included in the courseware to help grasp students' attention and to have better understanding of the concepts.

4.3.11 The Audio Files

The audio files were also inserted in the form of the background music, instructions and important announcements.

4.3.12 Hyperlinks and Navigation

Fig 4.8

192
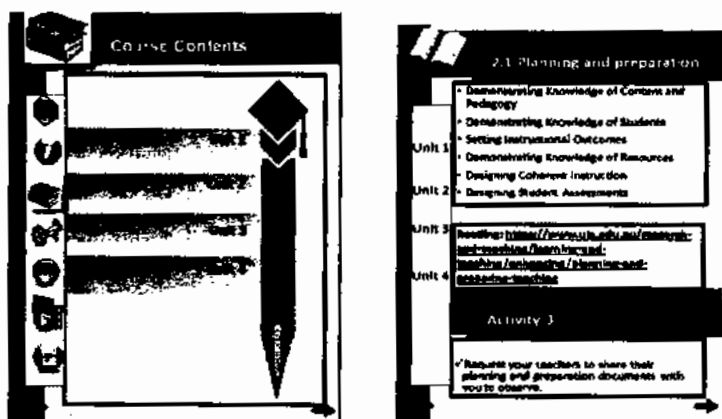
Another important component of a courseware is providing hyperlinks as they help in the navigating in the system. In the present study too, important hyperlinks are inserted throughout the courseware in the form of back and next buttons, text hyperlinks, icons and web-links in order to make the courseware more user friendly.

4.3.13 Icons and Symbols
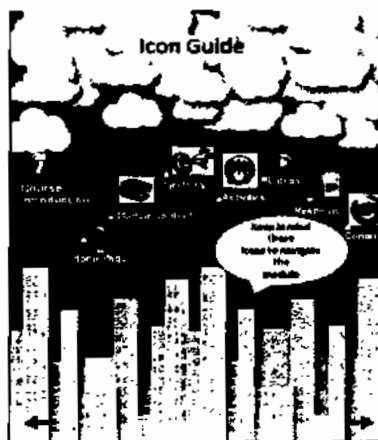
Fig. 4.9

Logical use of icons and symbols was used throughout the courseware so that the users would be able to use it conveniently.

4.3.14 Choice of the Color and Font Palette

The choice and use of color scheme are also of much importance in developing instructional material as colors can be used to grasp audience attention and to compare, contrast and differentiate various concepts according to the requirement of the course. The color scheme in the development of this courseware was taken into consideration keeping in view the aspects; such as, the level of students and the nature of the course, etc.

4.3.15 The References

The references were provided at the end of each model for the students to access the actual source of material if required as well as to acknowledge the authors and to avoid plagiarism.

4.3.16 User Manuals

A comprehensive set of directions is important to implement any courseware accurately for the users including the teachers and students. In this study a detailed user manual was prepared for each instructional episode and independent activities to facilitate the students as well as the teachers. The purpose of the user manual was to offer guidance to the teacher to interact with the students during the course of the instructions as well as the students as independent learners.

4.3.17 Supporting Material

The courseware also included the following supporting material for the purpose of fulfilling the requirements of the course on Teaching-Learning Strategies and Reflective Practices which this study was based upon.

- Handouts and lecture notes
- Presentations
- Documented case studies
- Illustrative material i.e. pictures, graphs, tables
- Training material, self-study guides, web guides
- Worksheets

194

- Reference books and material

- Other supporting tools

4.3.18 Pilot Test

The product of development-phase was a prototype courseware pilot-tested on the students to ascertain the practicality, feasibility and error free functionality of the courseware on a small scale in a real time environment. The trial was conducted on 20 students of BS Education of the Department of Education at International Islamic University, Islamabad to check if there were any issues or problems and to get a better insight before the actual implementation on a large scale for the purpose of the study. The first module was tested in two consecutive sessions. The formative revisions were made into the courseware keeping in view the result shown in the pilot test.

4.3.19 Development Document Summary

A development document meant to report the process of developing the instructional modules and courseware was developed. First, the eight instructional modules were developed in a word document. Secondly, the instructional modules were converted into the courseware by using specified authoring tools as discovered in the previous phase. A supporting material for this purpose was also developed having a user manual and a course guide. The courseware was developed according to the instructional plan, flowchart and storyboard; that included: the course interface (with navigation buttons), hyperlinks, reading material, activities, exercises, images, videos and presentations. The first module was pilot tested which aimed at making the formative revisions and modifications—based on which the actual implementation of the prototype was carried out.

4.4 THE IMPLEMENTATION DOCUMENT

The study also included preparing an implantation document. The purpose of the implement-phase was to streamline the activities for the implementation of the courseware in order to engage the students in creating a learning environment. The basic objective behind that was that upon the completion of the implementation-phase, the students would be able to move to the actual learning environment where they could begin to construct the new knowledge and skills required to close the performance gap. The implement-phase was the culmination of developmental activities and completion of the formative evaluation. The implementation-phase resulted into an implementation strategy—wherein the procedures were adopted to ensure the effective functionality of all the systems and maintenance of the institutional support for the successful implementation of the course. A fully functional course requires continuous support and maintenance to prepare the learners for the job performance requirements. Therefore, a checklist was developed to make sure the availability of all resources and to ensure the functionality of all the available equipment in order to manage, administer, support, and deliver the instructions. Following procedures were adopted in the implementation stage:

4.4.1 Prepare the Teacher

In the implementation-phase the course developed was implemented on the selected students according to the plan. In order to provide effective instructions and ensure successful course implementation it is essential to conduct training sessions for the course instructors/teachers as well as they are the ones responsible for the successful implementation of the courseware. As this course was taught by the researcher herself,

therefore, training of the instructor was not required. However, the user manuals (Appendix A), guides (Appendix B) and support material were designed to facilitate the instructors for future use.

4.4.2 Preparing the Students

The preparation of the students before the initializing of any course is necessary to get the desirable outcomes. First, the identification of the target audience/participants was done for the course. The purpose of the identification component is to confirm the following:

- The students' preferred learning styles
- The students' prerequisite knowledge and skills
- The recruitment strategies

4.4.3 Learning Styles

Learning styles inventory (VAK) was administered to check the students' preferred learning styles as determined in the needs-analysis-phase so that the course was designed accordingly.

4.4.4 Student Prerequisite Knowledge and Skills

A pre-test was taken to check the students existing knowledge about the concepts in order to get help in the module contents development.

4.4.5 The Recruitment Strategy

The recruitment strategy for this course was adopted according to the university's rules of course registration. The course was a part of BS Scheme of Studies which was

197

offered regularly in the 7th Semester of BS Education at International Islamic University, Islamabad. Therefore, all the students who joined the 7th Semester registered the course.

4.4.6 Schedule

Twenty (20) students of BS Education (7th Semester) were the participants of the course. The schedule of the classes was designed keeping in view the instructional plan to avoid any mismanagement during the implementation-phase.

4.4.7 Pre-course Communication

Before the formal beginning of the course, a few pre-course communication sessions were arranged in which an overview of course and course objectives were discussed with the students. Then, the needs-analysis questionnaire was administered to analyze the students' needs, requirements and expectations from this course. A learning style inventory to determine the students' preferred styles of learning and a pre-test were also administered during those sessions.

4.4.8 Integration and Test Courseware

First, the courseware had to be tested in the actual classroom environment in order to ensure the proper functionality of all its components before its final launch for the students. All the instructional elements of the courseware i.e. hyperlinks, websites, e-documents and presentations were tested to avoid if there were any problems and malfunction during the implementation of the actual teaching experience.

4.4.9 The Course Orientation Session

In the first session of the course an orientation session was arranged to share with the students the course goals, objectives, course planner, course assessment and evaluation as well as the details about the overall course activities throughout the semester. A few warm-up activities were also conducted according to the instructional plan.

4.4.10 Regular Classes

Regular classes according to the prescribed timetable of the Department of Education were carried out throughout the semester. All the instructional activities were organized according to the instructional plan.

4.4.11 Implementation of the Instructions

The course was implemented according to the instructional plan and modules designed according to the Gagne's Nine Events of Instruction. The course outline, courseware and the related material were distributed among the participants. Students experienced the course of teaching learning strategies through the courseware/instructional modules throughout the semester. The one group pre-test post-test design was used keeping in view the requirement of the experiment. The threats of internal and external validity during the experiment were also considered. The duration of experiment was six months therefore the threat of history and maturity was controlled. Researcher biasness in selection of participants was also controlled because all students enrolled in BS Education (7th Semester) registered in the course of teaching and learning strategies were taken as sample of the study. The threat of testing was also controlled because pre-test and post-test was not same. The pre-test was designed to check students' previous knowledge about the

concepts at basic level but post-test was designed based upon the concepts at advanced level. The threat of instrumentation was also controlled because the instruments used were carefully validated, administered and scored by the same researcher. At the time of experiment only 20 students were enrolled in BS Education 7th semester that was considered as the limitation of that experiment/tryout. As the sample had representation of geographic, cultural and academic diversity, it was expected that sample would be generalizable to the other universities as well.

Table 4.24

Events of Instruction Plan

Events	Strategy
Gaining attention	Introducing the lesson—starting with a case study, story, video, questions, diagram, and example to provide a background information about the topic
Informing objectives	Informing the students about the objectives of the session
Recalling the previous knowledge	Recalling the questions about the previous experiences and understanding of the previous concepts
Presenting stimulus	- Presenting the lesson contents by using various teaching methods and strategies - Providing step by step tutorial - Organizing and content chunking - Providing explanations - Present vocabulary - Providing examples - Using the multiple version of the same contents - Using a variety of media to address different learning preferences
Providing guidance	- Demonstrating how to do or create something - Providing scaffolding-cues, hints, prompts - Applying models and varied learning strategies—mnemonics, concept mapping, role playing, visualizing - Giving examples and non-examples - Using case studies, analogies, visual images and metaphors

200

Eliciting performance	• Doing demonstrations by the students • Arranging practical activities • Doing revision exercises • Demonstrating learning
Providing feedback	• Giving immediate feedback
Assessing Performance	• Using a pre-test for the mastery of prerequisites • Using a pre-test for the endpoint knowledge or skills • Conducting a post-test to check for mastery of the contents or skills • Embedding questions or quizzes throughout the instruction • Giving the assignments for practice
Enhancing retention and transfer	• Paraphrasing content • Generating examples • Creating the concept maps or outlines • Doing drilling and practice exercises
Material needed	Multimedia, Computer with CD ROM, Internet, Paper and Pencil

4.4.12 Feedback

Feedback is another important aspect for the success of any course. In the present study the following mechanism of feedback was adopted by instructor during the course implementation to ensure getting the feedback at various stages, that included:

- During the activities and exercise in the class

- At the end of each unit

- Written feedback on the assignments

4.4.13 Conclusion

At the end of each unit a section was designed i.e. Summary and Transition to highlight the important points of the lecture and to do the revision of the topics.

4.4.14 Formative Assessments

Each unit contained activities and unit exercises to engage the learners to evaluate the learning outcomes on a regular basis. For that purpose, variety of activities were designed according to the unit objectives in order to achieve the course outcomes. The supporting material according to the nature of each activity was provided to the students. In this regard, clear instructions were also provided for the smooth management of learners' activities in the classroom as well as in for the procedures related to the submission of the assignments and meeting the deadlines of projects. Each student was asked to prepare and keep at hand a course portfolio to maintain all the record of the class activities as well as the overall learning progress.

4.4.15 Summative Assessment

A post-test was also taken at the end of the semester for the final evaluation of the course. The post-test comprised of fifty (50) multiple choice questions covering all the aspects of course outline.

4.4.16 The Course Evaluation

At the end of the course, a course evaluation performa was administered to get the feedback from the students about the following aspects of the course:

- Teaching methodology
- Course design
- Learning environment
- Use of instructional technology in the classroom

- Motivation and attitude

- Feasibility/Usability of interactive courseware/module

  o Course design

  o Quality of the contents and coverage

  o Overall experiences

4.4.17 Implementation Document Summary

Implementation document involved reporting the process of the actual course delivery. An orientation session for the students and teacher regarding the course delivery was also arranged as discussed in the document. VAK course inventory was administered to identify the learning styles of students. A pre-test was also administered to check the existing knowledge level of students. The participants of the study were the students of BS (7th Semester) of the Department of Education at International Islamic University, Islamabad enrolled for the course of Teaching Learning Strategies and Reflective Practices. A detailed procedure of the courseware implementation according to the events of instructions was prescribed in successive steps. A procedure to ensure giving feedback to the students for the formative and summative assessment was also reported. A post-test was also administered to check as to what extent the students had been able to understand the course. At the end, a course evaluation form was administered for the overall course evaluation.

4.5 THE EVALUATION DOCUMENT

The evaluation-phase was the last phase in ADDIE in which the effectiveness of the courseware/modules was evaluated.

4.5.1 The Evaluation Criteria

In the first phase of the evaluation, the criteria of the evaluation of the courseware/modules were determined in order to measure the extent to which the courseware and the approach had been successfully implemented and achieved its objectives.

- Teaching methodology through the courseware/modules

- Overall course design

- Students' learning

- Motivation and attitude

- Learning environment

- Recommendations

- Feasibility/Usability of the Interactive Courseware/Module

  - o Course design

  - o Quality of the contents and coverage

  - o Overall experiences

4.5.2 Instruments for Data Collection

Based on the above mention criteria, following instrument were designed for the data collection as a part of the evaluation-phase.

- Post-test

A multiple choice (having 50 items) post-test was administered to check the learning outcome of students at the end of the course.

4.5.3 The Course Evaluation Form

A detailed course evaluation form was designed according to the above mention criteria to gather the required data. The course evaluation form was administered by the teacher upon course completion.

4.5.4 The Data Analysis

The data obtained from the pre-test and post-test was analyzed by applying paired sample t-test, while, the data collected through the course evaluation form was analyzed through percentage.

4.5.5 The Pre-test and Post- test Table

After the completion of the implementation-phase, pre and post-tests' results were compared in order to analyze the effectiveness of the courseware/modules. A paired sample t-test was used to compare the scores of pre and post-test results.

Table 4.25

The Pre-Post Tests' Mean Scores

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pretest	25.30	20	5.121	1.145
	posttest	33.70	20	5.583	1.248

Table 4.25 reflects the mean score of pre-tests (M=25.30) and post-tests (M=33.70) with Std. Deviation of pre-test (SD=5.12) and post-test (SD=5.583)

205

Table 4.25.1

Paired Sample t Test

		t	df	Sig. (2-tailed)
Pair 1	pretest – posttest	-6.890	19	.000

The table 4.25.1 depicts the paired sample t-test which reflects that significant difference was found in the scores of the pre-test (M=25.30) and for the post-test (M=33.70); where the t value is t (19) = -6.890, p = .000." The Sig. (2-Tailed) value is .000. The results of table show a significant difference between the mean of the pre-test and the post-test results which lead us to conclude that the students' performance improved significantly after learning with the courseware/modules. The results, therefore, show that the technique applied proved useful and that the implantation of the courseware was successful in the given context.

4.5.6 The Analysis of Course Evaluation Form

This course evaluation form was administered to evaluate the feasibility/usability of the course and overall experiences in the course of Teaching-Learning Strategies and Reflective Practices.

Table 4.26

The Course Evaluation (Teaching Methodology)

	Section B: Learning experience (teaching methodology)	Disagree	Neutral	Agree
1.	Before the beginning the lecture, the teacher tried to capture attention by using various techniques.			100%

Section B: Learning experience (teaching methodology)	Disagree	Neutral	Agree
2. Effectively introduced the topic			100%
3. Outlined the objectives (i.e. introduced the aims and objectives of every session/topic)			100%
4. Connected the previous knowledge of the learners with new information to help them understand the new concepts		10%	90%
5. Delivered the lectures in an organized and coherent way		10%	90%
6. Contextualized the contents (connected the contents to real life situation)			100%

The table 4.26 reflects the results obtained from the course evaluation according to which all respondents (i.e.100%) agreed that before the beginning the lecture, the teacher tried to capture the students' attention by using various techniques, effectively introduced the topic, and outlined the objectives. While, 90% and 100% respondents respectively reported to agree that the teacher connected their previous knowledge with the new information to help them understand the new concepts and delivered the lectures in an organized and coherent way keeping in view the contents and the context.

Table 4.27

The Course Evaluation (Teaching Techniques)

The teacher demonstrated/applied the following techniques/ methodologies to make the topic understand:	Disagree	Neutral	Agree
a. Lecture			100%
b. Discussion			100%

207

c.	Demonstration		30%	70%
d.	Problem-solving		35%	65%
e	Project method		25%	75%
f	Simulation and games	10%	35%	55%
i	Storytelling		0.5%	95%
j	Role-play		20%	80%
k	Computer assisted instruction		05%	95%
l	Group work and collaborative learning activities			100%

The table 4.27 depicts the course evaluation results in terms of teaching techniques applied in the course. The results showed that all (100%) respondents followed by 70%, 65%, 75%, 55%, 95%, 80%, 95%, and 100% respectively reported to agree that the teacher used variety of teaching methods including lecture, discussion, demonstration, problem-solving, project method, simulation and games, storytelling, role-play, computer assisted instruction, group work and collaborative learning activities in the classroom during the course implementation as per the statistics given above.

Table 4.28

The Course Evaluation (Teaching Methodology)

	Section B: Learning experience (teaching methodology)	Disagree	Neutral	Agree
7.	Provided clear guidelines to do the assignments			100%
8.	Provided an opportunity of drill and practice in the class for better conceptual clarity			100%

No.				
9.	Provided a timely feedback	10%	10%	80%
10	Conducted quizzes and exercises on regular basis to access the learning outcome	10%	10%	80%
11.	Provided the reference material and other supporting tools to enhance the learning		.	100%
12.	Concluded every lecture by revising important points			100%
13.	Used visual material and illustrations			100%
14	Provided examples to explain the topic			100%
15	Engaged learners by making the class interactive		10%	90%
16	Provided individualized instructions as per my style and pace of learning		10%	90%
17	Used blended learning approach (i.e. computer based as well face-to-face) effectively to make the learning effective		10%	90%

The table 4.28 further illustrated the already obtained results about the teaching methodologies used in the course. The results showed that all (100%) respondents followed by 55%, 80%, 55%, and 100% respectively reported their agreement regarding: provision of clear guidelines for the assignments, giving the learners the opportunities of drill and practice, providing timely feedback, arrangement of regular assessment of the learning outcome through the quizzes and exercises, provision of the reference material and other supporting tools on the part of the teacher to enhance their learning experience. The results showed that all (100%) respondents were found to agree thate very lecture was concluded by revising the important points, while, 90% reported that the visual material, illustrations,

209

examples, engaging learners by making the class interactive, individualized instructions and blended learning approach was effectively used to make the learning productive.

Table 4.29

Course Design

Section C: Experience of the learning (Course design)	Disagree	Neutral	Agree
1. The contents were easy and understandable.			100%
2. Every new concept was initiated with an introduction to grab the learners' attention.			100%
3. The material met its objectives.			100%
4. The contents have had practical relevance.			100%
5. Each component connected the previous knowledge to help the students understand the concepts.			100%
6. The course was organized.			100%
7. The course included the guidelines for different tasks and activities.			100%
8. The course provided with an opportunity of drill and practice.			100%
9. The course provided the feedback on various tasks.		20%	80%
10. The course has had plenty of quizzes and exercises.		10%	90%
11. The course recommended reference material and supporting tools.			100%
12. The course was supported by variety of visuals and illustrations.			100%

13.	The course was supported by variety of examples.	100%
14.	The course was interactive to engage the learners.	100%
15.	The course has had the provision for individualized instructions.	100%
16.	The course involved blended learning approach (i.e. computer based as well face-to-face) to make the learning interesting.	100%

The table 4.29 presents the course evaluation regarding the course design. The results revealed that all (100%) respondents reported to agree to all the aspects of the course design which included these: the course contents were easy and understandable, every new concept was initiated with an introduction, the material met its objectives, the contents had had practical relevance, each component connected the previous knowledge, the course was organized, it included the guidelines for different tasks and activities and that it provided with an opportunity of drill and practice. According to the results reported 80% respondents followed by 90% and 100% respectively agreed that the course provided the feedback on various tasks, had plenty of quizzes and exercises, recommended reference material and supporting tools, was supported by variety of visuals, illustrations and examples, was interactive, had the provision for individualized instructions and involved the blended learning approach.

211

Table 4.30

Learning Environment

	Section D: Learning Environment	Disagree	Neutral	Agree
1.	Do you think that the environment of the class was flexible enough to help you learn better?			100%
2.	Have you experienced a friendly environment during this course?		10%	90%
3.	The class was more integrative to help learn better.			100%
4.	The seating arrangement was according to the needs and requirements of the class.	10%		90%
5.	Do you think that class had a traditional look—where teacher was standing on a higher podium?	65%	20%	15%
6.	The teacher used to walk around to engage the students in the learning process.		10%	90%
7.	Do you think the use of audio-visual aids helped in creating better classroom environment?		0.5%	95%
8.	Do you think that the environment of the class was flexible enough to help you learn better?			100%
9.	An interesting initiation on the part of the teacher not only helped catching students' attention but also helped setting up a friendly environment for the learning.			100%
10.	Teacher's encouraging attitude towards the students' questions helped in making the environment better for the learning?			100%

11.	Holding quizzes and doing exercises helped create a better environment of leaning.	10%	90%
12.	Do you think providing reference or/and reading material helped in creating a competitive environment in the class?		100%
13.	Splitting the students into smaller/bigger groups helped in creating good learning environment.		100%
14.	Individual attention given to students by the teacher contributed in making better learning environment.		100%
15.	Do you think computer-based learning helped build better environment in the class?		100%

The table 4.30 depicts the results of the course evaluation regarding the learning environment during the course. The results showed that all (100%) respondents informed to agree that the environment of the class was flexible enough to learn better, while, 90%, followed by 100% and 65% respondents respectively responded to agree that they experienced a friendly environment in the course, the class was more integrative to help learn better, seating arrangement was according to the needs and requirements of the class and the teacher would walk around to engage the students in the learning process. The results also showed that 65% respondents disagreed that the class had a traditional look, while, 95% and 100% respondents respectively agreed that the use of audio-visual aids helped in creating better classroom environment and that the environment of the class was flexible enough to learn better. The results disclosed that all (100%) respondents agreed that an interesting initiation on the part of the teacher helped catching students' attention

213

and setting up a friendly environment for learning and that teacher's encouraging attitude towards the students' questions helped in making the environment better for learning. While, 90% followed by 100% respondents (in response to every other question) reported to be agreed that holding quizzes, exercises, providing reference or/and reading material in the class, splitting the students into smaller/bigger groups, giving individual attention and encouraging computer-based learning helped build a competitive and far better learning environment in the class.

Table 4.31

Motivation

	Section G: Motivation	Disagree	Neutral	Agree
1.	Do you think taking part in this course was an interesting and motivating experience for you?			100%
2.	Do you think that including the components of self-study helped you learn better?			100%
3.	Do you think including interactive exercises/activities helped in making the course interesting?		10%	90%
4.	Do you think the course was challenging for the students of BS (Education) at the 7th Semester?		20%	80%

The table 4.31 reflects the results about the motivation of the students after having attended the course. The results manifest that all (100%) students agreed that taking part in the course had been an interesting and motivating experience and that the components the self-study that were included in the course helped learn better. While, 90% and 80% respondents respectively reported that the interactive exercises/activities helped in making

the course interesting and that the course was challenging for the students of BS (Education) at the 7th Semester.

Table 4.32

Recommendations

Section H: Do you think that the following suggestions will help integrate the Computer Assisted Instruction with Face-to-Face Teaching?	Little importance	Quite great importance	Very great importance
1. Better access to technological equipment		20%	80%
2. Reliability of equipment			90%
3. Availability of high-quality equipment		25%	75%
4. Trainings/courses in using instructional technologies		20%	80%
5. Instructional technology-support		10%	90%
6. Technological hands-on trainings/courses		25%	75%
7. Technological support		25%	75%
8. Policies of using instructional technology across the curricula		25%	75%
9. Dedicated time in the courses to prepare, explore and develop instructional designs/models		35%	65%

The table 4.32 shows the recommendations of the respondents about integrating the Computer Assisted Instruction with Face-to-Face Teaching. The results indicated that 80% respondents followed by 90%, 75%, 80%, 90%, 75%, 80%, 90%, 75%, and 65% respectively said that it was crucial to have the following: a better access to technological

215

equipment, reliability of equipment, availability of high-quality equipment, arrangement of trainings/courses in using instructional technologies, provision of instructional technology-support, holding technological hands-on trainings/courses, provision of technological support, formulation of the policies of using instructional technology across the curricula and the allocation of dedicated time to prepare, explore and develop such courses to be able to integrate the Computer Assisted Instruction with Face-to Face-Teaching.

Table 4.33

Feasibility/Usability of Interactive Courseware/Module

1=Poor   2=Fair   3=Good 4= Very Good   5=Excellent

	Statements	Poor	Fair/Good	Very Good / Excellent
1.	The courseware/modules were easy to use.		10%	90%
2.	Sufficient instructions were included in the courseware/modules.		10%	90%
3.	The course navigation and interface were easy to use with clear instruction.			100%
4.	Level of interactivity was appropriate for the topic area.		20%	80%
5.	It was easy for the students to move between the course segments.			100%
6.	The course loads and run were appropriate and went on as expected.		15%	75%
7.	There was a feasible in the course running.		05%	95%
8.	The courseware/modules was/were appropriate and easy to use.			100%

216

The table 4.33 displays the rating of the courseware given by the respondents about the feasibility and usability of the interactive courseware. The results manifest that 90% followed by 100%, 80%, 100%, 75%, 95%, and 100% respondents respectively rated the courseware as very good/excellent—that is to say—that the courseware/modules were easy to use, sufficient instructions were included in the courseware/modules, the course navigation and interface were easy to use with clear instruction, the level of interactivity was appropriate for the topic area, it was easy for students to move between the course segments, the course loads and run were as expected, the course running was feasible and that the courseware/modules were appropriate and easy to access.

Table 4.34

The Course Design

	Statements	Poor	Fair/Good	Very Good / Excellent
1.	The courseware/modules were well organized.			100%
2.	The course employed multiple learning methods of teaching.		20%	80%
3.	The readability of course material was appropriate for the target audience.		20%	80%
4.	The course was congruent; the contents flowed in a logical sequence.		20%	80%
5.	The units of learning were appropriate in length.		20%	80%
6.	The courseware/modules had clearly stated the objectives.		10%	90%
7.	The course provided guided practice.		10%	90%

217

8.	The course provided the feedback for the learners.	20%	70%
9.	The course provided skill checks along the way.	20%	80%
10.	The testing measured student's mastery of the course material.	10%	90%
11.	The course was of an appropriate length for the topic addressed.	20%	80%
12.	The graphical illustrations were appropriate.	10%	90%
13.	The overall quality of the instructional design was high.	10%	90%

The table 4.34 depicts the respondents' rating of the course design. The results present that all (100%) respondents followed by 80% and 90% respectively rated the courseware/modules as very good/excellent—that is to say—that the courseware/modules were well-organized, they employed multiple learning methods of teaching, the readability of course material was appropriate for the target audience, the course was congruent; the content flowed in a logical sequence, the units of learning were appropriate in length and the courseware/modules had clearly stated the objectives. According to the results 90% followed by 70%, 80% and 90% respondents respectively rated the course design as very good/excellent as it: provided the guided practice and feedback to the learners, included the skill checks along the way, measured the students' mastery of the course material, had appropriate length for the topic addressed and included appropriate graphical illustrations. That is why the students overwhelmingly rated the overall quality of the instructional design as very good/excellent.

218

Table 4.35

The Quality of Content and Coverage

	Statements	Poor	Fair/Good	Very Good/ Excellent
1.	The content coverage was complete.		15%	85%
2.	The content coverage was accurate.		30%	70%
3.	The content was stated clearly.		10%	90%
4.	The graphics were clear and contributed to the students' learning.			100%
5.	The content had an appropriate level of difficulty.		05%	95%
6.	The number of topics presented in the courseware/modules was appropriate.		30%	70%
7.	The number of activities included in the courseware/modules was appropriate.			100%
8.	The material covered in the courseware/modules was appropriate.			100%
9.	What was the overall rating of the course?		10%	90%

The table 4.35 depicts the quality of the content and coverage of the courseware. According to the results 85% respondents rated the content and coverage of the courseware as very good/excellent, while, 70% said that the content was accurate, 90% said that the content was stated clearly. Moreover, all respondents (100%) said that the graphics were clear and contributed to the students' learning, 95% said that the content had an appropriate level of difficulty, 70% said that the number of topics covered was appropriate, while, all (100%) said that the activities included in the courseware were suitable and in an

219

appropriate number, and that the material presented in the courseware/modules was appropriate. While, 90% respondents gave an overall rating of the course as very good/excellent.

Table 4.36

The Overall Experience

	Statements	Disagree	Neutral	Agree
1.	The courseware/modules reinforced the material that was covered in the class.	0.0%	05%	95%
2.	The courseware/modules facilitated the learning.	10%		90%
3.	The courseware/modules were boring.	85%	10%	05%
4.	The courseware/modules should be used to supplement the lectures.	0.0%	30%	70%
5	Learning through a computer was a cold and impersonal experience.	80%	20%	0.0%
6.	Learning using a computer was an exciting way to learn.	0.0%	20%	80%
7.	I liked the combination of the lectures and computer-based instructions.			100%
8.	I feel the courseware/modules helped to develop my problem-solving skills.			100%
9.	I would like to use similar courseware/modules for other subjects.	10%		90%
10.	I feel that learning through the courseware/modules should be made mandatory for all the students.		30%	70%

11.	The graphical illustrations in the courseware/modules were informational and facilitated the learning.		100%
12.	The courseware/modules helped me apply my knowledge.		100%
13.	I learned a lot from the courseware/modules	30%	70%
14.	I think the courseware/modules were helpful in preparing me for the test.	10%	90%
15.	Overall, learning through the courseware/modules was a valuable learning experience for me.		100%
16.	I enjoyed using the courseware/modules.	10%	90%
17.	The course maintained the students' interest.	10%	90%
18.	Exercises and activities contributed to the students' understanding.	10%	90%
19.	The course contents addressed the stated objectives of the course.	20%	80%
20.	The course was relevant to the tasks.		100%
21.	The course met the stated needs of the students.	10%	90%

The table 4.36 illustrates the overall experience of the respondents during the course. The results as reported showed that: 95% respondents reported to be agreed that the courseware/modules reinforced the material covered in the class and facilitated the learning, 85% disagreed that the courseware/modules were boring, 80% disagreed to the idea that learning from a computer was a cold and impersonal experience, 70% and 80% respondents respectively agreed that the courseware/modules should be used to supplement

lectures and that it had been an exciting way to learn. While, 70% respondents emphasized on using such courseware/modules to supplement the lectures/teaching. The results showed that all (100%) respondents agreed that they liked the combination of the lectures and computer-based instructions and that the courseware/modules helped them develop their problem-solving skills. While, 90% respondents, followed by 70% and 100% respectively responded to agree that: they would like to use similar courseware/modules for other subjects as well, that the learning through certain courseware/modules should be made mandatory for all the students, and that the graphical illustrations in the courseware/modules were informational and facilitated the learning as well as the knowledge application. While, 70% respondents said that they learned a lot from the courseware/modules. The results as recorded by the students showed that: 90% respondents agreed that the courseware/modules were helpful for the preparation of the test, all (100%) said that learning through the courseware/modules was a valuable learning experience, 90% agreed that they enjoyed using the courseware/modules; it maintained their interest, and that the exercises and activities contributed to their understanding. While, 80% respondents followed by 100% and 90% respectively reported to agree that the course contents addressed the stated objectives of the course, the course was relevant to the tasks, and that the course met the specified needs of the students.

4.5.6 Evaluation Document Summary

The evaluation document reported and analyzed the course evaluation results. The course evaluation was based on the selected indicators; such as: the teaching methodology, course design, students' learning, motivation and attitude towards the learning

222

environment, feasibility/usability of the courseware and recommendations. The pre-test and post-test scores were compared through a paired sample t-test to validate the improvement in the performance of the students in terms of the test scores. The results showed that there had been a significant improvement in the students' performance. The results also manifested that the courseware was successfully implemented and did achieve its objective. The teaching methodology and course design were effectively implemented according to the Gagne's events of instruction. The results also brought forth that the students enjoyed the overall instructional process as they were found to be much more involved and engaged in the whole process. The course design addressed the stated objectives and met the needs of the students as reflected in the results. The results also reflected that it had been an interesting and motivating learning experience for the student; that is why, the overall course design was rated to be excellent by the students.

CHAPTER 5

Summary, Findings, Discussion, Conclusions, Recommendations

5.1 Summary

Instructional Design (ID) is a rapidly growing area in in the field of education which is being applied in designing and planning instructions and syllabus across the world. Instructional designs are used to develop rigorous types of learning programs for professional trainings with the aim of maximizing the effectiveness, efficiency and appeal of instruction and other learning processes. It also helps analyzing learning behaviors and practices by understanding the learners' needs and designing and implementing the courses. Based on analysis, design, development, implementation, evaluation (ADDIE), the present study aimed at developing an Instructional System and creating instructional modules for a course titled: Teaching and Learning Strategies using Gagne's Nine Events of Instruction as basis for content development of the module. The objectives of the study were: to conduct a needs-analysis of the target group as required in ADDIE model; to design and develop instructional modules based on Gagne's Nine Events of Instruction; to deliver instruction through implementation of Instructional System Design in teaching a course on teaching and learning strategies; and to evaluate the utility and effectiveness of Instructional System Design on students' learning. The twenty (20) students of BS Education of the Department of Education at International Islamic University, Islamabad were selected as a sample of the study.

This study was mixed method in design. It was conducted in five different phases i.e. analysis, design, development, implementation and evaluation. The framework for this

was provided by ADDIE model—the most basic model of instructional system design. The first phase was the analysis-phase in which needs-analysis of the target population was done. Pre-test and needs-analysis questionnaire were administered to determine the needs and requirements of the target group. The second phase was the design-phase in which the instructional plan was designed, incorporating Gagne's Nine Events of Instruction, including course objectives, course outline, instructional procedures, activities, and evaluation. The third phase was the development-phase in which the instructional material in a form of instructional modules was developed as planned in the design-phase. The fourth phase was the implementation-phase in which the instructional modules were implemented on the target group through blended approach. In the last phase, that is, the evaluation-phase of instructional system design (ISD), the whole process of instructional design was evaluated and the effectiveness of ISD examined through post-test and evaluation form.

5.2 Findings (Needs-Assessment)

1. In the first statement, the participating students (perspective teachers) were asked as to how many teachers captured students' attention to begin the lecture, introduced topic and aims and objectives, connected previous knowledge, delivered lecture in an organized way, and contextualized the content. It was found from the results that majority of the students (80%) reported that some of teachers tried to capture students' attention by using various techniques before beginning the lecture whereas 60% of the students said that some of the teachers introduced the topic effectively.

225

2. Most of the teachers (55%) introduced the aims and objectives of every session/topic, while 60% said that some of the teachers connected previous knowledge of learners with new information to help them understand new concepts. 65% of the participants said that some of the teachers delivered the lectures in an organized and coherent way.

3. Most of the students (60%) viewed that most of the teachers used lecture method while 55% participants said that some of the teachers used group work and collaborative learning activities

4. Most of the participants (60%) were of the view that some of the teachers used discussion method, which was further divided as: (75%) demonstration, (60%) problem-solving, (85%) project method and (60%) role-play teaching method in classroom and (85%), none of the teachers used simulation and games, (60%) storytelling and (70%) Computer assisted instruction in classroom.

5. Participants (45%) said that most of the teachers and some of the teachers provided clear guidelines to do the assignments while 80% participants said that most of the teachers gave examples to explain their topics.

6. Majority of the participants (75%) said that some of the teachers provided an opportunity of drill and practice, while 80% said that timely feedback, while 75% conducted quizzes and exercises on regular basis, (70%) provide reference material and other supporting tools, (70%) concludes every lecture by revising important points, (80%) uses visual material and illustrations and (55%) makes the class interactive by engaging learners

7. The result also revealed that (60%) of the participants said that none of the teachers while 40% viewed that some of the teachers gave individualized instructions to the students. 90% participants said that none of the teachers used blended learning approach.

Results of the Course Analysis were found as follow:

8. Participants (65%) said that most of the courses had easy and understandable course content, while 50% said that the material was according to the objectives while 65% reported that most of the courses were organized.

9. Participants (65%) reported that in some of the courses the concept was initiated with an introduction to grab learners' attention, (80%) had content with practical relevance, (55%) each component connected previous knowledge, (65%) the guidelines for different tasks and activities were included and (65%) provide with an opportunity to drill and practice.

10. Majority of the participants (85%) said that some of the courses provided feedback on various tasks, (65%) had had plenty of quizzes and exercises, (50%) recommended reference material and supporting tools, (50%) were supported by variety of visuals and illustrations, (55%) were supported by variety of examples and (75%) were interactive to engage the learners.

11. It was also found that 55% participants viewed that none of the courses have had the provision for individualized instructions and that (60%) involved blended learning approach (i.e. computer based as well face to face) to make the learning interesting.

12. All the students (100%) agreed that the friendly environment in the class helped learn better, (80%) it was better for the teacher to be little strict, (85%) making class more

227

integrative helped learn better, (60%) informal setting of the class was good for learning, (90%) it was better if teacher walked around to engage students in the learning process and (95%) audio-visual aids helped in creating better classroom environment.

13. It was also found that 55% respondents disagreed that class should have a traditional look—where teacher was standing on a higher podium while students were listening to him/her all the time.

14. According to the results it was found that 75% respondents agreed that an interesting initiation on the part of the teacher helped, (95%) encouraging attitude towards students' questions, holding quizzes, doing exercises providing reference or/and reading material could help create a better environment of leaning and facilitated in creating a competitive environment in the class.

15. According to the results it was also found that 85% students agreed that splitting students into smaller/bigger groups, giving individual attention and (60%) supporting computer-based learning helped build a better environment in the class.

16. It was found by the results that all the students (100%) agreed to be interested in taking part in the course, (90%) with self-study components, (95%) having interactive exercises/activities that would help in making the course interesting.

17. Results revealed that 45% students were neutral and disagreed respectively that the course would be more difficult than traditional learning in the class while 45% respondents disagreed and 25% remained neutral regarding whether the course would be challenging for the students of BS (Education), (7th Semester).

18. The results also reported that 90% respondents considered a better access to technological equipment important, while 90% agreed to have reliability of equipment,

(70%) availability of high-quality equipment, (95%) training/courses in using instructional technologies and (70%) said that instructional technology-support would help integrate the Computer Assisted Instruction with Face to Face Teaching.

19. It was also established by the results that 70% respondents considered Technological hands-on training/courses important, while 75% agreed to the provision of technical support, (70%) development of policies on using instructional technology across the curricula and (80%) said that dedicated time in the courses to prepare, explore and develop would help integrate the Computer Assisted Instruction with Face to Face Teaching.

20. It was established from the results that 80% students "never rarely" used personal computers/laptops in the class, while all (100%) said that they did not use video conferencing system in classroom, learning management systems, and audio equipment, while 90% said that they used videos, (95%) digital camera, (90%) web searching, (75%) internet communications (55%) presentation software, (80%) drill and practice programs (90%) tutorials (100%) spread sheets 80% concept mapping tools, 75% database tools, (85%) simulation tools, (95%) educational CDs, (85%) e-books, and (60%) used text books in the classroom.

21. It was found that half (50%) of the students "less/more than half of the time" experienced multimedia, (35%) digital library and (45%) basic audio-visual aids. (60%) respondents "more than half the time" experienced class lectures, (60%) used lecture handouts, (30%) experience practical classes, (60%) used class notes and (55%) experienced discussion sessions in the classroom.

22. According to the data collected from the VAK questionnaire, it was revealed that 07 students had visual learning style, 07 had auditory while 06 had kinesthetic learning styles out of total number of the 20 students.

5.2.1 Findings (Evaluation Phase)

1. The results of paired sample t test statistics show that there is a significant difference in the scores for pre-test (M=25.30) and post-test (M=33.70); and the t value is t (19) = -6.890, p = .000." The Sig. (2-Tailed) value is .000.

2. It was found from the results that all (100%) students agreed that before the beginning the lecture, teacher tried to capture attention by using various techniques, effectively introduced the topic, and outlined the objectives.

3. Results revealed that 90% students (participants) agreed that the teacher connected previous knowledge of the learners with new information to help them understand new concepts, delivered the lectures in an organized and coherent way. Similarly, all (100%) the participants said that the teacher contextualized the contents (connected the contents to real life situation).

4. According to the results it was found that all (100%) students agreed about the use of lecture and discussion method by the teachers. 70% agreed about the use of demonstration method, 65% agreed about problem-solving, (75%) project method, (55%) simulation and games, (95%) storytelling, (80%) role play, (95%) computer assisted instruction, (100%) group work and collaborative learning activities in the classroom.

230

5. All the students (100%) agreed that clear guidelines for assignments, opportunity of drill and practice, (80%) and timely feedback was provided by the teacher in the class. 80% agreed that regular assessment of learning outcomes through quizzes and exercises were conducted, while all the participants (100%) agreed that the reference material and other supporting tools were provided to enhance the learning outcome.

6. It was found that 100% students agreed that teacher concluded every lecture by revising important points, used visual material, illustrations and examples and engaged learners by making the class interactive. While, 90% agreed that individualized instructions and (90%) blended learning approach (i.e. computer based as well face to face) was used by the teacher to make the learning effective.

7. It was found also that all the students (100%) agreed that the course contents were easy and understandable, every new concept was initiated with an introduction, the material met its objectives, the contents had had practical relevance, each component connected previous knowledge, organized, included the guidelines for different tasks and activities and provided with an opportunity to drill and practice.

8. According to the results 80% students agreed that the courses provided feedback on various tasks, while 90% said that the courses had plenty of quizzes and exercises.

9. All the participants (100%) responded that the course recommended reference material and supporting tools, was supported by variety of visuals, illustrations and examples, interactive, had the provision for individualized instructions and that it involved blended learning approach.

10. According to the results it was found that all the students (100%) agreed that the environment of the class was flexible enough to learn better, 90% experienced a

friendly environment during the course. Likewise, 100% responded that the class was more integrative that helped learn better.

11. 90% students responded that seating arrangement was according to the needs and requirements of the class and that the teacher would often walk around to engage students in the learning process. 65% disagreed that the class had a traditional look. 95% learners agreed that the use of audio-visual aids helped in creating better classroom environment, while, all (100%) said that the environment of the class was flexible enough to learn better.

12. According to the results it was found that all (100%) respondents agreed that an interesting initiation on the part of the teacher helped catching students' attention and set up a friendly environment for learning, and that teacher's encouraging attitude towards students' questions helped in making the environment conducive for learning.

13. According to the results 90% students agreed that holding quizzes and doing exercises proved helpful, while all (100%) said that providing reference or/and reading material helped in creating a competitive environment in the class. In the same way, all the students (100%) agreed that splitting students into smaller/bigger groups, giving individual attention to the students and computer-based learning helped build better environment in the class.

14. According to the results it was found that all (100%) students agreed that taking part in the course was an interesting and motivating experience. The course that included self-study helped learn better—90% said that the interactive exercises/activities helped in

making the course interesting, while, 80% said that the course was challenging for the students of BS (Education) at the 7th Semester.

15. According to the results it was found that 80% respondents agreed that better access to technological equipment, (90%) reliability of equipment, (75%) availability of high quality equipment, (80%) training/courses in using instructional technologies, (90%) instructional technology-support, (75%) technological hands-on training/courses, (75%) technological support, (75%) policies on using instructional technology across the curricula, while 65% said that dedicated time in courses to prepare, explore and develop would help in integration of the Computer Assisted Instruction (CAI) with Face to Face Teaching.

16. According to the results it was found that 90% students rated as "very good/excellent" that the courseware/modules were easy to use, (90%) sufficient instructions were included in the courseware/modules , (100%) easy to use course navigation & interface with clear instruction, (80%) level of interactivity is appropriate for topic area, (100%) easy for students to move between course segments, (75%) course loads and run as expected, (95%) feasible course running, while all the students (100%) said that the courseware/modules were convenient and easy to access.

17. It was found that all (100%) students rated as "very good/excellent" that the courseware/modules were well organized, (80%) employed multiple learning methods to teach students, (80%) readability of course material was appropriate for the target audience, (80%) the course was congruent; the content flowed/was presented in a

233

logical sequence, (80%) units of learning were appropriate in length, while 90% said that the courseware/modules had clearly stated objectives.

18. According to the results it was found that 90% respondents rated course design as "very good/excellent" that provided guided practice, (70%) feedback was provided to the learners, (80%) skill checks were ensured along the way, (90%) measured student's mastery of the course material, (80%) had appropriate length for the topic addressed, while 90% said that it had appropriate graphical illustrations. 90% of the students agreed to the overall quality of instructional design.

19. Results about the quality of content and coverage depicted that, 85% students rated courseware as "very good/excellent" that the content coverage was complete, (70%) accurate, (90%) content was stated clearly, (100%) graphics were clear and contributed to the student's learning, (95%) content was of an appropriate level of difficulty, (70%) the number of topics, (100%) activities, (100%) material presented in the courseware/modules was appropriate. While, 90% respondents gave Overall rating of the course as "very good/excellent".

20. Results also illustrated that 95% respondents agreed that the courseware/modules reinforced the material covered in the class, while, 90% said that they facilitated learning. 85% disagreed that the courseware/modules were boring, while, 85% said that the learning from a computer was a cold and impersonal experience. 70% agreed to the statement that the courseware/modules should be used to supplement lectures, while 80% said that it was an exciting way to learn.

21. Results reflected that all respondents (100%) agreed that they liked the combination of both lectures and computer instructions and that the courseware/modules helped to

develop their problem-solving skills. 90% agreed that they would like to use similar courseware/modules for other subjects, while, 70% said that the learning through the courseware/modules should be made mandatory for all students. All the students (100%) agreed that the graphical illustrations in the courseware/modules were informational and facilitated the learning and helped in knowledge application, while, 70% students agreed that they learned a lot from the courseware/modules.

22. According to the results 90% respondents agreed that the courseware/modules were helpful in test preparation. All respondents (100%) agreed that the overall learning through the courseware/modules was a valuable learning experience. 90% agreed that they enjoyed using the courseware/modules—it also maintained their interest, and that the exercises and activities contributed to their understanding. 80% agreed that the course contents addressed stated objectives of the course. All the students (100%) said that the course was relevant to the tasks, while, 90% said that the course met the needs and requirements of the students as determined through the needs-analysis.

5.3 Discussion

Analysis, Design, Development, Implementation, and Evaluation (ADDIE) is a paradigm that refers to the major processes which comprise the generic ISD: Analysis, Design, Development, Implementation, and Evaluation. Kallio (2008) indicates that ADDIE can be used in all forms of instructions with its specific attributes. The analysis-phase involves performance gap analysis, which includes learner, content, and task analyses and to understand as to how these influence the design of instruction. The design-phase addresses how instructional goals and objectives shape strategies. The development-

235

phase relates to the tools and processes used to create instructional material. The implementation-phase addresses the execution of the instructional materials or program. The evaluation-phase addresses assessment (both formative and summative). ADDIE is a process to generate performance-based episodes of creating intentional learning environments and by using these categories ID practitioners continue to innovate, develop and invent new approaches.

Trust and Peckers (2018) developed an open online course for professional development of teachers. Nagusa (2014) investigated the application of ADDIE Model of Instruction and recommended on-going in-service teacher training for teachers to keep applying ADDIE principles throughout their professional life. Cheung (2016) developed the curricula for educators to help them teach chest radiograph interpretation and found the curricula very useful. Usta and Guntepe (2017) conducted a study on pre-service teachers to examine e-books design process and found problems, deficiencies in the design-phase of e-books, and the ways to eliminate those deficiencies.

Drljaca, Latinovic, Stankovic, and Cvetkovic (2017) reviewed ADDIE in preparation of instructional material for traditional as well as electronic and online teaching. Martin (2011) highlighted the process of instructional design in designing instructional modules for digital literacy course in community college setting. Fathima (2013) stressed to improve teachers' instructional practices by using appropriate programmed instructional designs in order to achieve curricular objectives through learner centered teaching. Khalil and Elkhider (2016) provided a practical framework for the application of learning theories and models of instructional design in classrooms and

laboratory by the faculty members at higher education. These and numerous other researches are evident that instructional designs can be applied effectively and efficiently in many ways to achieve the intended objectives.

The present study focused upon developing an instructional design in the field of teacher education. The results of the study reflect the successful implementation of ADDIE model to develop an instructional design in the field of teacher education. Various researches have been conducted in which ADDIE was taken as a basic framework of instructional design. Bajbouj (2015) adopted ADDIE for designing an instructional system for course development and proposed a new model that is appropriate for online learning environments. Ozdilk and Robeck (2009) analyzed operational priorities of instructional designers according to ADDIE steps. Zulkifi, Razak and Mahmood (2018) used ADDIE to develop a philosophical inquiry approach in moral education. Cheung, L. (2016) used ADDIE to develop curriculum to teach Chest Radio-Graph Interpretation to internal medicine residents. Durra and Ataizi (2016) conducted a study by applied ADDIE to design the fully online course on distance education platform for programming languages at undergraduate level. Almomen, Kaufman, Alotaibi, Rowais, Albeik, Albattal (2016) applied ADDIE to continuous professional development for primary care physicians.

According to Tobase (2017) ADDIE Model was found to be very effective in developing online courses. Their study employed ADDIE model for the enhancement of teaching and learning in education, especially in Moral Education. ADDIE provided a basis for the development of education modules for different settings and it was found to be easy to use, and could be implemented in the school curricula Zulkifi, et. al (2018). Durra and

237

Ataizi (2016) conducted a study to design a fully online course on distance learning platform for programming languages using ADDIE and found it useful and satisfactory.

The analysis-phase is the foundation for all other phases of instructional design. The major objective of this phase is to identify performance gap and its causes to determine the type and degree of strategies and instruction to fill the void. In the present study, the needs-analysis was done in five phases: Learners' analysis, Environmental analysis, Content analysis, Instructional analysis and Instructional media analysis. Zulkifi, et. al. (2018) conducted a needs-analysis to design a moral education module that included document analysis of the prevalent moral education curricula, teachers and students' problems, goals and objectives, previous knowledge and teaching-learning environment through focused group interviews. Cheung (2016) conducted a needs-analysis to develop a curriculum to teach Chest Radio-Graph Interpretation to internal medicine residents. According to the study of Durra and Ataizi (2016) learner-analysis, content-analysis, technical-analysis, structural and environmental-analysis were involved in the needs-analysis-phase to design an online course for programming languages.

The design-phase involves using the outputs from the analysis-phase to plan a strategy for developing instructions. It is a procedure of creating blueprints of various course elements, such as: writing a target population description, conducting a learning analysis, writing objectives and test items, selecting a delivery system, and sequencing the instruction. In the design-phase of the present study, the procedure to specify and document the whole process of instruction; that is, how learners will learn the instructional material, was implemented. During the design-phase of course development, a draft of "instructional

238

plan" was created to identify the desired behaviors that learners would be able to perform and to create learning experiences accordingly. This Plan of Instructions contained everything that was deemed necessary to fulfill the instructional needs of the students and teachers. The plan clearly described the overall purpose and implementation of the course. Every unit was created according to that instructional plan; that included the instructional strategies that would be used and as to how student performance would be evaluated satisfactorily and what resources would be needed for its implementation.

The present study applied Gagne's Nine Events of Instruction in planning content and delivery methods of instructional modules. Gagne described nine specific internal processes that occur when a person is engaged in learning. It also explains how teacher can support these processes through steps called the events of instruction. Gagne's Nine Events of Instruction have widely been used for skill development and training purposes in various fields. Khadjooi, Rostami and Ishaq (2011) deigned a lesson plan based on Gagne's Nine Events of Instruction for a practical procedure of junior doctors to enhance their psychomotor skills. Ngussa (2014) investigated application of Gagne's model in classroom instruction of high school students by secondary school teachers in Mousoma Tanzania and recommended to maximize the application of events of instruction in classroom teaching by teachers. Abdelmagid (2018) studied the concept of augmented reality into teaching and learning situation with reference to Gagne's framework of instruction; wherein he revisited the guidelines of instructional practices and the quality of students learning and proposed an Instructional model for teachers supported by Gagne framework and augmented reality learning process.

239

Islam and Salam (2019) applied Gagne's Nine Events of Instruction to evaluate the effectiveness of a teacher training program and concluded that such type of development training session need to be conducted on regular basis following systematic approach and sequence of instruction to fill the gap between actual and desired performance. According to Mancia, Filho, Miquelin, Ribeiro, Geus, and Souza (2017) Gagne's events of instruction can affectively be used to train electricians through a prototype game about maintenance of power live lines. They also found it to be very useful approach for training risky activities. Mie, Ramli and Alhirtani (2015) used Gagne's approaches effectively to facilitate teachers in teaching Arabic to non-native speakers at the university level. They also found teaching activities more attractive, effective and student- cantered, as was suggested in the model.

In the present study, a detailed design document was prepared to explain the whole process of the design-phase. The main purpose of designing document was to verify the desired performance and appropriate testing methods. At the end of the design-phase a list of factual specifications was retrieved for closing the performance gap due to lack of knowledge and skills. Design document established the line of sight that is a practical approach for maintaining an alignment of needs, purposes, goals, objectives, strategies and assessments throughout the ADDIE process.

Martin (2011) highlighted the importance of the design-phase and described two design models: top down and matrix model—for instructional alignment and categorized 10 tasks during design process and found matrix model more effective for instructional alignment of the tasks for course development. The ten tasks he identified for the design-

240

phase were: identify, design and sequence course objectives, instructional material, practice examples, practice activities, feedback, revision of key points, assessment, instructional media and instructional strategies.

While studying the design-phase, Tobase (2017) considered some components for developing an online course of basic life support important. They include content selection, storyboards, developing students' profiles keeping in view the theoretical assumptions of adult learning and instructional matrix keeping in view the medical guidelines of respective country. Durra and Ataizi (2016) conducted a study to design the online course for programming languages, and the components included in the design-phase were: defining the objectives, designing communication factors, support services, course calendar and schedules, course content, technological sub structure, evaluation system and online environment.

Development is the process of authoring and producing the materials. The instructional modules as planned in previous phase were developed including interactive exercises, user instructions, text, important instructions, graphics, audio and videos. The interactive instructional modules were designed in a way to attract and involve all senses of learners and fulfill all events of instruction according to Gagne's theory. The development-stage or phase of the ADDIE model deals with building the instructional material and creating concrete manifestations. The major specifications of the development-phase were to generate and validate the learning resources. The course content was generated in a form of modules. For this purpose, a supporting media was

241

selected and while user manuals for student and teacher were developed. The modules were also transformed in a form of CD to be used as a mode of blended instruction.

According to the study conducted by Tobase (2017) regarding the online course development, the development-phase includes elaboration of required material and learning objects, tutorials, text and animations. Zulkifi, et. al (2018) developed modules of lesson plans and course activities (of eleven sessions) for moral education and adopted the steps of philosophic inquiry for sequencing of instruction. According to the study of Durra and Ataizi (2016) the components involved in the development-phase to design an online course were: preparation of online platform, developing instructional modules, course contents and evaluations. Durra and Ataizi (2016) developed instructional modules and uploaded on the system to implement the online course of programming languages at the undergraduate level. Mojtahedzadeh et.al (2014) conducted a study and developed e-content for the medical education course called case-based e-CME activities. According to the experimental study conducted by Tobase (2017), the platform of Moodle was selected to create a Virtual learning environment to implement an online medical course. Kristano, Mustaji & Mariono (2017) implemented the blended learning syllabus for audio/ media course and found students more engaging and motivating during instruction.

Implementation is the actual delivery and teaching of the course itself. The students of BS Education of the Department of Education (Female Campus) at International Islamic University, Islamabad participated in a preliminary evaluation of the instructional design. The prototype instructional modules were tested on the prospective teachers through an experiment. The duration was of four months (one semester). The main objectives of the

242

experiment were: to check the effectiveness of teaching through instructional module; to identify the flaws and deficiencies of the instructional design; to improve and modify the instructional design after the identification of the deficiencies and to make it more understandable and effective for students. In the study conducted by Kristano, Mustaji & Mariono (2017) the preliminary field testing was done of e-content prototype developed for blended learning before actual course delivery for course revisions. Zulkifi, et. al (2018) pilot-tested the moral education modules over six weeks and incorporated the recommendation of experts in modules as a result of this process. Mojtahedzadeh, et. al. (2015) conducted faculty development training on e-content development following the steps of ADDIE. Zulkifi, et. al (2018) implemented moral education modules for eleven weeks on secondary school students followed by the evaluations. Cheung (2016) successfully implemented chest radiograph interpretation curriculum on internal medicine residents. Durra and Ataizi (2016) implemented online course on distance learning platform for programming languages at undergraduate level. Tobase (2017) selected the platform of Moodle to create a Virtual learning environment to implement an online medical course. Kristano, Mustaji & Mariono (2017) implemented the blended learning syllabus for audio/media course and found students more engaging and motivated during the instruction.

The evaluation-phase is the last stage of ADDIE model. It provides information regarding any modifications, adjustments and revision to the course, if needed. The instructional system design was evaluated with emphasis on its design and working. Pre-test and post-test were conducted to evaluate the effectiveness of ISD on students.

243

Evaluation forms were used for students to identify the strengths and weaknesses of the instructional design for further modifications. The results of the pre-test and post-test reflected that students' performance got significantly enhanced after learning with the courseware/modules. Hence, it was concluded that this technique proves successful for implementation in the classroom setting.

Mojtahedzadeh et.al (2014) conducted a study and evaluated the effectiveness of case-based e-continuing medical education (CME) activities through program evaluation questionnaire and found this activity to be very effective as it was highly rated by the participants. Kristano, Mustaji and Mariono (2017) developed blended learning based instructional material and evaluated the contents through expert validation at prototyping stage as well as after final revisions of the course for further improvement and modification keeping in view the evaluation results. The results of the study show positive impact on the advancement of blended learning syllabus in the learning process. Linh and Suppasetseree (n.a) also developed and evaluated the effectiveness of FBCL model through expert evaluation form for necessary revisions.

The above mention researches reflect that ADDIE can be and has been applied effectively and efficiently in in numerous ways to achieve the intended objectives of improving the teaching-learning process. A great number of instructional design models have been developed overtime for various educational settings; ranging from simple to complex in order to provide step-by-step guidance for developing instructions categorized as classroom oriented, product oriented, and system oriented based on the models. ADDIE

is a model which provides a paradigm that refers to the major processes that comprise the generic ISD: Analysis, Design, Development, Implementation, and Evaluation. Kallio (2008) indicated that ADDIE can be used in all forms of instruction with its specific attributes. Various researches were conducted in the past in which ADDIE had been taken as a basic framework of instructional design Instructional designs facilitate learning in a way that learners can demonstrate improved job performance and apply their newly acquired knowledge, skills and attitudes in a range of situations. Various researches have introduced new trends in the field of instructional design as well as teacher education and in professional development of teachers that provides a direction for future researches. Instructional design provides researchers a facility for necessary modifications according to their own setting and context that might be a possible cause of deviation from previous researchers.

5.4 Conclusions (Needs-Assessment)

1. Only a few teachers capture students' attention to begin the lecture, effectively introduce the topic, inform the students about the aims and objectives, connect previous knowledge of the students, deliver lecture in an organized way, and contextualize the content.

2. Majority of the teachers use lecture method, group work and collaborative learning activities, some of the teachers, however, use discussion method, demonstration, problem-solving, project method and role-play and none of the teachers used simulation and games, storytelling and computer assisted instruction.

3. Most of the teachers provide clear guidelines to do the assignments and give examples to explain the topic and few teachers provide an opportunity of drill and practice, timely feedback, conduct quizzes and exercises on regular basis, provide reference material and other supporting tools, conclude every lecture by revising important points, use visual material and illustrations and make the class interactive by engaging learners.

4. Very few teachers provide individualized instructions while none of the teachers used blended learning approach.

5. The needs-analysis shows that majority of courses had easy and understandable course contents and that the material was according to the objectives and the courses were organized.

6. A few courses have the concepts initiated with a proper introduction to grab learners' attention, have content with practical relevance, components connected with previous knowledge, having guidelines for different tasks and activities and provide with an opportunity to drill and practice.

7. A few courses provide feedback on various tasks, have had plenty of quizzes and exercises, recommend reference material and supporting tools, are supported by variety of visuals, illustrations, examples and are interactive to engage learners.

8. None of the courses have had the provision for individualized instructions and blended learning approach.

9. Majority of the students agree that a friendly environment in the class helps learn better. However, it is better if the teachers are little strict and that making class more integrative is more useful for learning process to happen. It was also found that an informal setting of the class is good for learning, e.g. walking around in order to engage

students in the learning process is helpful, and that use of audio-visual aids helps in creating better classroom environment.

10. Majority of the students do not want to have a class with traditional look—where teacher is standing on a higher podium while students are listening the lecture most of the time.

11. Almost all students have showed interested in taking part in the course, with self-study component, having interactive exercises/activities that helped in making the course interesting.

12. As the results depicted that majority of the students were found to be neutral and disagree to the notion that this course would be more difficult than traditional learning in the class and the fact that a slight majority of the respondents disagree when asked if the course would be challenging for the students of BS (Education) at the 7th Semester; therefore, it is concluded that students did not have any previous experience of learning through this type of course consequently they were not certain about the difficulty and challenges related to these types of courses.

13. Majority of the respondents said that it would be very helpful if they had had access to the technological equipment, reliability of equipment, availability of high-quality equipment, training/courses in using instructional technologies and instructional technology-support in integration of the Computer Assisted Instruction with Face-to-Face teaching

14. It was also established by the results that majority of the respondents considered it important to have access to the technological hands-on training/courses and provision of technical support. They also agreed to the statement regarding developing policies

247

on using instructional technology across the curricula and that time should be dedicated for preparing, exploring and developing such courses in order to integrate Computer Assisted Instruction with Face-to-Face Teaching.

15. Majority of the students "never/rarely" used personal computers/laptops in the class, video conferencing system, learning management systems, audio equipment, videos, digital camera, web searching, internet communications, presentation software, drill and practice programs, tutorials, spread sheets, concept mapping tools, database tools, simulation tools, educational CDs, and e-books.

16. Almost half of the respondents "less/more than half of the time" experienced multimedia, digital library and basic audio-visual aids and practical classes while majority of the respondents experienced class lectures, lecture handouts, used class notes and experienced discussion sessions in classroom.

17. Majority of the students did not have free access of computers in computer labs, but computers, video conferencing systems, VLE, any sort of audio equipment, digital cameras, and sufficient quality of hardware was not accessible in classrooms. Educational CDs, e-books, tutorials and online/recorded lectures were also not accessible.

18. Mostly students got restricted access to internet connected computers. They, however, did have free access to digital library and basic A.V. aids, textbooks, lecture handouts, practical classes and discussion sessions.

19. According to the data collected from the VAK questionnaire it was revealed that students had variety of learning styles in the same classroom. Some had visual and auditory and a few had kinesthetic learning style.

248

5.4.1 Conclusions (Evaluation)

1. It is concluded as shown in the pre-test and post-test results that students' performance got significantly better after having an exposure to the courseware/modules which testifies that using such modules/courseware has been successful in its implementation in the classroom setting.

2. Majority of the students agreed that before beginning the lecture, the teacher had tried to capture attention by using various techniques, effectively introduced the topic, outlined the objectives, connected previous knowledge of learners with new information, delivered the lectures in an organized and coherent way and contextualized the contents.

3. Majority of the students agreed that the teacher had used variety of methods during teaching and learning process in the classroom as per requirements of the students and subject matter; such as, lecture and discussion method, demonstration method, problem-solving, project method, simulation and games, storytelling, role play, computer assisted instruction, group work and collaborative learning activities

4. Majority of the students agreed that clear guidelines for assignments, opportunity of drill and practice, and timely feedback had been provided by the teacher in the class. Regular assessment of learning outcomes through quizzes and exercises had been done and reference material and other supporting tools were also provided to enhance learning.

5. Most students agreed that the teacher had concluded every lecture by revising important points, used visual material, illustrations and examples and engaged learners by making the class interactive. Individualized instructions and blended learning approach (i.e.

computer based as well face to face) were used by the teacher to make the learning effective.

6. Most students agreed that the course contents were easy and understandable, every new concept was initiated with an introduction, the material met its objectives, the contents had had practical relevance, each component connected previous knowledge and were organized, included the guidelines for different tasks and activities and provided with opportunities of drill and practice.

7. Majority of the students agreed that the courses had been successful in providing feedback on various tasks, had had plenty of quizzes and exercises, recommended reference material and supporting tools, supported by variety of visuals, illustrations and examples, interactive, had the provision for individualized instructions and did involve blended learning approach.

8. Majority of the students agreed that the environment of the class was flexible enough to learn better. They experienced a friendly environment in the course, and the class was more integrative which helped fostering better learning environment. Seating arrangement was according to the needs and requirements of the students and the teacher would often walk around to engage students in the learning process.

9. Majority of the students disagreed that class had a traditional look and found that the use of audio-visual aids helped in creating better classroom environment which made the environment flexible enough to learn better.

10. Most respondents agreed that an interesting initiation on the part of the teacher helped catching students' attention and setting up a friendly environment for learning.

Moreover, they thought that teacher's encouraging attitude towards students' questions helped in making the environment better for learning.

11. Majority of the students agreed that holding quizzes and doing exercises, providing reference or/and reading material, splitting students into smaller/bigger groups, giving individual attention and computer-based learning helped build better competitive environment in the class.

12. Majority of the students agreed that taking part in the course had been an interesting and motivating experience, the course with self-study component, interactive exercises/activities helped in making the course interesting and challenging for the students of BS Education (7th Semester) of the selected department.

13. Majority of the students agreed that better access to technological equipment, reliability and availability of high quality equipment, training/courses in using instructional technologies, instructional technology-support, technological hands-on training/courses, technological support, policies on using instructional technology across the curricula, and dedicated time in courses to prepare, explore and develop helped integrate the Computer Assisted Instruction (CAI) with Face to Face Teaching.

14. Majority of the students rated the modules as "very good/excellent" saying that the courseware/modules were easy to use, sufficient instructions were included in the courseware/modules, the course navigation & interface was easy to use with clear instruction, level of interactivity was appropriate for topic area, it was easy for students to move between course segments, course loads and run as expected, it was feasible, and the courseware/modules were convenient and easy to access.

15. Most students rated the modules as "very good/excellent" and said that the courseware/modules had been well organized, employed multiple learning methods of teaching, had had readability of course material which was appropriate for target audience, the course was congruent; content was presented in a logical sequence, units of learning were appropriate in length and the courseware/modules had clearly stated the objectives.

16. Majority of the respondents found course design to be "very good/excellent"—it provided guided practice, feedback to learners, skill checks along the way, measured student's understanding of the course material, was of the appropriate length topic wise, covered appropriate graphical illustrations—which verifies the overall quality of the instructional design.

17. Based on the findings/results of the quality of content and coverage in courseware, it is concluded that: majority of the students found courseware "very good/excellent"—as it covered all the contents, was accurate, had a clear initiation, graphics were clear and contributed to the students' learning, contents were appropriate, and that the level of difficulty was appropriate, the number of topics, activities, material presented in the courseware/modules was appropriate. That is why majority of the respondents gave overall rating of the course as "very good/excellent".

18. Majority of the respondents agreed that the courseware/modules reinforced the material covered in the class facilitated learning and that they should be used to supplement lectures because they said that it was an exciting way to learn. Majority of the respondents disagreed that the courseware/modules were boring and learning from a computer was a cold impersonal experience.

19. Majority of the respondents liked the combination of both lectures and computer instruction and said that the courseware/modules had helped them to develop their problem-solving skills. Most agreed that they would like to use similar courseware/modules for other subjects and that learning through the courseware/modules should be made mandatory for all students. They found graphical illustrations in the courseware/modules interesting and informational that facilitated learning and helped in knowledge application. Majority of the students agreed that they learned far better and more a through the courseware/modules.

20. Majority of the respondents agreed that the courseware/modules were helpful in test preparation and that overall it was a valuable learning experience. They enjoyed using the courseware/modules. The courseware/modules also maintained their interest, and exercises and the activities contributed to their understanding. The course contents addressed the stated objectives of the course and met the stated needs/requirements of the students.

5.5 Recommendations

1. As the results drawn from the needs-assessment showed that some of the teachers use variety of techniques—to begin the lecture, introduce the topic to capture students attention and inform them about aims and objectives of the session—therefore—it is recommended that the teachers begin the lecture with an introduction of the topic with any attractive teaching technique to capture students' attention. It is also important to outline the aims and objectives of the session to inform the students as to what they are

going and what would they achieve at the end of each session so as to make that lecture more meaningful for them.

2. It was reflected in the results of the needs-analysis that only a few teachers connect to the previous knowledge of the students, deliver organized lectures and contextualized the contents. It is, therefore, recommended that the teachers connect to the previous knowledge of the learners with new information, deliver the lecture in an organized way, and contextualize the contents. Teachers may also use other innovative methods of teaching according to the needs and requirements of the subject and students; such as, discussions, demonstrations, problems solving, projects, role-plays and computer assisted instructions.

3. Based upon the conclusions drawn from the needs-assessment, it is recommended that teachers need to conduct quizzes and exercises in the class on regular basis and provide multiple opportunities of drill and practice to the learners. The teachers should provide timely feedback, reference material and other supporting tools. Moreover, they should also use visual material and illustrations and make the class interactive by engaging the learners. It is important for teachers to conclude every lecture by revising important points. As it was concluded that none of the teachers used blended learning approach, it is recommended that training sessions may be arranged for teachers on blended learning and individualized instructions so that they may be able to make use of these approaches in their teaching.

4. It is recommended in response to the conclusion drawn from the needs-assessment that the courses may be designed in a way to cover the concepts initiated with a proper

7. It was found that students did not have any previous experience of learning through this type of course, consequently, they are not certain about the difficulty and challenges related to these types of courses. Therefore, it is recommended that the courses with self-study component should have interactive exercises/activities that may be designed at all levels and in variety of subjects in order to make the teaching-learning process more meaningful and interesting for the students.

8. It is further recommended that a better access to technological equipment may be provided by the institutions, with the availability of reliable and high-quality equipment. Training/courses regarding using instructional technologies may be organized for the teachers and that the instructional technology-support may also be provided in integration of the Computer-Assisted-Instruction with Face-to-Face teaching. Policies on using instructional technology across the curricula should be designed and the curricula developers, policy makers and teachers should dedicate time to plan, prepare, explore and develop courses and instructional designs in order to integrate the Computer-Assisted-Instruction with Face-to-Face Teaching.

9. It is recommended that students should be provided proper facilities in the classroom in order to give them experience of the latest information and communication technologies in the teaching-learning process. Students should have free access to internet connected computers, multimedia and enough quality of hardware in the classrooms according to their need s and requirements so they would be able to experience video conferencing, VLE, Educational CDs, e-book, tutorials and online/recorded lectures, etc.

10. According to the conclusions drawn from the results, it is recommended that teachers may use variety of methods during each session/class to help the learning process to take place in accordance to the needs and requirements of the students and subject matter; such as, short lectures and discussions, demonstrations, simulations and games, storytelling, role-plays, computer assisted instructions, group-works and collaborative learning activities.

11. According to the results it is also recommended that the course contents may be designed in easy and understandable way for the students. Every new concept may be initiated with an introduction, and the material may be in line with the objectives set, having practical relevance. Each component needs to be connected and organized in a logical sequence along with the guidelines for different tasks and activities for providing students an opportunity of drill and practice. Courses may be designed in way to provide feedback on various tasks, should have plenty of quizzes and exercises, recommend reference material and supporting tools, supported by variety of visuals, illustrations and examples providing individualized instructions through blended learning approach.

12. It is suggested based on the conclusions, that the class environment should be flexible, friendly, and integrative to help the students learn more effectively. The seating arrangement may be according to the needs and requirements of the class in which teacher may walk around to engage students in the learning process and to use audio-visual aids in creating attractive classroom environment.

13. Based on the conclusions, it is recommended that the courses with self-study component and interactive exercises/activities should be designed for students in order to provide them an interesting, motivating and challenging learning experience. Better access to technological equipment, reliability and availability of high-quality equipment, training/courses in using instructional technologies should also be guaranteed. Providing instructional technology-support, technological hands-on training/courses, having technological support, policies on using instructional technology across the curricula, and dedicated time in courses to prepare, explore and develop would help integrate the Computer Assisted Instruction (CAI) with Face to Face Teaching.

14. It is recommended that teachers may design courseware for students on various subjects with enough and clear instructions, convenient and easy to access and easy to use navigation system, user friendly interface with appropriate level of interactivity according to the subject. The courseware/modules on various subjects may be designed for students that are well organized and employ multiple learning methods to teach students with appropriate readability of course material. It is also important that the courseware/modules have content flows in logical sequence, units of learning should be appropriate in length and that they have clearly stated objectives.

15. It is also recommended that the courses may be designed in a way to provide guided practice, feedback, skill checks along the way, in order to measure student's understanding of the course material. They should have appropriate length for the topic addressed along with graphical illustrations. The content coverage in the courses may

be complete, accurate, and clearly stated with appropriate level of difficulty, number of topics, activities and graphics.

16. Based on the results, it is further recommended that teachers may use the combination of lectures and computer instructions in the class. Similar courseware/modules for other subjects may also be designed for the students with graphical illustrations to facilitate the learning and knowledge application. Teachers may use the courseware/modules in order to maintain their own interest as well. Exercises and activities may also be added to enhance the understanding of the students. Course contents should address stated objectives of the course and needs of the students.

17. Based on this study the instructional courseware/modules may be designed for other subjects, fields and areas and various models of instructional designs may also be adopted for course designing. This research will also provide basis for future research in the development of instructional designs, course designing and their implementations.

REFERENCES

Ali, S., & Ali, L. (2015). Efficacy of Gagne's nine events of instructions in improving the The performance of undergraduate medical students. *Adv Health Prof Educ,* 1(2), 65-8.

Almomen, R. K., Kaufman, D., Alotaibi, H., Al-Rowais, N. A., Albeik, M., Albattal, S. M. (2016). Applying the ADDIE—analysis, design, development, implementation and evaluation—instructional design model to continuing professional development for primary care physicians in Saudi Arabia. *International Journal of Clinical Medicine,* 7, 538-546. http://dx.doi.org/10.4236/ijcm.2016.78059

Baba, J., Sale, P., Zirra, B. (2017). Applying Gagne's nine events in designing a multimedia programme for teaching elements and principles of design in secondary school. *Arts and Design Studies,* 54, 1-8. https://www.iiste.org/Journals/index.php/ADS/article/view/36804

Bajbouj, M., Alwi, N. H. M., Shah, N. F. M. N. (2015). *A systematic development of instructional design for programming languages: a constructivist based instructional design approach*. Paper presented at International Conference on Computer, Communication, and Control Technology, Kuching, Sarawak, Malaysia

Bates, A. W. (1995). *Technology open learning and distance education.* Routledge

Beatty, I. D. (2014). Gaming the system: Video games as a theoretical framework for instructional design. In *arxiv. Cornel University online research archive.* https://arxiv.org/ftp/arxiv/papers/1401/1401.6716.pdf

Bergman, R., Moore, T. (1990). *Managing interactive video/multimedia projects.* Englewood Cliffs, NJ: Educational Technology Publications.

Bloom, B.S. (Ed.). Engelhart, M.D., Furst, E.J., Hill, W.H., Krathwohl, D.R. (1956). *Taxonomy of educational objectives, handbook I: the cognitive domain.* New York: David McKay Co Inc.

Boehm, B. (1988). A spiral model of software development and enhancement. *IEEE Computer,* 21 (2), 61-72. http://www-scf.usc.edu/~csci201/lectures/Lecture11/boehm1988.pdf

Botturi, L. (2003). Instructional Design & Learning Technology Standard. *ICeF – Quadernidell'Istituto,* 9. www.icef.com.unisi.ch

Branch, R. M. (2009). *Instructional Design: The ADDIE Approach.* Springer Science Business Media. DOI 10.1007/978-0-387-09506-6

Branson, R. K. (1975). Interservice procedures for instructional systems development: Executive summary and models. *Tallahassee, FL: Center for educational technology, Florida State University.*

Çalışkan, İ. (2014). A case study about using instructional design models in science education. *Procedia - Social and Behavioral Sciences,* (116), 394-396.

Diamond, R. M. (1989). *Designing and improving courses and curricula in higher education.* San Francisco, CA: Jossey-Base.

Dick, W., Carrey, L, & Carry, J. (2001). *The systematic design of instruction* (5th ed.). New York: Longman

Dorsey, L., Goodrum, D., & Schwen, T. (1997). Rapid collaborative prototyping as an instructional development paradigm. In C. Dills & A. Romiszowski (Eds.), *Instructional Development paradigms.* Englewood Cliffs, NJ: Educational Technology Publications.

Durak, G., Ataizi, M. (2016). The ABC's of online course design according to ADDIE model. *Universal Journal of Educational Research,* 9(4), 2084-2091. DOI: 10.13189/ujer.2016.040920. http://www.hrpub.org

Department of the Air Force. (1993). *Education/training instructional system development: AF manual.* Department of the Air Force 36-2234 Headquarters U.S. Air Force. Washington D.C. 20330-5000

Fathima, S. (2013). Thinking of programmed instructional design: need of today's learner. *International Journal of Modern Engineering Research,* 2(3), 1056-1060. www.ijmer.com

Gagné, R. M. (1965). *The conditions of learning and theory of instruction* (1st ed.). New York, NY: Holt, Rinehart & Winston.

262

Gagne, R. M., Briggs, L. J., Wager, W. W. (1992). *Principles of Instructional Design* (4th ed.). Holt, Rinehart & Winsto.

Gentry, C. G. (1994). *Introduction to Instructional Development: Process and Technique.* Belmont, CA: Wadsworth Publishing Company.

Gerlach, V. S., & Ely, D. P. (1980). *Teaching and media: a systematic approach.* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall Incorporated.

Gustafson, K. L., & Branch, R. M. (2002). *Survey of instructional development models.* Clearinghouse on information & technology.

Heinich, R., Molenda, M., Russell, J., Smaldino, S. (1999). *Instructional media and technologies for learning* (6th ed.). Upper Saddle River, NJ: Merrill: Prentice-Hall

Hoog, R. de, Jong, T. de, & Varies, F. de. (1994) Constraint-driven software design: an escape from the waterfall model. *Performance Improvement Quarterly* 7(3), 48-63. https://doi.org/10.1111/j.1937-8327.1994.tb00637.x

Instructional design learner's guide. (2017). *Jhpiego Corporation* (2nd ed.). www.jhpiego.org

Jono, M. N. H. H., Ibrahim, M., Aziz, A. A., Noh, M. N. (2012). Instructional design and learning theory on the development of C++ programming Multimedia Content. *Procedia - Social and Behavioral Sciences,* 67, 335 – 344.

Khadjooi K, Rostami K, Ishaq S. (2011). How to use Gagne's model of instructional design in teaching psychomotor skills. *Gastroenterol Hepatol Bed Bench*, 4(3), 116–119.

Khalil, M. K., ElkhiderI. A. (2016) Applying learning theories and instructional design models for effective Instruction. *The American Physiological Society,* 40, 147–156. DOI:10.1152/advan.00138. www.physiology.org/journal/advances

Kristanto, A., Mustaji & Mariono, A. (2017). The development of instructional materials e-learning based on blended learning. *International Education Studies,* 10,(7), 10-17

Landa, L. (1984). Algol-heuristic theory of performance, learning, and instruction: subject, problems, principles. *Contemporary Educational Psychology* 9, 235-245.

Lasher, N. (2008). "A list" instructional design. *Industrial and Commercial Training,* 40(7), 381 –386. http://dx.doi.org/10.1108/00197850810912252 Retrieved from www.emeraldinsight.com

Linh, N. D., Suppasetseree. S. (2016). The development of an instructional design model on face book based collaborative learning to enhance EFL students' writing skills. *The IAFOR Journal of Language Learning,* 2(1), 48-66. https://doi.org/10.22492/ijll.2.1.04

Martin, F. (2011). Instructional design and the importance of instructional alignment. *Community College Journal of Research and Practice,* 35, 955–972. DOI: 10.1080/10668920802466483

Minnesota State University Moorhead. (2016). *Instructor's guide to course development for online, hybrid & technology enhanced courses.* The Office of Online & Extended Learning.

Mojtahedzadeh, R., Ebrahimzadeh, I. Zandi, B., Sarmadi, M. R., Alipour, A. (2015). Instructional design, delivery, and evaluation of interactive case-based e-CME contents. *Journal of Medical Education Winter,* 14(1), 6-11.

Molenda, M. (2003). In search of the elusive ADDIE model. *Performance Improvement,* 42(5), 34-36. DOI: http://dx.doi.org/10.1002/pfi.4930420508.

Morrison, G., Ross, S., & Kemp, J., (2001*). Designing Effective Instruction* (3rd ed.). New York: John Wiley & Sons.

Nieveen, N. (1997). Computer support for curriculum developers: a study on the potential of computer support in the domain of formative evaluation. (Doctoral Dissertation, University of Twente, Enchede, the Netherlands).

Ozdileka, Z., Robeckb, E. (2009). Operational priorities of instructional designers analyzed within the steps of the ADDIE instructional design model. *Procedia Social and Behavioral Sciences,* 1, 2046–2050.

Reiser, R. A. (2001). A history of instructional design and technology: part II: a history of instructional design. *ETR & D,* 49(2), 57–67.

Reiser, R. A. (2001). A history of instructional design and technology: part I: a history of instructional media. *ETR&D*, 49(1), 53-64.

Richey, R.C., Klein, J.D., Tracey, M. W. (2011). *The instructional design knowledge base: theory, research, and practice*. Taylor & Francis

Rothwell, W. J., Kazanas, H. C. (2008). *Mastering the instructional design: a systematic Approach*. (4th ed.) Pfeiffer, Francisco: Jossey-Bass.

Seel, M. N., Dijkstra, S., (2004). *Curriculum, plans, and processes in instructional design: international perspectives*. Taylor & Francis

Seel, N. M., Lehmann, T., Blumschein, P., Podolskiy, O. A. (2017). *Instructional design for learning theoretical foundations*. Sense Publishers

Seels, B. & Glasgow, Z. (1998). *Making instructional design decisions* (2nd ed.). Upper Saddle River, NJ: Merrill, Prentice-Hall.

Selimi,V., Veliu, I. (2010). Design & development of modular learning management systems - methods &techniques: learning from a success story. *Department of informatics, School of Economics and Management*, Lund University. Retrieved from: at: https://www.researchgate.net/publication/48333639

Sharif, A., & Cho, S. (2015). 21st-century instructional designers: bridging the perceptual gaps between identity, practice, impact and professional development. *Universities and Knowledge Society Journal,* 12(3), 72-85. http://dx.doi.org/10.7238/rusc.v12i3.2176

266

Skinner, B.F. (1954). The science of learning and the art of teaching. *Harvard Educational Review,* 24, 86-97.

Smith, P. L., Ragan, J. T. (2005). *Instructional design* (3rd ed.) John Wiley & Sons

Tennyson, R. D. (2010). Historical reflection on learning theories and instructional design. *Contemporary Educational Technology*, 1(1), 1-16

Tobase, L. Peres, H. H. C., Almeida D. M., Tomazini, E. A. S., Ramos, M. B., Polastri, T. F. (2017). Instructional design in the development of an online course on Basic Life Support. *Journal of School of Nursing,* 51, *(1-5)* http://dx.doi.org/10.1590/S1980-220X2016043303288.

Tripp, S., & Bichelmeyer, B. (1990). Rapid prototyping: an alternative instructional design strategy. *Educational Technology Research and Development*, 38(1), 31-44

Trust, T., & Pektas, E. (2018). Using the ADDIE model and universal design for learning principles to develop an open online course for teacher professional development. *Journal of Digital Learning in Teacher Education*, 34(4), 219-233, DOI: 10.1080/21532974.2018.1494521

Wong, Y.L. (2017). Utilizing the principles of Gagne's nine events of instruction in the teaching of Goldmann applanation tonometry. *Advances in Medical Education and Practice,* 9, 45-51.

Zulkifi, H., Razak, A. K., Mahmood, R. M. (2018). The usage of ADDIE model in the development of a philosophical inquiry approach in moral education module for secondary school students. *Creative Education*, 14(9), 2111-2124 Scientific Research Publishing. DOI: 10.4236/ce.2018.914153

USER'S

MANUAL

TEACHING LEARNING STRATEGIES AND

REFLECTIVE PRACTICES

International Islamic University Islamabad

Department of Education

Faculty of Social Sciences

GENERAL INFORMATION

Teaching and learning strategies is one area of teacher education programs which is devoted to teaching principles and techniques that direct the teaching and learning processes. The courseware of teaching learning strategies and reflective practices has been designed for the BS Education Program, offered in the Department of Education, International Islamic University, Islamabad. This discipline is considered very important for them because it makes the connection between teaching process and methodologies on the basic cycle with the teaching technology and classroom implementation practices. The purpose of the course is teacher training and to make the teaching learning in educational institutions effective and sound. Various aspects of effective teaching learning are discussed to enable prospective teachers to use different teaching strategies successfully. The courseware was designed in eight segments/modules and each module is further divided in units, topics and sub topics. The learners will review material related to the topics, for further concept clarifications they will use the link of readings to have access to extra reading material. They can also access to the web resources if connected to the internet. After reading the material they will go to the activity link for practice and self-evaluation exercises. During couching sessions instructor will also provide worksheets for evaluation of learners. The learner will then receive feedback from the instructor.

ABOUT THIS MANUAL

This User's Guide contains features, functions, and step-by-step instructions on how to use this courseware for self-paced instruction. This User's Guide will enable you to access:

- Web-Based Education Materials of useful websites to provided further reading and reference material.

- Additional readings in MS word documents and pdf files about different concepts.

- E- presentation to view present material in a form of lecture on slide show by using sequential navigation tools, contain links of "next" and "previous", "home" and "exit", online resources, activities, readings, videos link with sound narration and figures (graphs, pictures, diagrams, and cycles).

- Video Lectures to view any time

- Assessment Activities like Objective tests and quizzes

HOW TO USE THIS MANUAL

Users are advised to become familiar with the complete contents of this manual prior to use this courseware. Users should also be advised that this manual have proper guidelines for teachers as well as students about each and every component of this courseware so that users can use it more effectively and efficiently without any problems and errors.

CONTACT AND ASSISTANCE:

If at any time during the use of courseware you need assistance or technical support, you may contact to the following address:

Alina Raza

Department of Education, Faculty of Social Sciences, International Islamic university E-mail: alina.raza@iiu.edu.pk Phone No: 9019841

TABLE OF CONTENTS

Contents

COURSEWARE INTRODUCTION

Using interactive Courseware, in the field of education, is one of the newest multimedia techniques to reach learners. This design of this courseware is very interactive and user friendly to appeal the viewer's senses. It provides easy-to-use navigation and an "autorun" feature, so the CD will open automatically. Interactive exercises, training manuals, dynamic photos, and text, important application with animated graphics; audio and video are included to directly involve the learners with the lecture as they navigate through the courseware.

COMPUTER SYSTEM REQUIREMENTS FOR USING COURSEWARE

Technical Requirements	
Hardware	software
Computers system/laptop	Operating system, windows 2008, vista, XP
CD ROM	Internet explorer, Mozilla Firefox,
High color video resolution	Flash player, window media player, real player
Speakers or Headset	Adobe acrobat reader, MMB, Photoshop
Internet	MS office 2007
Multiple copies of CDs	
Other requirements	
Paper , pencil, worksheets,	

Navigation Tools

A simple navigation system was designed for users' feasible information access and delivery. The text based navigation links were designed in an organised manner so that users can find and their desired link and relevant content easily. A multitier structure was created which allow users to directly access to their desired page without going through unrelated pages. A well structured and well-organized navigation system was designed to be easily understood and prevent user from confusion.

Hyperlinks (Links)

Hyperlinks (or link) were created for users to access new slide, chapters, videos, activities, web pages, word document or a new section within the current document and pdf files. When user moves the cursor over a link, the arrow turns into a little hand but hyperlinks are clearly indicated in this CD in a form of button, arrows and written text.

Title page

When you will open the courseware, the title page of the course will appear on the screen having title of the course and course code. (fig.1). There is a hyperlinked blue icon on bottom right of the title page.

272
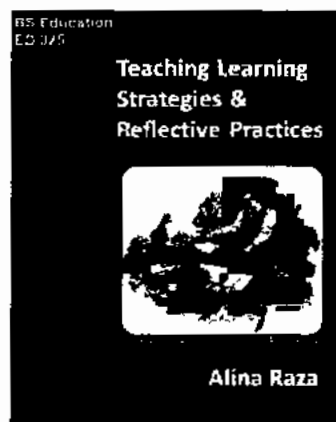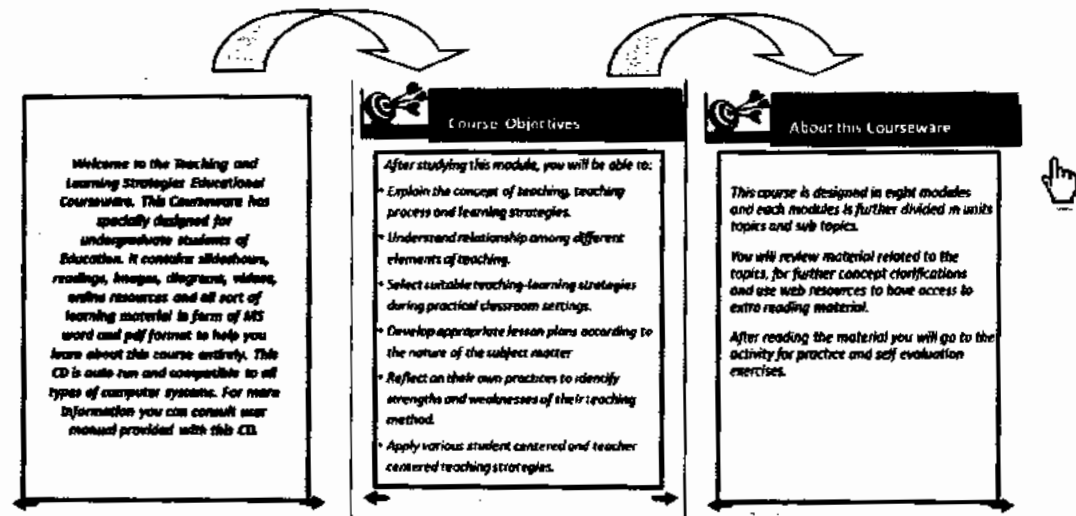
Fig. 2

Click on it to proceed to the next pages having information about the CD, course description, course objectives, contact and assistance details and course contents (fig.2)

Course contents

This course is divided in eight segments and each segment is designed in a form of module. All eight modules are hyperlinked in course content page and can be accessed by just clicking on it.
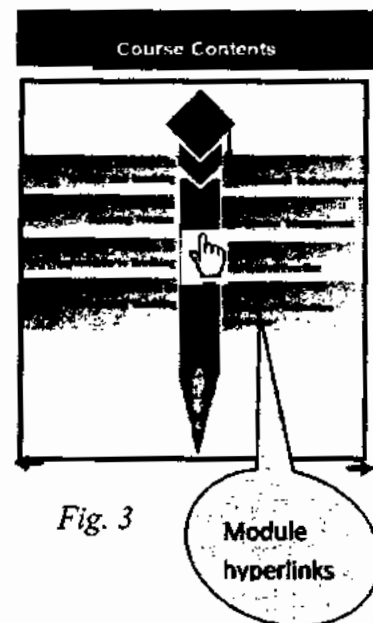
Fig. 3

Module hyperlinks

Module title

Each module has its title page having module title, module number and hyperlinked icons to get direct access of home page, course objectives, content page etc. Next and back links are also made to proceed back and forth accordingly.
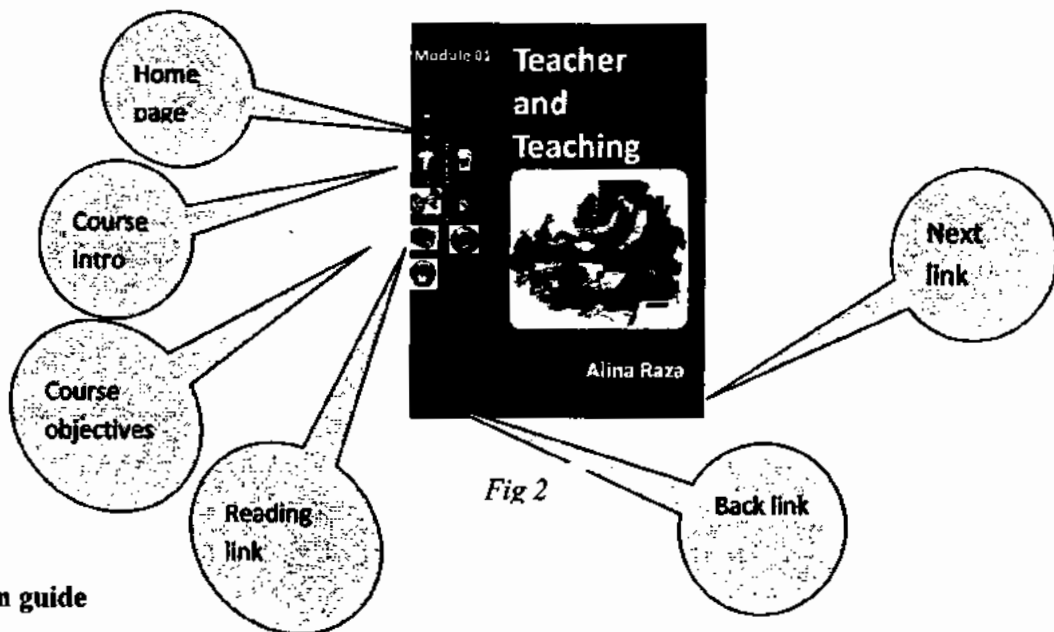
Fig 2

Icon guide

In this courseware various types of icons and symbols has been used to make it interesting, understandable and easy to work on it. The icon guide page has been designed after the very next to module title page so that the meaning and purpose of each and every symbol used in this courseware can be clarified to the users at the very beginning to avoid any inconvenience. Audio and written instructions are also given. (Fig. 5)
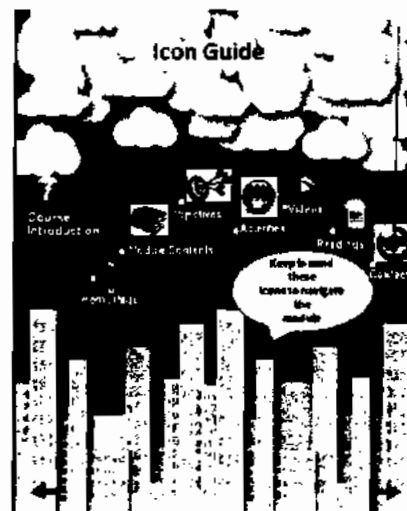
Fig. 5

Module introduction

Each module starts with the introduction of the module and further reading about the concept if required. The link of further reading is given after the introduction. (Fig. 6)
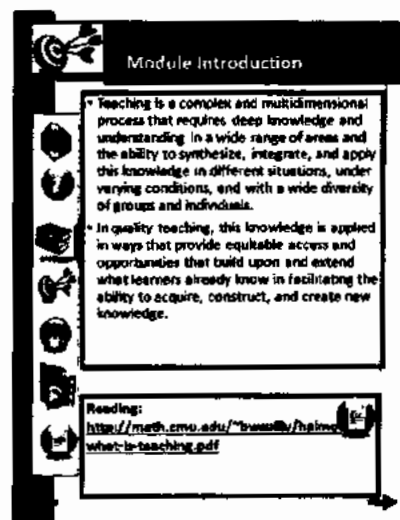
Module objectives

After introduction, the objectives of each module have been displayed to familiarize students about the module outcomes. (fig. 7)
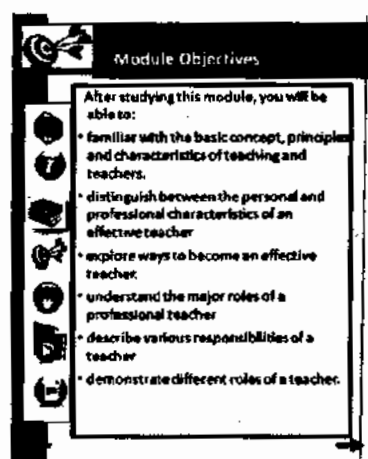
Fig. 7

Module Contents page

The module is further divided in units and in order to access units of the module, a module content page has been designed. Each unit is hyperlinked in a module content page and can be accessed just by clicking on the given links. (Fig. 8)
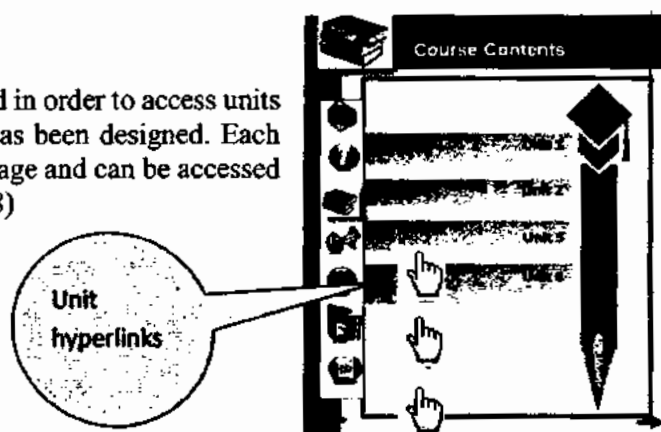
Fig. 8

Unit content page

Each unit is further divided in topics and subtopics. After clicking on unit link the unit content page will appear having the topics included in the unit. Links to access other units of modules are also given on each page so that any unit can be open at any stage. Next and back links are also given on each page of module for simple navigation. (Fig. 9)
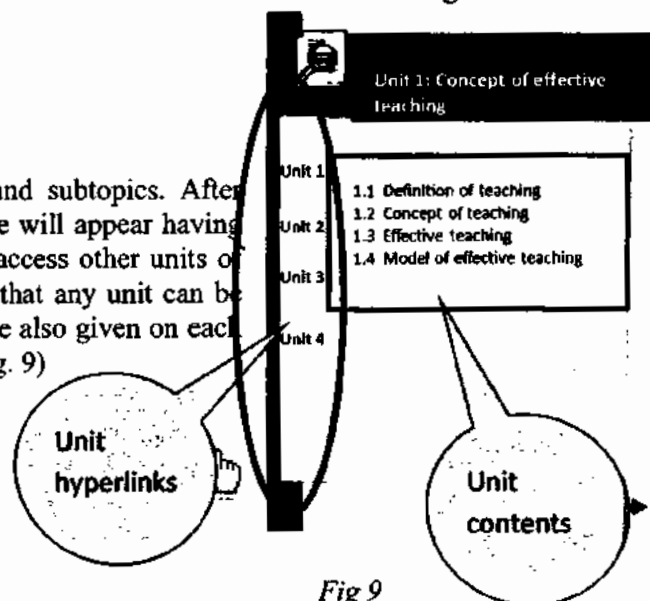
Fig 9

275

Unit Introduction

In order to have an effective start, each unit has an introduction page to create a background of concepts included in session. The introduction page has also links of all units including back and next links. (Fig. 10)

Fig 10

Unit activities

Activities are also included in each unit to make the teaching learning experience interesting, practical and meaningful. Activities are divided in such a way that each unit has beginning activities, middle activities and ending activities. (Fig. 11)

Fig 11

Introductory activity

There is an introductory activity after each unit introduction page to grasp students' attention and develop their interest in the topic. Various forms of activities have been selected and designed according to the nature of the topic. (fig. 11)

Unit objectives

In order to familiarize the outcomes of each unit, the unit objectives has been designed and displayed according to the nature and requirement of the subject. (fig. 12)
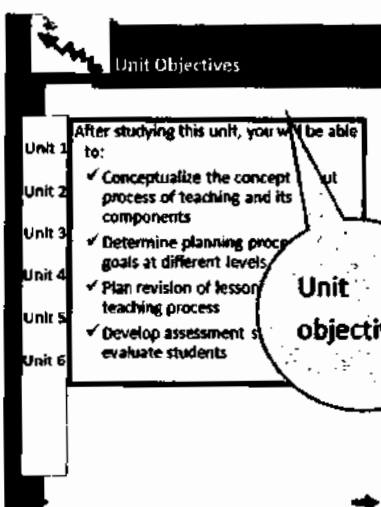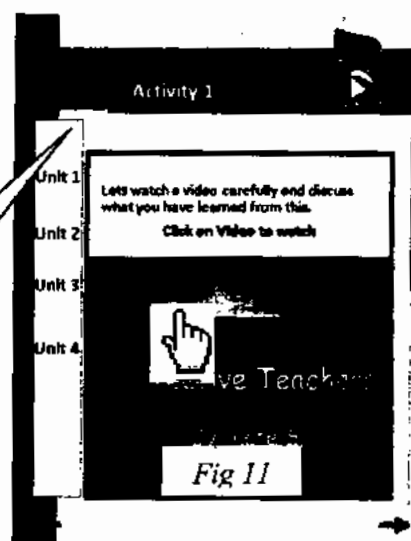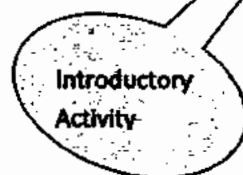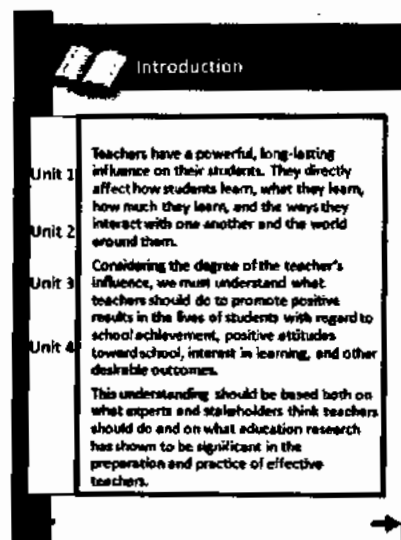
276

PK activity

After introducing the objectives of the unit, there is an activity to check the previous knowledge of the students. Students will go to the next level after completion of that activity. (fig. 13)
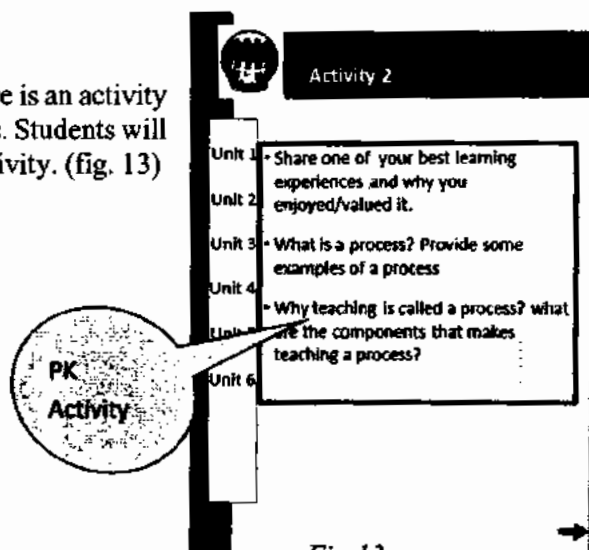
Fig 13

Content display

The details on various topics and sub topics has been given with appropriate details in the courseware but there are other options as well through which Users can get additional information if required. (fig. 14)
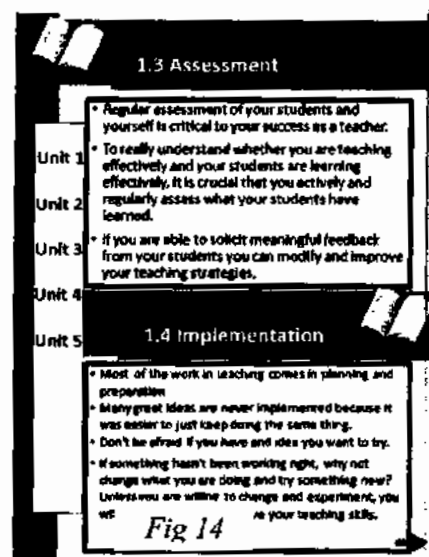
Fig 14

Readings

Additional reading material has also been given to provide maximum detail and conceptual clarity about concepts. Readings can be accessible in a variety of formats. i.e. web link, pdf. file, word file or ppt. (fig. 15)
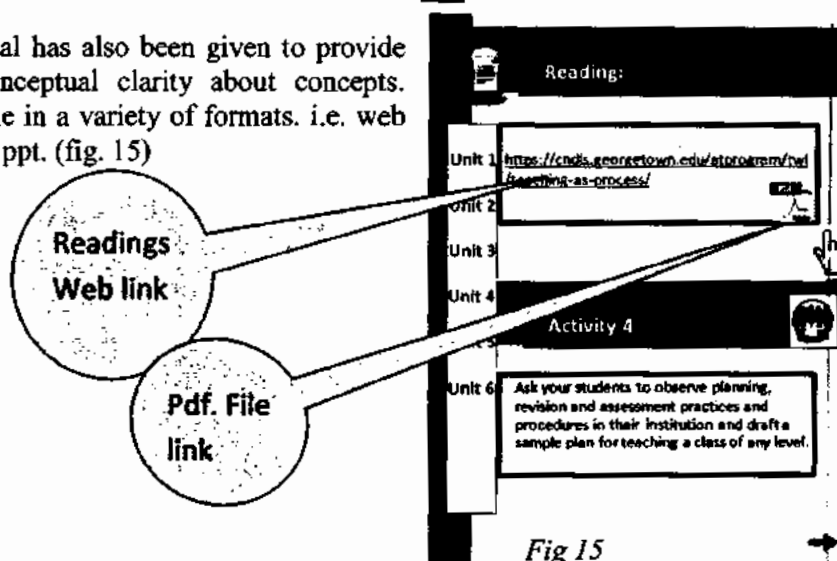
Fig 15

Middle Activities

Many activities have been given during the lesson to make learning more practical, and student centered. It will enhance conceptual clarity and maintain students' interest in the course. (fig. 16)

Fig 16

Unit Exercise

At the end of each unit, a unit exercise has been given as a unit test to check the students understanding and learning. (fig. 17)

Fig 17

278

Summary and transition

In order to conclude the lecture, a section of summary and transition has been given. The important points of the lecture have also been highlighted to provide students an opportunity to revise and preview the concepts that has already been presented. (Fig. 18)
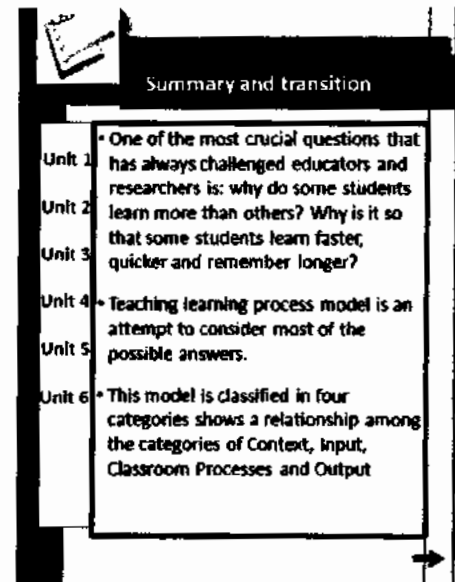
Fig 18

Launching Courseware

This CD is auto run. Simply insert CD in to your system's CD Drive and program will automatically start. Just enjoy and have fun…!

Module Guide

TEACHING LEARNING STRATEGIES AND

REFLECTIVE PRACTICES

International Islamic University

Department of Education

Faculty of Social Sciences

GENERAL INFORMATION

Teaching and learning strategies is one area of teacher education programs which is devoted to teaching principles and techniques that direct the teaching and learning processes. The courseware of teaching learning strategies and reflective practices has been designed for the BS Education Program, offered in the Department of Education, International Islamic University, Islamabad. This discipline is considered very important for them because it makes the connection between teaching process and methodologies on the basic cycle with the teaching technology and classroom implementation practices. The purpose of the course is teacher training and to make the teaching learning in educational institutions effective and sound. Various aspects of effective teaching learning are discussed to enable prospective teachers to use different teaching strategies successfully. The course designed in eight modules and each module is further divided in units, topics and sub topics. This course has aso been developed in a form of courseware for blended and self-paced instruction. Please review the user manual of courseware for more information. The learners will review material related to the topics, for further concept clarifications further readings are also suggested. They can also access to the web resources if connected to the internet. After reading the material they will go to the activity link for practice and self-evaluation exercises. During couching sessions instructor will also provide worksheets, reading material and feedback on the course.

ABOUT THIS MANUAL

This module Guide contains features, functions, and step-by-step instructions on how to teach the course by using the modules for blended and self-paced instruction. This User's Guide will enable you to get familiar with:

- the course outline
- aims and objectives of the course
- modules wise and unit wise aims and objectives
- instructional plan and content presentation according to the instructional plan
- practice activities, feedback and assessment activities

HOW TO USE THIS MANUAL

Users are advised to become familiar with the complete contents of this manual prior to teach the course. Users should also be advised that this manual have proper guidelines for teachers about each and every component of this course so that users can make use of it more effectively and efficiently without any problems and errors.

CONTACT AND ASSISTANCE:

If at any time during the use of courseware you need assistance or technical support, you may contact to the following address:

Alina Raza, Department of Education, IIUI

E-mail: alina.raza@iiu.edu.pk Phone No: 9019841

COURSE INTRODUCTION

Teaching and learning strategies is one area of teacher education programs which is devoted to teaching principles and techniques that direct the teaching and learning processes. The course of teaching and learning strategies has been designed for the BS Education Program. This discipline is considered very important for them because it makes the connection between teaching process and methodologies on the basic cycle with the teaching technology and classroom implementation practices. The purpose of the course is teacher training and to make the teaching learning in educational institutions effective and sound. Various aspects of effective teaching learning are discussed to enable prospective teachers to use different teaching strategies successfully.

Audience Description

The target audience consists of prospective teachers of BS education 7th semester having a background of teaching learning process and other fields related to teacher education however it is not a pre-requisite to the course. The experience level may be heterogeneous from the standpoint of backgrounds, education, age, specific skills, learning style, and prior experience but all are assumed to have the desire to increase their knowledge and/or skills in the area of teaching learning strategies.

The course is developed to identify the desired behaviours that learners would be able to perform and to create learning experiences accordingly. This course contains everything that is necessary to fulfill the instructional needs of the student and the teacher. The course clearly describes the overall purpose and implementation of this course. This course contains features, functions, and step-by-step instructions.

Course objectives

After studying this course, the student will be able to:

13. Explain the concept of teaching, teaching process and learning strategies.
14. Understand relationship among different elements of teaching.
15. Enhance their observation skills during teaching learning process.
16. Understand the role of teacher in teaching learning process.
17. Select suitable teaching-learning strategies during practical classroom settings.
18. Select appropriate teaching strategy according to the nature of the subject matter
19. Develop appropriate lesson plans according to the nature of the subject matter
20. Reflect on their own practices to identify strengths and weaknesses of their teaching method.
21. Improve their teaching in the light of student's feedback and self-reflections.
22. Apply various student centered and teacher centered teaching strategies.

Learning assessment

- Formative assessments: pre-test, need assessments, exercises, activities, quizzes, projects and portfolio development
- Summative assessment: post-test and evaluation Performa

Instructional strategies

The course will be an instructor-led course with a blended approach along with interactive modules in a form of courseware. The following methods will be employed at various places in the course:

- Demonstration
- Discussion
- Question and answer exercises
- Games and activities
- Case studies
- Project work
- Role plays
- Simulations

Instructional Media requirement

Following media will be utilized in this course:

- Course guides
- Modules
- Multimedia
- Computers/laptops
- Slide presentation with graphics
- Readings
- Paper and pencil

Time

This is a 3 credit hour course and each session will design according to 90 minute per session twice a week.

Course structure description

The course is designed in eight segments and each segment is designed in a form of module. Each module has its units and further topics and sub topics. The learners will review material related to the topics, for further concept clarifications they can use web resources to have access to extra reading material. After reading the material they will go to the activity for practice and self evaluation exercises. Other features of the course are:

- Table of contents
- Unit wise objective
- Reading material
- References
- Visuals/Graphics
- videos
- Exercises
- User manual
- Module guide

Course outline

This course has eight modules and will cover following areas:

Module 01: Teacher and Teaching

1.1 Concept of effective teaching

1.2 Main features/characteristics of teaching

1.3 Personal and professional characteristics of effective teacher

1.4 Teaching as a profession

      1.4.1 Roles and responsibilities

      1.4.2 Demands and challenges

Module 02 Teaching Process

2.1 Process of teaching

2.2 Variables of teaching

2.3 Active learning

2.4 Characteristics/principles/laws of learning

2.5 Information processing model

2.6 Teaching and learning process

Module 03: Approaches to Teaching

3.1 Concept of teaching methods and strategies

      3.1.1 Andragogy and pedagogy

      3.1.2 Teacher centered and student centered teaching

      3.1.3 Matching teaching styles with your students learning styles

3.2 Lecture Method

3.3 Demonstration Method

3.4 Discussion Method

3.5 Problem solving strategy/Inquiry

3.6 Use of ICTs/Computer Assisted Instructions

3.7 Project Method

3.8 Team Teaching

3.9 Story Telling

3.10 Role Play

3.11 Micro Teaching

3.12 Cooperative learning

284

Module 04: Managing Teaching

4.1 Identifying the learners' needs and characteristics

4.2 Approaches to lesson planning

4.3 Need for lesson planning

4.4 Types of lesson planning

4.5 Daily, Weekly and Yearly Plans

4.6 How Scheme of Studies be formulated weekly

Module 05: Instructional Technologies
5.1 Definitions, concept and nature of teaching aids
5.2 Instructional technology and its importance
5.3 Selection and use of appropriate teaching aids
5.4 Types/kinds of educational technology

5.4.1 Electronic (Radio, TV, Projectors and Computers)

5.4.2 Non electronic (Boards, Charts, Models, Posters, etc.)

5.4.3 Print (Books, Journals, Newspapers and Magazines etc.)

5.4.4 Social media (Facebook, Tweeter etc.)

Module 06: Classroom Management

6.1 Concept of Classroom management

6.2 Positive class-room environment

6.3 Classroom seating arrangement

6.4 Classroom Climate

6.5 Classroom decoration

Module 07: Reflective Practice

7.1 Meaning and nature of Reflective Practices

7.2 Process of Reflection

7.3 Major techniques and strategies:

7.3.1 Critical incident analysis

7.3.2 Reflective learning Journals

7.3.3 Peer coaching

7.3.3 Action research

7.3.5 Portfolios as a source of reflection

7.4 Skills for reflection

7.5 Systematic reflection throughout the teaching-learning process

Module 8 Models of Reflective Practices:

8.1 Schon's Model

8.2 Gibbs's Model

8.3 Kolb's Model

8.3 Johns Ten "Cs" model

Instructional plan

Course Title	Contents	Objectives	Activities
Teaching Learning Strategies and Reflective Practices	Course Introduction Course Goals/ Outcomes	11. Explain the concept of teaching, teaching process and learning strategies. 12. Understand relationship among different elements of teaching. 13. Enhance their observation skills during teaching learning process. 14. Understand the role of teacher in teaching learning process. 15. Select suitable teaching-learning strategies during practical classroom settings. 16. Select appropriate teaching strategy according to the nature of the subject matter 17. Develop appropriate lesson plans according to the nature of the subject matter 18. Reflect on their own practices to identify strengths and weaknesses of their teaching method. 19. Improve their teaching in the light of student's feedback and self-reflections.	• Orientation • Of the course • Warm-up activity: • Class introduction • expectations from this course

286

		20. Apply various student centered and teacher centered teaching strategies.	

Module 1 Teacher and Teaching

Title	Contents	Objectives	Activities
Module 01: Teacher and Teaching	• Module Introduction • Module Outcomes	7. familiar with the basic concept, principles and characteristics of teaching and teachers. 8. distinguish between the personal and professional characteristics of an effective teacher. 9. explore ways to become an effective teacher. 10. understand the major roles of a professional teacher 11. describe various responsibilities of a teacher demonstrate different roles of a teacher.	Each unit contains following activities based on Gagne's nine events of instruction • Introductory Activity • Informing about session objectives • PK Activity • Lesson demonstration through appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise • Summary and transition
Unit 1 Concept of effective teaching	1.7 definition of teaching 1.8 concept of teaching 1.9 effective teaching	5. explain the definition of teaching 6. discuss the concept of teaching 7. identify and enlist the components of effective teaching 8. draw a model of effective teaching	
Unit 2 Main features/charact eristics of teaching	2.7 planning and preparation 2.8 the classroom environment 2.9 instruction professional responsibilities	5. Conceptualize the main features and characteristics of teaching 6. Design planning and preparation documents for class 7. Create a conducive learning environment in class 8. Demonstrate effective instruction with students in class	

		Classify professional responsibilities of a teacher in various domains	
Unit 3 Characteristics of effective teacher	3.1 personal characteristics 3.2 professional characteristics	4. recognize personal characteristics of teachers 5. demonstrate professional characteristics of teachers compare personal and professional characteristics of teachers	
Unit 4 Teaching as a profession	4.1 Concept of profession 4.2 Roles and responsibilities 4.2.1 Code of Ethics 4.2.2 Accountability 4.3 Demands and challenges	5. explain the concept of profession 6. analyze roles and responsibilities of a professional teacher 7. interpret and develop a code of ethics 8. categorize demands and challenges of a professional teacher	

Module 2 Teaching Process

Title	Contents	Objectives	Activities
Module 2 Teaching Process	Module Introduction Module Goals/ Outcomes	5. Explain the process of teaching and its intervening variables 6. Design and apply active learning strategies in classroom situation 7. Interpret characteristics/principles/laws of learning 8. Conceptualize information processing model with its application in real situation	Each unit contains following activities based on Gagne's nine events of instruction • Introductory Activity • Informing about session objectives • PK Activity • Lesson demonstration through
Unit 1 Process of teaching	1.1 Planning 1.2 Revision	5. Conceptualize the concept about process	

	1.3 Assessment 1.4 Implementation	of teaching and its components 6. Determine planning procedures and goals at different levels of teaching 7. Plan revision of lesson to improve teaching process 8. Develop assessment strategies to evaluate students	appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise • Summary and transition
Unit 2 Variables of teaching	2.1 Variables of teaching process 2.2 The Transmission Model of Teaching and Learning 2.3 Lowman's Two-Dimensional 2.4 Teaching-Learning Transactional Model of College Teaching 2.5 Groccia's Model for Understanding Teaching and Learning	4. identify variables of teaching process that effect in teaching and learning 5. develop and explain models of teaching processes 6. compare various models reflecting teaching and learning processes.	
Unit 3 Active learning	3.1 What is learning? 3.2 Levels of learning 3.2 Active learning model 3.3 Dale cone of experiences 3.4 Active learning strategies	6. Explain the concept of learning 7. Apply the levels of learning in classroom situation 8. Draw and analyze active learning model 9. Interpret Dale cone of experiences 10. Create active learning strategies	
Unit 4 Characteristics/ principles/laws of learning	4.1 Readiness 4.2 Exercise 4.3 Effect 4.4 Primacy 4.5 Intensity 4.6 Recency	4. conceptualize laws of learning by developing a concept map 5. design activities according to laws of learning to conduct in classroom	

		6. apply laws of learning in teaching learning process	
Unit 5 Information processing	5.1 Basic assumptions 5.2 Computer-mind analogy 5.3 The information processing system 5.4 Stage model of information processing	• Understand the concept of Information processing and the basic assumptions about it • Analyze the Computer-mind analogy • Interpret the information processing system Draw and discuss a Stage model of information processing	
Unit 6 Teaching and learning process	**6.1**Teaching and learning process Model **6.2 Context** **6.3 Input** **6.4Classroom Processes** **6.5Output**	4. conceptualize teaching and learning process 5. develop a teaching and learning process model 6. explain variables in teaching and learning process model such as **context, input, Classroom processes and output**	

Module 03: Approaches to Teaching

Unit No.	Unit Title	Practical activity for the unit (Quiz/Assignment/ Presentation etc)	
Title	**Contents**	**Objectives**	**Activities**
Module 03: Approaches to Teaching	Module Introduction Module Goals/ Outcomes	4. understand the basic concept of methods and techniques of teaching. 5. distinguish between different methods of teaching (lecture method, classroom method, discussion methods, demonstration method, inquiry, problem	Each unit contains following activities based on Gagne's nine events of instruction • Introductory Activity • Informing about session objectives

290

		solving, discovery method, assignment and project method)	• PK Activity
		6. apply the different methods and techniques of teaching.	• Lesson demonstration through appropriate methodology
Unit 01 Concept of teaching methods and strategies	1.1 Andragogy and pedagogy 1.2 Teacher centered and student centered teaching 1.3 Matching teaching styles with your students learning styles	5. understand the concept of teaching methods and strategies 6. differentiate between the concepts of andragogy and pedagogy 7. compare teacher centered and student centered teaching 8. identify various learning styles	• Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise • Summary and transition
Unit 02 Lecture method	2.1 Concept of Lecture Method 2.2 Application of Lecture Method 2.3 Advantages and Disadvantages of Lecture Method	1. understand the basic concept of lecture method 2. identify the advantages and disadvantages of lecture method 3. apply lecture method in teaching.	
Unit 03 Demonstration method	1.9 Concept of Demonstration Method 1.10 Steps needed to conduct a demonstration lesson 1.11 Advantages of Demonstration Method 1.12 Disadvantages of Demonstration Method	4. understand the basic concept of demonstration method 5. identify the advantages and disadvantages of demonstration method 6. apply demonstration method in teaching.	
Unit 04 Discussion method	4.11 Concept of Discussion Method 4.12 Types of Discussion Method	4 understand the basic concept of Discussion Method 5 identify the advantages and	

	4.13 Lesson development 4.14 Advantages of Discussion Method 4.15 Disadvantages of Discussion Method		disadvantages of Discussion Method
		6	apply Discussion Methodin teaching.
Unit 05 Problem solving	5.1 Concept of problem solving method	5	Understand the concept of problem solving method
	5.2 Problem Solving Cycle	6	Explain Problem Solving Cycle
	5.3 Techniques for Error Free Problem Solving	7	Apply techniques for error free problem solving
	5.4 Types of Problems	8	Identify types of problems
Unit 06 Use of ICT/Computer Assisted Instruction	6.1 Concept of Computer-assisted instruction	5	Understand the concept of Computer-assisted instruction
	6.2 History of CAI	6	Describe the history of CAI
	6.3 Common Categories of CAI	7	Differentiate the common Categories of CAI
	6.4 Advantages of CAI		
	6.5 Disadvantages of CAI	8	Identify the advantages and disadvantages of CAI method.
Unit 07 Project method	7.1 Concept of Project Method	4	understand the basic concept of project method
	7.2 Phases of Project Method	5	identify the advantages and disadvantages of project method
	7.3 Advantages and Disadvantages of Project Method		
		6	apply project method in teaching.
Unit 08 Team teaching	8.1 Concept of Team Teaching	4	understand the basic concept of team teaching
	8.2 Categories of Team Teaching	5	identify the advantages and disadvantages of team teaching
	8.3 Models of Team Teaching		
	8.4 Advantages and Disadvantages of Team Teaching	6	apply team teaching

Unit 09 Story telling	9.1 Concept of Storytelling 9.2 Storytelling and intercultural understanding 9.3 Techniques of story telling 9.4 Performance skills 9.5 Advantages of Storytelling	6 7 8 9 10	Understand the concept of storytelling Develop intercultural understanding through storytelling Apply techniques of story telling Demonstrate storytelling performance skills Identify advantages of storytelling	
Unit 10 Role play	10.1 Concept of Role play 10.2 Steps to conduct Role-Play 10.2.1 Preparation for Role-Play 10.2.2 Conducting the Role-Play 10.2.3 Debriefing 10.2.4 Other ways of using role play 10.3 Key for Success 10.4 The Teacher's Role 10.5 Advantages of Role-Play 10.6 Disadvantages of Role-Play	5 6 7 8	Understand the concept of Role-Play Demonstrate Role-Play and following all steps to conduct the role-play Observe the role of teacher during role-play Identify the advantages and disadvantages of Role-Play	
Unit 11 Micro Teaching	11.1 History of Micro-teaching 11.2 Concept of microteaching 11.3 Preparation for a micro-lesson session 11.4 Re-planning, re-presenting and feedback 11.5 Teaching skills 11.6 Video confrontation 11.7 Advantages of Microteaching	6 7 8 9 10	Conceptualize microteaching as a process Plan, design and conduct micro-lesson session Demonstrate various Teaching skills through micro-lesson Manage video confrontations during micro-lesson session Identify advantages of Microteaching	
Unit 12 Cooperative Learning	12.1 Concept of cooperative learning 12.2 Types of Cooperative Learning	5 6	explain the concept of cooperative learning elaborate various types of cooperative learning	

| | 12.3 Elements of Cooperative Learning
12.4 Cooperative learning techniques
12.5 Advantages | 7 design cooperative learning strategies keeping in view elements of cooperative learning
8 demonstrate Cooperative learning techniques | |

Module 04: Managing Teaching

Title	Contents	Objectives	Activities
Module 04 Managing Teaching	Module Introduction Module Goals/ Outcomes	5. Identify learners' needs and characteristics. 6. Design lesson plans according to the various approaches. 7. Understand the need of lesson planning in teaching and learning situation 8. Construct different types of lesson planning (weekly planning, Daily planning, Unit planning, Course planning)	Each unit contains following activities based on Gagne's nine events of instruction • Introductory Activity • Informing about session objectives • PK Activity • Lesson demonstration through appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise Summary and transition
Unit 01 Identifying the learners' needs and characteristics	1.1 Student's personality 1.2 Students' temperament 1.3 Students' self concept 1.4 Self efficacy 1.5 Students' motivation 1.6 Students' concentration 1.7 Students' critical thinking 1.8 Students' learning styles	5. Identifying the learners' needs and characteristics according to their personality, temperament, self concept and efficacy 6. Understand Students' motivation to apply various motivational techniques for Students' concentration 7. Develop critical thinking skills in students 8. Identify Students' learning styles	
Unit 02 Approaches to lesson planning	2.1 Forward Design 2.2 Central Design 2.2 Backward Design	4. Conceptualize various approaches to lesson planning	

		5. Construct lesson plans according to Forward Design, Central Design and Backward Design	
Unit 03 Need for lesson planning	3.1 planning in teaching 3.2Decisions involved in planning lessons 3.3 setting learning objectives 3.4 teaching learning activities 3.5 assessment strategies	1. Understand the importance of planning in teaching 2. Manage teaching time according to lesson 6. Draw learning objectives according to blooms taxonomy	

Unit 04 Types of lesson planning	4.1 Short term plans
	  4.1.1 Daily plans
	  4.1.2 Weekly plans
	4.2 Long term plans
	  4.2.1 Monthly plans
	  4.2.2 Yearly Plans
	4.2.3 Scheme of studies
		3. Develop short term and long term plans according to the requirement of teaching
		4. Develop scheme of studies to manage course contents and activities	

Module 05: Instructional Technologies

Title	Contents	Objectives	Activities
Module 05 Instructional Technologies	Module Introduction Module Goals/ Outcomes	4. understand the basic concept and importance of instructional technology and its importance. 5. distinguish between the electronic, display and print media. 6. prepare and use of inexpensive aids for teaching	Each unit contains following activities based on Gagne's nine events of instruction • Introductory Activity • Informing about session objectives • PK Activity • Lesson demonstration through appropriate methodology
Unit 01 Instructional technology	2.1 definition and concept of Instructional technology	4. understand the concept of Instructional technology 5. analyze the development of instructional	

295

	2.2 history of instructional technology 2.3 rational of using instructional technology	technology in historical perspective 6. conceptualize the importance and need of using instructional technology	• Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise Summary and transition
Unit 02 Planning, Selecting, and Using Instructional technology	3.1 Planning of Instructional technology 3.2 Selection of Instructional technology 3.3 Uses of Instructional technology	4. Plan of Instructional technology for teaching and learning 5. Select of Instructional technology for teaching students 6. Use Instructional technology to facilitate teaching and learning process and students learning	
Unit 03 Types/kinds of instructional technology	4.1 Electronic (Radio, TV, Projectors and Computers) 4.2 Non electronic (Boards, Charts, Models, Posters, etc.) 4.3 Print (Books, Journals, Newspapers and Magazines etc.) 4.4 Social media (Facebook, Tweeter etc.)	5. Identify the types of instructional technology 6. Differentiate the uses of various instructional technologies according to the teaching learning situation 7. Prepare basic visual aids for teaching 8. Evaluate the effectives of using various instructional technologies in teaching and learning process	

Module 06: Classroom Management

Title	Contents	Objectives	Activities
Module 06: Classroom Management	Module Introduction Module Goals/ Outcomes	5. understand the basic concept of management. 6. distinguish between the term management and classroom management. 7. Apply the class-room management techniques to	Each unit contains following activities based on Gagne's nine events of instruction • Introductory Activity

296

		develope positive classroom environmnt 1. Describe the importance of classroom decoration to establish effective classroom climate	• Informing about session objectives • PK Activity • Lesson demonstration through appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise Summary and transition
Unit 01 Concept of Classroom management	1.1 Classroom management 1.2 Classroom organization 1.3. Manager vs teacher	4. Conceptualize the concept of classroom management 5. Compare classroom management and organization 6. Develop skills as a classroom manager and organizer	
Unit 2 Positive class-room environment	2.1 Classroom seating arrangement 2.2 Classroom Climate 2.3 Classroom decoration 2.4 Classroom discipline	5. identify variables of effective classroom environment 6. develop positive classroom climate in class 7. Conceptualize the importance of classroom decoration 8. Develop rules and regulations to maintain classroom discipline	
Unit 3 Classroom management styles	3.1 Authoritarian style 3.2 Indifferent style 3.3 Authoritative style 3.4 Tolerant style	5. Explain the types of classroom management 6. Distinguish between different management styles 7. Apply the various management styles in classroom situation 8. Create active classroom management strategies	
Unit 4 Managing difficult behaviors	4.1 What is behavior 4.2 Behavior modification techniques	4. conceptualize the concept of behavior 5. apply behavior modification techniques	

		6. design behavior modification activities for specific purposes	

Module 07: Reflective Practice

Title	Contents	Objectives	Activities
Module 07 Reflective Practice	Module Introduction Module Goals/ Outcomes	6. Understand meaning and nature of Reflective Practices 7. Describe the process of Reflection 8. Apply Major techniques and strategies of reflection 9. Demonstrate various skills for reflection 10. Evaluate systematic reflection throughout the teaching-learning process	Each unit contains following activities based on Gagne's nine events of instruction • Introductory Activity • Informing about session objectives • PK Activity • Lesson demonstration through appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise • Summary and transition
Unit 1 Meaning and nature of Reflective Practices	1.1 Definitions of reflective practices 1.2 Scope of reflective practices	4. Conceptualize the various definitions of reflection 5. Understand the concept and scope of reflective practices	
Unit 2 Process of Reflection	2.1 Reflection as a process 2.2 The reflection cycle	4. Explain reflection process 5. Observe a reflective process in classroom 6. Analyze the reflection cycle	
Unit 3 Major techniques and strategies	3.1 Critical incident analysis 3.2 Reflective learning Journals 3.3 Peer coaching 3.3 Action research 3.4 Portfolios as a source of reflection 3.5 Skills for reflection 3.6 Systematic reflection throughout the teaching-learning process	4. Identify various reflective strategies 5. Design activities to implement reflective practices in classroom 6. Apply different types of reflective practices in classroom	

Unit 8 Models of Reflective Practices

Title	Contents	Objectives	Activities
Unit 8 Models of Reflective Practices	Module Introduction Module Goals/ Outcomes	4. Understand models of reflective practices specifically Schon's Model, Gibbs's Model, kolb model and Johns Ten "Cs" model 5. Differentiate and compare different models of reflective practices 6. Apply models of reflective practices according to classroom situations	Each unit contains following activities based on Gagne's nine events of instruction • Introductory Activity • Informing about session objectives • PK Activity • Lesson demonstration through appropriate methodology • Practice activities • Readings • Diagrams • Visuals • Case studies • Reflections • Feedback • Unit exercise • Summary and transition
Unit 1 Schon's Model	1.1 Model description 1.2 Components of the model 1.3 Application of the model	3. Conceptualize schon's model of reflection 4. Differentiate and compare schon's model of reflection from other models 6. Apply schon's model of reflection in classroom situations	
Unit 2 Gibbs's Model	2.1 Model description 2.2 Components of the model 2.3 Application of the model	4. Conceptualize Gibbs's Model of reflection 5. Differentiate and compare Gibbs's Model of reflection from other models 6. Apply Gibbs's Model of reflection in classroom situations	
Unit 3 Kolb model	3.1 Model description 3.2 Components of the model 3.3 Application of the model	4. Conceptualize Kolb Model of reflection 5. Differentiate and compare Kolb Model of reflection from other models 6. Apply Kolb Model of reflection in classroom situations	
Unit 4 Johns Ten "Cs" model	4.1 Model description 4.2 Components of the model	3. Conceptualize Johns Ten "Cs" Model of reflection	

	4.3 Application of the model	4. Differentiate and compare Johns Ten "Cs" Model of reflection from other models Apply Johns Ten "Cs" lb Model of reflection in classroom situations	

Delivery formats and Authoring tools

The modules will be developed in a courseware format that can be uploaded online or burned in CD format according to the learners comfort with delivery channels. To keep their focus on learning instead of technical difficulties the technical complexity of the course is very basic according to the need of the students and course requirement. Keeping in view the internet connectivity issues or electricity shortfalls, alternatives would be arranged for undisrupted learning process with easy access. Basic software MS Office, MS Word and MS PowerPoint would be used to develop interactive courseware/modules to make this experience user friendly for students.

Technical requirements

There are few technical requirements of the course in form of hardware and software.

Hardware	Software
- Computers systems, laptops - CD ROM - Multimedia - Speakers or Headset - Internet - Multiple copies of CDs	- Operating system, windows 2010, XP - Internet explorer, Mozilla Firefox, - Flash player, window media player, real player - Adobe acrobat reader, MMB, Photoshop - MS office 2007
Other requirements	
- Paper , pencil, worksheets, - Material for other activities	
Organizational requirements	
- Furniture - Classroom - Whiteboard - Computer lab	

CourseTitle

When you will open the courseware, the title page of the course will appear on the screen having title of the course and course code. (fig.1). There is a hyperlinked blue icon on bottom right of the title page. Click on it to proceed to the next pages having information about the CD, course description, course objectives, contact and assistance details and course contents
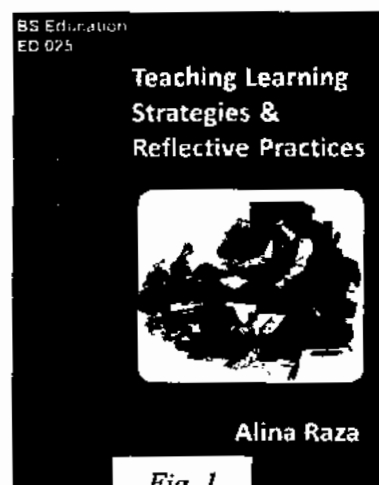
Fig. 1

Course contents

This course is divided in eight segments and each segment is designed in a form of module. All eight modules are hyperlinked in course content page and can be accessed by just clicking on it.
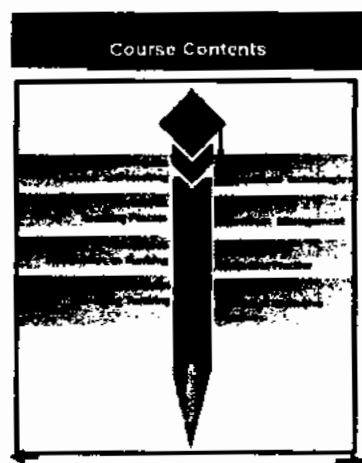
Fig. 2

Module title

Each module has its title page having module title, module number and hyperlinked icons to get direct access of home page, course objectives, content page etc. Next and back links are also made to proceed back and forth accordingly.
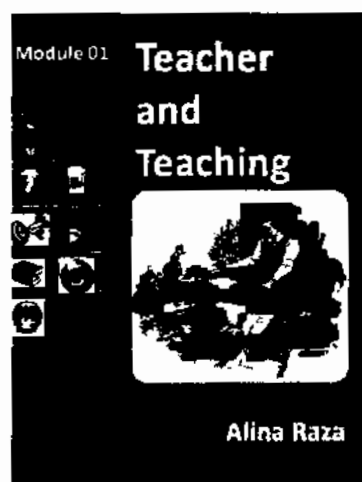
Fig. 3

Icon guide

In this courseware various types of icons and symbols has been used to make it interesting, understandable and easy to work on it. The icon guide page has been designed after the very next to module title page so that the meaning and purpose of each and every symbol used in this courseware can be clarified to the users at the very beginning to avoid any inconvenience. Audio and written instructions are also given. (Fig. 4)
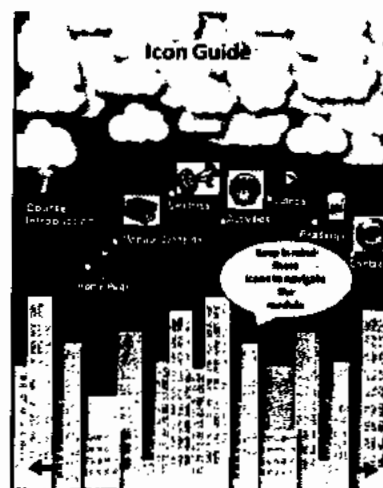
Fig. 4

Module introduction

Each module starts with the introduction of the module and further reading about the concept if required. The link of further reading is given after the introduction. (Fig. 5)
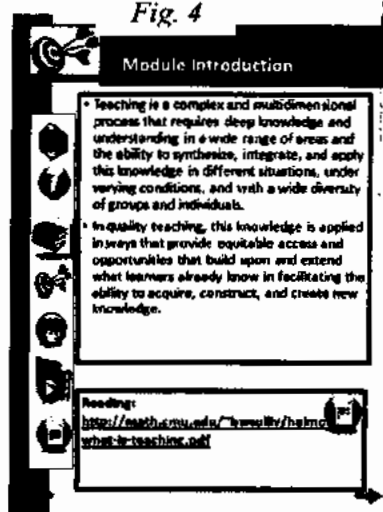
Fig. 5

Module objectives

After introduction, the objectives of each module have been displayed to familiarize students about the module outcomes. (fig. 6)

302
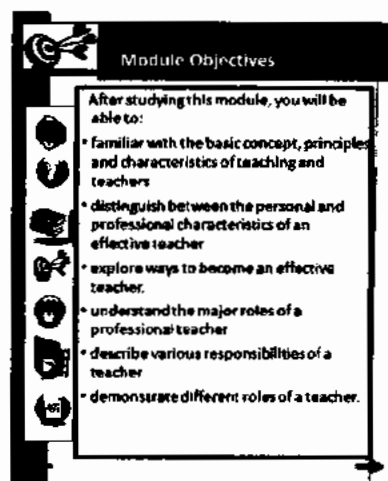
Fig. 6

Module Contents page

The module is further divided in units and in order to access units of the module, a module content page has been designed. Each unit is hyperlinked in a module content page and can be accessed just by clicking on the given links. (Fig. 7)
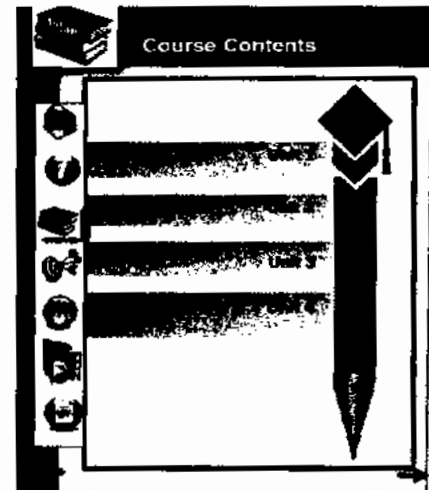
Fig. 7

Unit content page

Each unit is further divided in topics and subtopics. After clicking on unit link the unit content page will appear having the topics included in the unit. Links to access other units of modules are also given on each page so that any unit can be open at any stage. Next and back links are also given on each page of module for simple navigation. (Fig. 8)
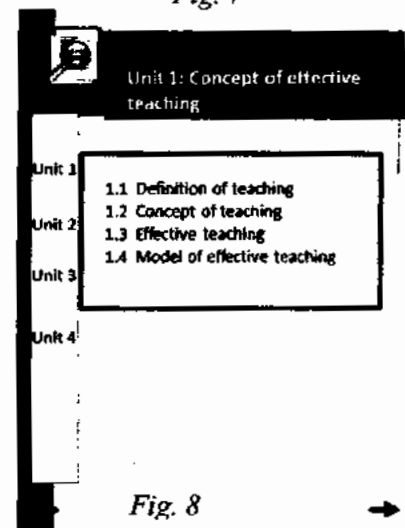
Fig. 8

Unit Introduction

In order to have an effective start, each unit has an introduction page to create a background of concepts included in session. The introduction page has also links of all units including back and next links. (Fig. 9)
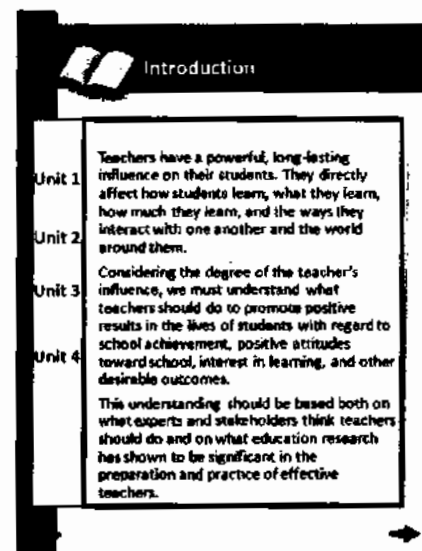
Unit activities

Activities are also included in each unit to make the teaching learning experience interesting, practical and meaningful. Activities are divided in such a way that each unit has beginning activities, middle activities and ending activities. (Fig. 10)

Introductory activity

There is an introductory activity after each unit introduction page to grasp students' attention and develop their interest in the topic. Various forms of activities have been selected and designed according to the nature of the topic. (fig. 10)
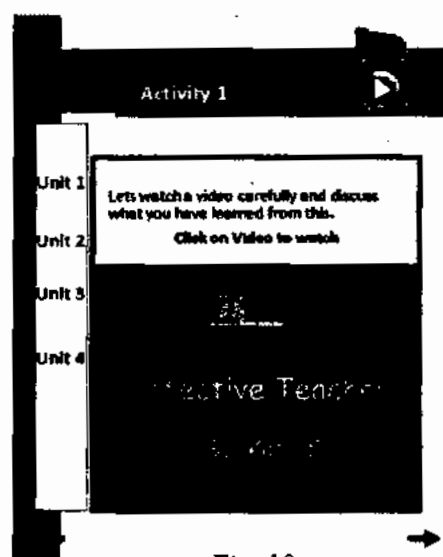
Fig. 10

Unit objectives

In order to familiarize the outcomes of each unit, the unit objectives has been designed and displayed according to the nature and requirement of the subject. (fig. 11)
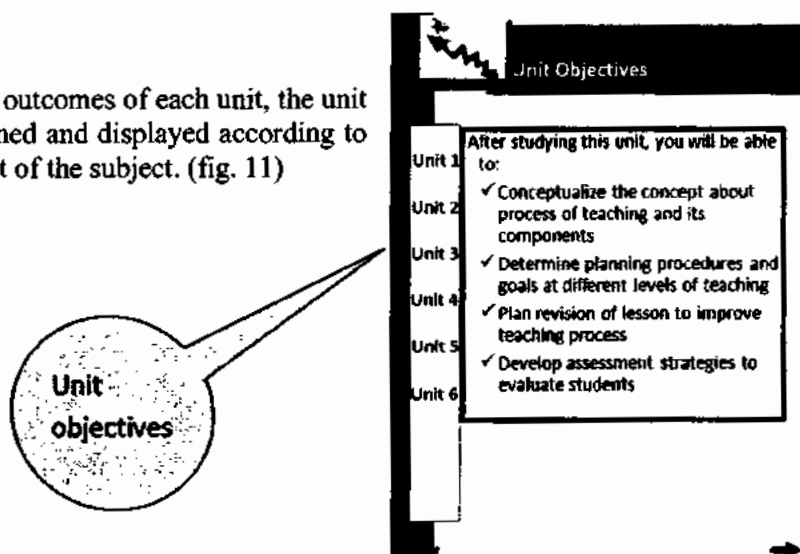
Fig. 11

304

PK activity

After introducing the objectives of the unit, there is an activity to check the previous knowledge of the students. Students will go to the next level after completion of that activity. (fig. 12)
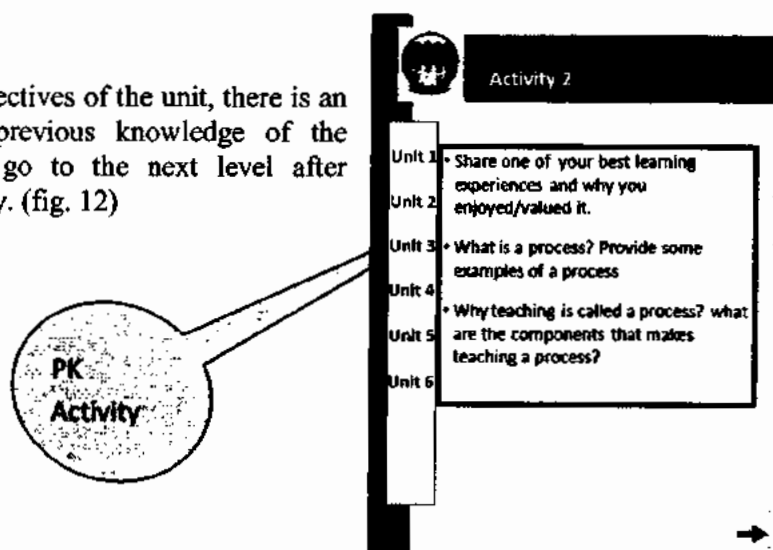
Fig. 12

Content display

The details on various topics and sub topics has been given with appropriate details in the courseware but there are other options as well through which Users can get additional information if required. (fig. 13)
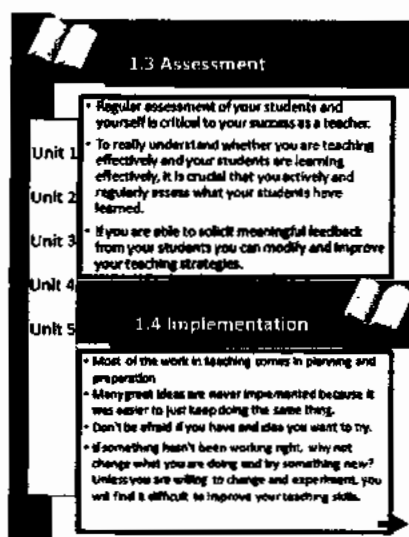
Fig. 13

Readings

Additional reading material has also been given to provide maximum detail and conceptual clarity about concepts. Readings can be accessible in a variety of formats. i.e. web link, pdf. file, word file or ppt. (fig. 14)
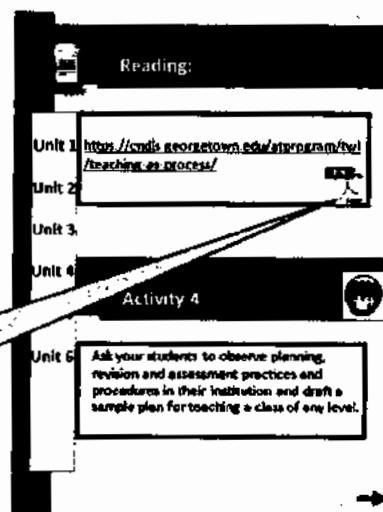
Fig. 14

Middle Activities

Many activities have been given during the lesson to make learning more practical, and student centered. I will enhance conceptual clarity and maintain students' interest in the course. (fig. 15)
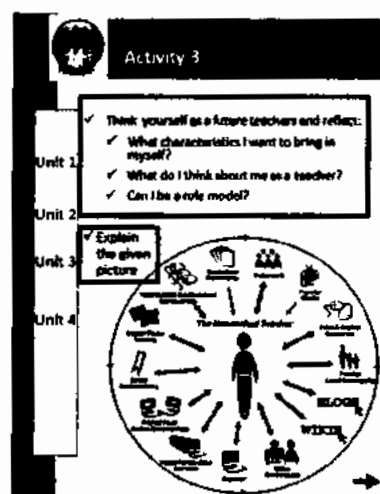
Fig. 15

Unit Exercise

At the end of each unit, a unit exercise has been given as a unit test to check the students understanding and learning. (fig. 16)
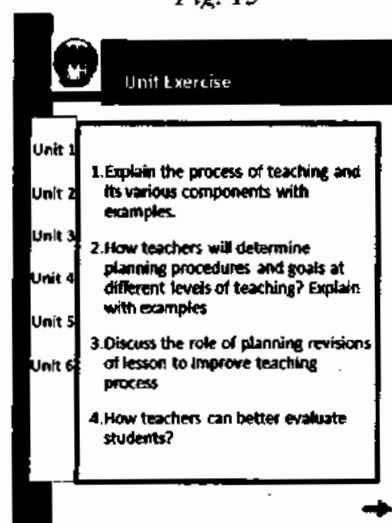
Fig. 16

Summary and transition

In order to conclude the lecture, a section of summary and transition has been given. The important points of the lecture have also been highlighted to provide students an opportunity to revise and preview the concepts that has already been presented. (Fig. 17)
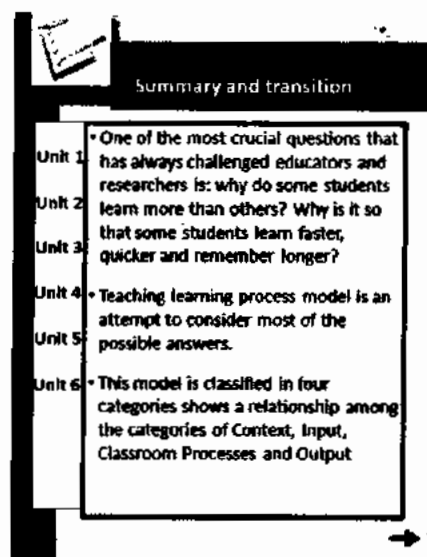
Fig. 17

Launching Courseware

This CD is auto run. Simply insert CD in to your system's CD Drive and program will automatically start. Just enjoy and have fun...!

APPLICATION OF ANALYSIS DESIGN, DEVELOPMENT, IMPLEMENTATION AND EVALUATION (ADDIE) MODEL FOR DEVELOPING INSTRUCTIONAL DESIGN IN TEACHER EDUCATION

Need Assessment Questionnaire

The study is to focus on the following objectives:

1. To conduct a need analysis of the target group as required in ADDIE model;
2. To design and develop instructional modules based on Gagne's nine events of instruction;
3. To deliver instruction through implementation of Instructional design in teaching a course on teaching and learning strategies;
4. To evaluate the utility and effectiveness of Instructional System Design on students learning.

Step 1: Need Analysis

First objective of this study was to conduct a need analysis of the target group as required in ADDIE model. Following objectives are intended to achieve under need analysis stage.

- To identify the intended audience in terms of:
  - the abilities, preferences and motivation of the students
  - Previous experience of learning
  - Current level of knowledge and skills (pre-post test)
  - Students attitude towards the learning environment
  - Their expectations from the course
  - Format of instruction
- To identify available and required resources for students
- Other Constraints

A detailed questionnaire has been designed to conduct need analysis in above mention parameters

Section A: Student Profile

7. Batch: _____
8. Current cumulative GPA: _____
9. Institution:
10. Have you taken the basic course of computers? Specify in which semester:_____

Instructions: this section is about your previous experience of learning with various teaching methodologies throughout semesters. Think about your previous learning experience with your teachers in the courses you have taken in previous semesters and respond this section accordingly.

Section B: Previous experience of learning (teaching methodology analysis)	None of the teachers	Some of teachers	Most of the teachers
11. Before beginning the lecture, teachers try to capture our attention by using various techniques	☐	☐	☐
12. Effectively introduces the lecture	☐	☐	☐
13. Outlines the objectives (Informs us about the aims and objectives of every session)	☐	☐	☐
14. Connects the previous knowledge of the learners with new information to help them understand new concepts	☐	☐	☐
15. Delivers the lectures in an organized and coherent way	☐	☐	☐
16. Contextualizes the contents (connects the contents to the real-life situation)	☐	☐	☐
17. Teachers uses following teaching methods to enhance my learning:			
a. Lecture	☐	☐	☐
b. Discussion	☐	☐	☐
c. Demonstration	☐	☐	☐
d. Problems solving	☐	☐	☐
e. Project method	☐	☐	☐
f. Simulation and games	☐	☐	☐
g. Story telling	☐	☐	☐

Section B: Previous experience of learning (teaching methodology analysis)	None of the teachers	Some of teachers	Most of the teachers
h. Role play	☐	☐	☐
i. Computer assisted instruction	☐	☐	☐
j. Group work and collaborative learning activities	☐	☐	☐
18. The teacher provides guidance to complete assignments	☐	☐	☐
19. Provides an opportunity of drill and practice in class for better conceptual clarity	☐	☐	☐
20. Provides a timely feedback	☐	☐	☐
21. Conducts quizzes and exercises on regular basis to assess the learning outcome	☐	☐	☐
22. Course instructor provides me reference material and other supporting tools to enhance the learning	☐	☐	☐
23. Concludes every lecture by revising and summarizing important points	☐	☐	☐
24. Uses visual material and illustrations	☐	☐	☐
25. Give examples to explain the topic	☐	☐	☐
26. Make the class interactive by engaging the learners	☐	☐	☐
27. Gives individualized instructions as per an individual's style and pace of learning	☐	☐	☐
28. Uses blended learning approach (i.e. computer based as well as face-to-face) to make the learning effective	☐	☐	☐

Instructions: This section is about your previous experience of learning while taking different courses and learning various types of course content throughout semesters. Think about your previous learning experience with the material you have learned in the courses you have taken in the previous semesters and respond this section accordingly.

Section C: Previous experience of learning (Course analysis)	None of the courses	Some of the courses	Most of the courses
29. The contents were easy and understandable	☐	☐	☐
30. Every new concept was initiated with an introduction to grab the learners' attention	☐	☐	☐
31. The material met its objectives	☐	☐	☐
32. The contents had had practical relevance	☐	☐	☐
33. Each component connected previous knowledge to help understand the concepts	☐	☐	☐
34. The courses were organized	☐	☐	☐
35. The courses included the guideline for different tasks and activities	☐	☐	☐
36. The courses provided with an opportunity of drill and practice	☐	☐	☐
37. The courses provided feedback on various tasks	☐	☐	☐
38. The courses had had plenty of quizzes and exercises	☐	☐	☐
39. The courses recommended reference material and supporting tools	☐	☐	☐
40. The courses were supported by a variety of visuals and illustrations.	☐	☐	☐
41. The courses were supported by a variety of examples.	☐	☐	☐
42. The courses are supported by variety of examples.	☐	☐	☐
43. The courses were interactive to engage the learners.	☐	☐	☐
44. The courses had had the provision for individualized instructions	☐	☐	☐

Section C: Previous experience of learning (Course analysis)	None of the courses	Some of the courses	Most of the courses
45. The courses involved blended learning approach (i.e. computer based as well as face-to-face) to make the learning interesting.	☐	☐	☐

Section D: Students Attitude towards Learning Environment	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
46. Do you think that the friendly environment in the class helps you learn better?.	☐	☐	☐	☐	☐
47. It is better for the teacher to be little strict, at times.	☐	☐	☐	☐	☐
48. Making class more integrative helps learn better.	☐	☐	☐	☐	☐
49. Informal setting of the class is good for the learning.	☐	☐	☐	☐	☐
50. Do you think class should have a traditional look—where teacher is standing on a higher podium?	☐	☐	☐	☐	☐
51. Do you think that the use of audio-visual aids helps in creating better classroom environment?	☐	☐	☐	☐	☐
52. An interesting initiation on the part of the teacher not only helps catching students' attention but also sets up a friendly environment for the learning.	☐	☐	☐	☐	☐
53. Do you think that the teacher's encouraging attitude towards students' questions helps in making the environment better for learning?	☐	☐	☐	☐	☐
54. Splitting students into smaller/bigger groups helps in creating good learning environment.	☐	☐	☐	☐	☐
55. Individual attention given to the students by the teacher can contribute in creating better learning environment	☐	☐	☐	☐	☐
56. Do you think computer-based learning can help build better environment in the class?	☐	☐	☐	☐	☐

312

57. What instructional technologies have you used in class ?	Never Rarely	Less than half the time	About half the time	More than half the time	Almost always
Personal computers/Laptop	☐	☐	☐	☐	☐
Video conferencing systems	☐	☐	☐	☐	☐
Learning Management Systems/VLE (WebCT, Moodle etc.)	☐	☐	☐	☐	☐
Audio equipment (including software)	☐	☐	☐	☐	☐
Videos	☐	☐	☐	☐	☐
Digital cameras	☐	☐	☐	☐	☐
Web searching	☐	☐	☐	☐	☐
Internet communication (e.g. e-mail, forums, chat)	☐	☐	☐	☐	☐
Presentation software	☐	☐	☐	☐	☐
Drill-practice programs,	☐	☐	☐	☐	☐
Tutorials	☐	☐	☐	☐	☐
Spreadsheets	☐	☐	☐	☐	☐
Concept mapping tools	☐	☐	☐	☐	☐
Database tools	☐	☐	☐	☐	☐
Simulation tools	☐	☐	☐	☐	☐
Multimedia	☐	☐	☐	☐	☐
Digital library access	☐	☐	☐	☐	☐
Using basic audio-visual aids (e.g. chalkboard, pictures, images, diagrams, charts, specimens, OHP)	☐	☐	☐	☐	☐
Educational CDs	☐	☐	☐	☐	☐
E books	☐	☐	☐	☐	☐
Lectures	☐	☐	☐	☐	☐
Textbooks	☐	☐	☐	☐	☐
Lecture handouts	☐	☐	☐	☐	☐
Practical Classes	☐	☐	☐	☐	☐
Class notes	☐	☐	☐	☐	☐
Discussions sessions	☐	☐	☐	☐	☐
Other resource (Please give details)					

Section E: Current practices in use of instructional technologies in classroom:

58. What kind of facilities are accessible for you as a student at your institution?	Not accessible	Restricted access	Free access
Computers (in Lab)	☐	☐	☐
Computers (in Class)	☐	☐	☐

Video conferencing systems	☐	☐	☐
Learning Management Systems/VLE (WebCT, Moodle etc.)	☐	☐	☐
Audio equipment (including software)	☐	☐	☐
Digital cameras	☐	☐	☐
Sufficient quality of hardware	☐	☐	☐
Internet connected computer	☐	☐	☐
Multimedia facility in classrooms	☐	☐	☐
Digital library access	☐	☐	☐
Basic audio-visual aids (e.g. chalkboard, pictures, images, diagrams, charts, specimens, OHP)	☐	☐	☐
Educational CDs	☐	☐	☐
E books	☐	☐	☐
Recorded/online Lectures	☐	☐	☐
Textbooks	☐	☐	☐
Lecture handouts	☐	☐	☐
Tutorials	☐	☐	☐
Practical Classes	☐	☐	☐
Discussions sessions	☐	☐	☐
Other resource (Please give details)			

Section F: Available Resources:

Instructions: A course entitled teaching learning strategies and reflective practices is a professional course offered to BS Education program. This course content of this course has been redesigned in a form of module keeping in view Gagne's nine events of instruction that include following components: (1) Gain attention of the students (2) Inform students of the objectives (3) Stimulate recall of prior learning (4) Present the content effectively (5) Provide learning guidance (6) Elicit performance (practice) (7) Provide feedback (8) Assess performance (9) Enhance retention and transfer. Gagné's Nine Events of Instruction can help build the framework with which to prepare and deliver instructional content. This course will also be delivered through Computer Assisted Instruction along with face to face teaching (blended approach). Please respond the following section accordingly.

Section G: Motivation	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
59. Would you be interested in taking part in this course?	☐	☐	☐	☐	☐
60. Do you think a course that includes self-study will help you learn better?	☐	☐	☐	☐	☐
61. Do you think including interactive exercises/activities will help in making the course interesting	☐	☐	☐	☐	☐

62. Do you think that this course will be more difficult than traditional learning in class?	☐	☐	☐	☐	☐
63. Do you think the course will be challenging for the students of BS (Education) at the 7th Semester	☐	☐	☐	☐	☐

Section H: Recommendations:

64. *Do you think the following suggestions will help integrate the Computer Assisted Instruction with Face-to-Face Teaching?*	No importance at all	Little importance	Quite great importance	Very great importance
Better access to technological equipment	☐	☐	☐	☐
Reliability of equipment	☐	☐	☐	☐
Availability of high quality equipment	☐	☐	☐	☐
Training/courses in using instructional technologies	☐	☐	☐	☐
Instructional technology-support	☐	☐	☐	☐
Technological hands-ontraining/courses	☐	☐	☐	☐
Technological support	☐	☐	☐	☐
Policies on using instructional technology across curriculum	☐	☐	☐	☐
Dedicated time in courses to prepare, explore and develop	☐	☐	☐	☐
Other (please specify below):				

Open Ended Questions

1. What are your requirements as a prospective teacher?

_____

_____

_____

2. Which skills do you want to learn as a prospective teacher?

_____

_____

3. Please identify the problems and constraints you have been facing as a prospective teacher in the teaching and learning process.

315

_____

_____

_____

4. What do you expect from this course?

_____

_____

_____

5. What sort of learning environment would you prefer to have in the classroom?

_____

_____

_____

6. What type of teaching methodology or format of instruction would you want to have in your classroom?

_____

_____

_____

_____

7. Please provide some recommendations to improve the teaching and learning process.

_____

_____

_____

_____

Name: _____ **Reg #** _____

Note: Select the best suitable answer

1. The education aims at the fullest realization of all the potentialities of children. It implies that

   a) they should provide suitable opportunities and favourable environmental facilities which are conducive to the maximum growth of children
   b) Teachers and parents must know what children are capable of and what potentialities they possess.
   c) It is necessary that their attitudes are helpful, encouraging and sympathetic.
   d) All of the above

2. An effective teaching means all of the following except

   a. a teacher teaches with enthusiasm
   b. a teacher find fault in his students
   c. a teacher is interested in making the subject matter understood rather than on completing the course.
   d. A teacher puts emphasis more on teaching than on class control

3. Which of the following teacher behaviour suggests a dimension of "unsuccessful" teacher behaviour? A teacher who is:
   a) Stimulating and imaginative
   b) Friendly
   c) Reserved and routine
   d) Understanding and sympathetic

4. Which of the following is the main objective of teaching?
   a) To prepare students to pass the examination
   b) To dictate notes to students
   c) To give information related to the syllabus
   d) To develop thinking power of students

5. What type of teachers is appreciated?

a) With charming personality
b) The one exercising strict control over his students
c) Friendly
d) The one who understands the problems of students and helps them

6. Most important work of teacher is_____

   a) To maintain discipline in class
   b) To take examination

c) To check home work
d) To make teaching interesting

7. Which of the following can be taken as a reflection of meaningful learning?

   a) A good score in the examination
   b) A high degree of retention
   c) The capability of transferring/using learning in different situations
   d) The ability to recall as and when needed

8. Sensation, perception, and memory belong to which group of psychologists?

   a) Psychoanalysts
   b) behaviorists
   c) humanistic psychologists
   d) cognitive psychologists

9. Earlier view of learning regarded teacher as:

   a) Dispenser of information
   b) Facilitator
   c) Guide
   d) Supervisor

10. Why is teacher training necessary?
a) Increase teaching skills
b) Understand methods of school organisation
c) Upgrade knowledge of content
d) All the above

11. The 'Cone of Experience' was developed by _____.
a) Edgar Dale
b) Ponting Barry
c) Jeanne Clum
d) Jereme Krusner

12. Instruction that takes into account various types of learners and learning styles and is adapted accordingly is said to be

   a) teacher-centered
   b) differentiated
   c) direct instruction
   d) none of the above

13. A blackboard cannot be used for _____.

   a) Improvement of a paragraph
   b) Making reports based on information
   c) Show schematic diagrams
   d) Summary of relationships between facts

14. Students should be allowed to play games because

    a) It develops cooperation and physical balance
    b) It makes them physically strong
    c) It helps in passing time
    d) It makes work easier for teacher

15. Which combination of teaching methods listed below would encourage the learner-centered paradigm?

    a) Individualized instruction and lecture method
    b) Simulation and demonstration
    c) Lecture method and experimentation
    d) Projects and Direct experience

16. What is the disadvantage of project method of teaching?

    a) It is learner centred
    b) Learners get first hand knowledge
    c) The learners are not well supervised
    d) The learners interest is considered

17. Learning by doing' is useful for children because—

    a) They understand better by doing
    b) They like doing activities
    c) It keeps them busy
    d) It is interesting

18. A teacher in the class should keep the pitch of his voice____

    a) high enough
    b) moderate
    c) low
    d) sometime low and sometime high

19. Verbal guidance is least effective in teaching

    a) relationship
    b) concept and facts
    c) attitud
    d) skills

20. Out of the following, in which lesson, a general rule is explained first and then examples are illustrated?

    a) Deductive lesson
    b) Inductive lesson
    c) Cognitive lesson
    d) Skill lesson

21. The discovery/inquiry method of learning is best exemplified by

    a) programmed instruction
    b) experimentation in a science laboratory
    c) team teaching
    d) individualized programming

22. For a teacher teaching a class with large strength, which of the techniques is best?

    a) Debate, discussions, practicals
    b) Group work with a lecture
    c) Lecture and class notes
    d) Self-study and asking questions

23. How would you improve student participation in classroom activity?

    a) By giving written assignments
    b) By group activity and reporting
    c) By holding tests
    d) By reading textual information

24. In which domain does the following objective fall? At the end of the lesson the learner should be able to hit the football using the head.

    a) Affective domain
    a) Cognitive domain
    b) Psychomotor domain
    c) A and C domains

25. In the introduction part of a lesson plan you get the student_____

    a) Assignments
    b) Previous knowledge
    c) Attention
    d) Abilities

26. The verbs write, list, label, and name when used in an examination, test the:

    a) Comprehension level
    b) Application level
    c) Knowledge level
    d) Synthesis level

27. Arrange the following teaching process in order

    i.   Relating the present knowledge with the previous knowledge
    ii.   Evaluation
    iii. Re-teaching
    iv.   Formulating objectives
    v.   Presentation of materials

    a) (i), (ii), (iii), (iv), (v)

320

b) (ii), (i), (iii), (iv), (v)
c) (v), (iv), (iii), (i), (ii)
d) (iv), (i), (v), (ii), (iii)

28. Which of these is an example of an instructional objective?

a) to determine how hydrogen and oxygen change to water
b) development of reading skills in science-related areas
c) understanding of scientific concepts
d) all of the above

29. Which of the following is an example of a thought-provoking (higher-order) question?

a) In which year latest education policy of Pakistan was published?
b) Explain the basic concept and principles of teaching and teachers.
c) How might we compare the national professional standards for teachers in Pakistan with the standards formulated in developed countries?
d) Enlist the personal and professional characteristics of an effective teacher?

30. Lesson plan objectives may state

a) expected behaviors
b) content
c) conditions of mastery
d) all of the above

31. If a student is given five sentences to be translated from Urdu to English, which aspect would you try to evaluate in him?

a) Application
b) Knowledge
c) Synthesis
d) Understanding

32. Which of the following is an audio-visual aid?

a) Radio
b) Tape-recorder
c) Television
d) Projector

33. _____ is included in ethical Issues of Education and Technology

a) Economic conditions
b) Hacking and software piracy
c) Reliance on Internet and Distance Education
d) Racial and gender equity

34. Which one of the following activities in a science class, the one with least educational value is:
a) Viewing a filmstrip
b) Constructing a model

321

c) Drawing a design
d) Reading about a simple experiment
e) Discussing a scientific principle

35. Teachers use aids to make learning
    a) Simple
    b) Easy
    c) Take less time
    d) Interesting

36. The correct meaning of C.A.I. is _____
    a) Characteristics of Assistant Instructor
    b) Computer Assisted Instruction
    c) Community Assisted Instruction
    d) None of the above

37. Practical knowledge of language is learnt at _____
    a) School
    b) Language laboratory
    c) Language teaching
    d) Language instruction

38. _____ is included in ethical Issues of Education and Technology
    a) Economic conditions
    b) Hacking and software piracy
    c) Reliance on Internet and Distance Education
    d) Racial and gender equity

39. What is the use of text book in a class?
    a) To achieve learning objectives
    b) To delimit what is to be taught
    c) To explain ideas and concepts
    d) Set new standards

40. Which of these situations is an example of aggressive behaviour?
    a) A man fires a gun towards a human target, but misses.
    b) Your dentist carelessly drills into the wrong tooth.
    c) A businessman shakes his client's hand so tightly that it hurts.
    d) A doctor decides to remove a patient's leg in order to treat an arm injury

41. In order to modify the undesirable behavior of a student the most effective method is
    a) To punish the student
    b) To bring it to the notice of parents
    c) To find out the reasons for the undesirable behaviour and provide remedies

d) To ignore it

42. The major disadvantage of punishment in education is that _____

   a) It causes embarrassment in children
   b) It generates unpleasant feelings
   c) It does not solve the problem permanently
   d) It prevents team work

43. What would you do if you notice that students tend to doze off in your class?

   a) Give a command seeking attention
   b) Provide them a chance to be physically active
   c) Reprimand them
   d) Stop teaching for a while

44. You have an aggressive student in your class. Which of the following would you adopt to handle him?

   a) Allow him the opportunity to act aggressively
   a) Explain him about the harmful consequences of aggression
   b) Punish him
   c) Put him in a highly frustrating and embarrassing situation

45. _____involves thoughtfully considering one's own experiences in applying knowledge to practice.
   a) Reflective practice
   b) Teaching practice
   c) Portfolios
   d) Observations

46. Which phrase best describes reflective practice?

   a) Making the unusual usual and making the usual unusual
   b) Nothing should ever stay the same
   c) To examine our work, so that we can eventually get to a place where it is perfect
   d) Talking and thinking about the work we do

47. Reflective teaching is also known as:

   a) discussion-based teaching
   b) enhancement-oriented teaching
   c) professional development-based teaching
   d) inquiry-oriented teaching

48. Maria wanted to become a good reflective teacher after learning about the benefits of reflection in his teacher education courses. The benefits of reflection include all but:
   a) enhancing learning about teaching and increasing the ability to analyze classroom events
   b) using trial and error to self-correct
   c) enhancing classroom life
   d) becoming self-monitoring

49. Action research is different from other educational research in that:
   a) it requires data collection
   b) t is done by classroom teachers
   c) it is published by professors at universities
   d) it involves gathering information related to an educational question

50. What is the most important process of a teacher's portfolio?

   a) collecting artifacts that show examples of your experience
   b) selecting the best illustrations of all you have collected to highlight your experience
   c) preparing the final product so that a principal or professor can clearly see your professionalism
   d) writing reflections so that you analyze your own teaching

Post-Test

Name: _____ **Reg. No.** _____

Choose the best answer

1. Why should a teacher be an idealist and set examples?

a) Students do not have values
b) Students usually imitate teachers
c) Teacher is an adult
d) Teacher is a paternal figure

2. Basic requirement of teaching efficiency is—
(a) Mastery on teaching skills
(b) Mastery over use of different techniques of teaching
(c) Mastery over appropriate use of media and technology in teaching
(d) All of the above

3. The education aims at the fullest realization of all the potentialities of children. It implies that

a) they should provide suitable opportunities and favourable environmental facilities which are conducive to the maximum growth of children
b) Teachers and parents must know what children are capable of and what potentialities they possess.
c) It is necessary that their attitudes are helpful, encouraging and sympathetic.
d) All of the above

4. The most appropriate meaning of learning _____

a. Inculcation of knowledge
b. Modification of behaviour
c. Personal adjustment
d. Acquisition of skills

5. The more parts of your brain you use, the more likely you are to _____ information.

a) Use
b) Transfer
c) Convey
d) Retain

6. Which of the following can be taken as a reflection of meaningful and practical learning?

a) A good score in the examination
b) A high degree of retention
c) The capability of transferring/using learning in different situations
d) The ability to recall as and when needed

7. Direct instruction is most appropriate when

a) cooperative learning is not an option.
b) the teacher needs to arouse or heighten student interest.
c) attempting to achieve content mastery and overlearning of fundamental facts
d) both b and c.

8. For a teacher teaching a class with large strength, which of the techniques is best?

a) Debate, discussions, practical
b) Group work with a lecture
c) Lecture and class notes
d) Self study and asking questions

9. Demonstrations are more likely to be remembered when they

a) are linked to previous skills they have learned
b) include concise labels or vivid images that help them to remember
c) are short and to the point.
d) both a and b.

10. Symposium is a type of _____
(a) Discovery method
(b) Discussion method
(c)Lecture method
(d) Demonstration method

11. Problem-based leaning

a) organizes the curriculum around loosely structured problems
b) lets learners solve problems by using knowledge an skills from several disciplines.
c) both a and b
d) non of the above

12. Which is the SECOND step in the problem solving method?
(a) Testing hypothesis
(b) Recognition and definition of problem
(c) Conclusion
(d) Formulation of hypothesis

13. Which is not the type of CAI
(a) Tutorial
(b) Drill
(c) Simulation
(d) Question

14. In the collaborative work projects students..........

a) follow their teachers' instructions blindly.
b) have to support their work orally.
c) ignore teachers' guidelines.
d) are trained to work independently from each other.

15. Which is not true about projects
(a) It is a purposeful activity
(b) It is proceeded in social environment
(c)It is accomplished in real life
(d) It is teacher-centered activity

16. The hypothesis underlying team teaching is_____
(a) Teachers feel bore while working alone
(b) Teachers are not competent
(c) The best teachers in schools are shared by more students
(d) The single teacher cannot control the class

17. A _____ is any activity that occurs outside the classroom for the purpose of providing hands on experience with objects or people that only occur in certain places.

a) Field work
b) Field Observations
c) Field walk
d) Field Trips

18. The technique in which the students act out roles form stories or historical events, is termed as:

a. Drama
b. Simulation
c. Play
d. All of the above

19. Condition necessary for micro teaching is_____?

a) Controlled environment
b) Repeated manifestation of only one skill
c) Observation and criticism
d) All of the above

20. Suppose a child has hearing impairment but you have no idea about him. What will be your duty towards the child ?
    a) Recognise the child and manage accordingly
    b) You become neutral because it is not your headache
    c) You send him to specialist for treatment
    d) You report to teachers, parents and principal to send him to a special school

21. Arrange the following teaching process in order

    vi.   Relating the present knowledge with the previous knowledge
    vii.   Evaluation
    viii. Re-teaching
    ix.   Formulating objectives
    x.   Presentation of materials

a) (i), (ii), (iii), (iv), (v)
b) (ii), (i), (iii), (iv), (v)
c) (v), (iv), (iii), (i), (ii)
d) (iv), (i), (v), (ii), (iii)

22. When is the best time to evaluate a student's performance?

a) When the instruction have begun
b) When the instruction have ended
c) Only at the end of major units of instruction
d) Throughout the instructional process

23. Which is the most important reason why teachers preview materials to be used in class?

a) To gain confidence in using them.
b) To encourage viewers to be more focused.
c) To avoid potential problems that might occur while materials are in use.
d) To ensure appropriateness of the materials with the objectives and target audience.

24. Action verbs, such as *deduce, differentiate, subdivide,* or *break down,* describe learning outcomes at which cognitive level?

a) Synthesis
b) Application
c) Comprehension
d) Analysis

25. Ms. Maria spends many hours each week carefully planning lessons and classroom activities. She usually starts with her lesson goals and then considers the various strategies that she will employ to reach these goals. The model that best describes Alicia's planning approach is

_____.

a) the central design
b) the forward design
c) the backward design
d) none of the above

26. Ms. Farah a high school English teacher, just completed a detailed written plan to help her organize the goals and activities for his tenth-grade creative writing class. The plan included an explicit outline of materials to be covered over the next three months and established a schedule emphasizing the goals to be covered each week. This plan is most likely a _____.

a) Unit plan
b) Weekly plan
c) Monthly plan
d) Term plan

27. Dr. Zarina used worksheets, manipulatives and models in teaching math to help her students understand the lesson and love the subject. What did she bear in mind when she used these materials?

a) appropriateness
b) balance
c) breadth
d) variety

28. Which of the following is NOT an example of communicative tool?

a) multimedia encyclopedia
b) teleconferencing
c) electronic mail
d) chat

29. Which of the following computer-based instructional materials can be used to learn new concepts?

a) games
b) tutorial
c) simulation
d) drill and practice

30. It is impractical to bring real object to the classroom so Aaron constructed a three-dimensional visual instead. Which of the following did he construct?

a) cartoon
b) chart
c) graphic
d) Model

31. How educational technology is integrated in the teaching learning process?

a) A. Playing computer games
b) B. Visiting your facebook
c) C. using PowerPoint presentation
d) D. Introduce, reinforce, supplement and extend skills

32. There are several reasons why teachers are reluctant in using electronic media in the teaching-learning process. Which is the most common reason?

a) The limited exposure of teachers to new equipment.
b) Their incompatibility to diverse needs of the learners.
c) The difficulty in integrating technology in the community.
d) None of the above

33. Ms. Sara used a film clip in teaching science concepts to her grade Six class. However, she found out that is was ineffectively used in the classroom. When technology is considered ineffective?

a) When it promotes mastery the lesson.

b) When it makes viewing more interesting.
c) When it helps attain the objectives of the lesson.
d) When it induces alienation on the part of the learners.

34. Which of the following is an ineffective use of Presentation software?

a) Darken the room
b) Use appropriate pacing
c) read directly from the slides
d) allow interaction with the learner

35. Which of the following teaching aids helps the pupils to study, analyses and compare date?

a) Graphs
b) Maps
c) Diagrams
d) Pictures

36. _____ is the major cause of difference in the classroom behaviour of boys and girls.

a) Developmental differences
b) Educational levels
c) Job aspirations
d) Societal expectations

37. You have an aggressive student in your class. Which of the following would you adopt to handle him?

a) Allow him the opportunity to act aggressively
b) Explain him about the harmful consequences of aggression
c) Punish him
d) Put him in a highly frustrating and embarrassing situation

38. A student in your class is guilty of stealing. What would you do?

a) Find the cause of the behavior and explain the effects of stealing
b) Punish and make the child repay
c) Publicly demand an apology
d) Send the child to the police

39. Which statement does not belong to effective classroom management plan?

a) Respect cultural differences
b) Stop persistent misbehavior with strategies simple enough to be used consistently
c) Create attention seeking and work avoidance behaviors
d) Quickly and unobtrusively redirect misbehavior once it occurs

40. Behavior modification approaches to classroom management emphasize:

a) The idea that behavior can be altered through punishment, reward, and reinforcement

330

b) The importance of negative reinforcement to curb avoidance behaviors
c) The belief that what preceded a behavior is of utmost importance, regardless of what follows it
d) The need for open communication and "telling"

41. Effective classroom managers

a) devote little time to planning and organizing their classroom to minimize disruption and enhance work engagement.
b) approach the teaching of rules and routines as methodically as their subject area.
c) inform students about consequences for breaking rules and enforce consequences consistently.
d) both b and c.

42. What type of class climate you would prefer?

a) well behaved class students speaking only when asked
b) An active class following the rules prescribed by you
c) A highly interactive and self disciplined class
d) A quiet and highly attentive class

43. Ms. Smith is considered to be a reflective teacher. This means she

a) is thoughtful and self-critical about her teaching.
b) begins each class period with a stimulating lecture.
c) takes the time to adapt her lessons to the learners' needs and critiques the success of the lessons afterward.
d) both a and c.

44. Maria wanted to become a good reflective teacher after learning about the benefits of reflection in his teacher education courses. The benefits of reflection include all but:
a) enhancing learning about teaching and increasing the ability to analyze classroom events
b) using trial and error to self-correct
c) enhancing classroom life
d) becoming self-monitoring

45. Action research is different from other educational research in that:
a) it requires data collection
b) t is done by classroom teachers
c) it is published by professors at universities
d) it involves gathering information related to an educational question

46. What is the most important process of a teacher's portfolio?

a) collecting artifacts that show examples of your experience
b) selecting the best illustrations of all you have collected to highlight your experience
c) preparing the final product so that a principal or professor can clearly see your professionalism
d) writing reflections so that you analyze your own teaching

331

47. Arrange the following Gibbs Reflective Cycle in order

  i.   Analysis
  ii.   Evaluation
  iii. Description
  iv.   Conclusion
  v.   Action plan
  vi.   Feelings

  a) (iii), (vi), (ii), (i), (iv) (v)
  b) (ii), (i), (iii), (iv), (v) (vi)
  c) (v), (iv), (iii), (i), (ii) (vi)
  d) (iv), (i), (v), (ii), (iii) (vi)

48. What is not true about schon reflective model?

  a) Reflection on action
  b) Reflection in action
  c) Reflection about action
  d) Reflection for action

49. Experiential learning theory belongs to which psychologist?

  a) Bedura
  b) Kolb
  c) Skinner
  d) Piaget

50. Arrange the following Reflective Cycle in order

  i.   Reflection
  ii.   Test
  iii. Conceptualize
  iv.   Experience

  a) (iii), (iv), (ii), (i),
  b) (ii), (i), (iii), (iv),
  c) (iv), (iii), (ii), (i),
  d) (iv), (i), (iii), (ii)

VAK Learning Styles Self-Assessment Questionnaire

Circle or tick the answer that most represents how you generally behave.

(It's best to complete the questionnaire before reading the accompanying explanation.)

SWINBURNE
UNIVERSITY OF
TECHNOLOGY

1. When I operate new equipment I generally:
   a) read the instructions first
   b) listen to an explanation from someone who has used it before
   c) go ahead and have a go, I can figure it out as I use it

2. When I need directions for travelling I usually:
   a) look at a map
   b) ask for spoken directions
   c) follow my nose and maybe use a compass

3. When I cook a new dish, I like to:
   a) follow a written recipe
   b) call a friend for an explanation
   c) follow my instincts, testing as I cook

4. If I am teaching someone something new, I tend to:
   a) write instructions down for them
   b) give them a verbal explanation
   c) demonstrate first and then let them have a go

5. I tend to say:
   a) watch how I do it
   b) listen to me explain
   c) you have a go

6. During my free time I most enjoy:
   a) going to museums and galleries
   b) listening to music and talking to my friends
   c) playing sport or doing DIY

7. When I go shopping for clothes, I tend to:
   a) imagine what they would look like on
   b) discuss them with the shop staff
   c) try them on and test them out

8. When I am choosing a holiday I usually:
   a) read lots of brochures
   b) listen to recommendations from friends
   c) imagine what it would be like to be there

---

9. If I was buying a new car, I would:
   a) read reviews in newspapers and magazines
   b) discuss what I need with my friends
   c) test-drive lots of different types

10. When I am learning a new skill, I am most comfortable:
    a) watching what the teacher is doing
    b) talking through with the teacher exactly what I'm supposed to do
    c) giving it a try myself and work it out as I go

11. If I am choosing food off a menu, I tend to:
    a) imagine what the food will look like
    b) talk through the options in my head or with my partner
    c) imagine what the food will taste like

12. When I listen to a band, I can't help:
    a) watching the band members and other people in the audience
    b) listening to the lyrics and the beats
    c) moving in time with the music

13. When I concentrate, I most often:
    a) focus on the words or the pictures in front of me
    b) discuss the problem and the possible solutions in my head
    c) move around a lot, fiddle with pens and pencils and touch things

14. I choose household furnishings because I like:
    a) their colours and how they look
    b) the descriptions the sales-people give me

c) their textures and what it feels like to touch them

15. My first memory is of:
    a) looking at something
    b) being spoken to
    c) doing something

16. When I am anxious, I:
    a) visualise the worst-case scenarios
    b) talk over in my head what worries me most
    c) can't sit still, fiddle and move around constantly

17. I feel especially connected to other people because of:
    a) how they look
    b) what they say to me
    c) how they make me feel

18. When I have to revise for an exam, I generally:
    a) write lots of revision notes and diagrams
    b) talk over my notes, alone or with other people
    c) imagine making the movement or creating the formula

19. If I am explaining to someone I tend to:
    a) show them what I mean
    b) explain to them in different ways until they understand
    c) encourage them to try and talk them through my idea as they do it

20. I really love:
    a) watching films, photography, looking at art or people watching
    b) listening to music, the radio or talking to friends
    c) taking part in sporting activities, eating fine foods and wines or dancing

21. Most of my free time is spent:
    a) watching television
    b) talking to friends
    c) doing physical activity or making things

22. When I first contact a new person, I usually:
    a) arrange a face to face meeting
    b) talk to them on the telephone
    c) try to get together whilst doing something else, such as an activity or a meal

23. I first notice how people:
    a) look and dress

b) sound and speak

c) stand and move

24. If I am angry, I tend to:
   a) keep replaying in my mind what it is that has upset me
   b) raise my voice and tell people how I feel
   c) stamp about, slam doors and physically demonstrate my anger

25. I find it easiest to remember:
   a) faces
   b) names
   c) things I have done

26. I think that you can tell if someone is lying if:
   a) they avoid looking at you
   b) their voices changes
   c) they give me funny vibes

27. When I meet an old friend:
    a) I say "it's great to see you!"
    b) I say "it's great to hear from you!"
    c) I give them a hug or a handshake

28. I remember things best by:
    a) writing notes or keeping printed details
    b) saying them aloud or repeating words and key points in my head
    c) doing and practising the activity or imagining it being done

29. If I have to complain about faulty goods, I am most comfortable:
    a) writing a letter
    b) complaining over the phone
    c) taking the item back to the store or posting it to head office

30. I tend to say:
    a) I see what you mean
    b) I hear what you are saying
    c) I know how you feel

Now add up how many A's, B's and C's you selected.

A's =   B's =   C's =

If you chose mostly A's you have a **VISUAL** learning style.

If you chose mostly B's you have an **AUDITORY** learning style.

If you chose mostly C's you have a **KINAESTHETIC** learning style.

APPLICATION OF ANALYSIS DESIGN, DEVELOPMENT, IMPLEMENTATION AND EVALUATION (ADDIE) MODEL FOR DEVELOPING INSTRUCTIONAL DESIGN IN TEACHER EDUCATION

Course Evaluation Form

The study is to focus on the following objectives:

1. To conduct a need analysis of the target group as required in ADDIE model;
2. To design and develop instructional modules based on Gagne's nine events of instruction;
3. To deliver instruction through implementation of Instructional design in teaching a course on teaching and learning strategies;
4. To evaluate the utility and effectiveness of Instructional System Design on students learning.

Instructions: This evaluation form deals with your experiences of learning with various teaching methodologies, course design, classroom environment, instructional technologies, **Feasibility/usability** of the course and overall experiences during the course of teaching learning strategies and reflective practices. Taking into account the above mention points respond to the queries accordingly.

Section B: Learning experience (teaching methodology)	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
5. Before beginning the lecture, teacher tried to capture attention by using various techniques.	☐	☐	☐	☐	☐
6. Effectively introduced the topic	☐	☐	☐	☐	☐
7. Outlined the objectives (Introduced the aims and objectives of every session/topic)	☐	☐	☐	☐	☐
8. Connected previous knowledge of learners with new information to help understand new concepts	☐	☐	☐	☐	☐
9. Delivered the lectures in an organized and coherent way	☐	☐	☐	☐	☐
10. Contextualized the contents (connected the contents to real life situation\)	☐	☐	☐	☐	☐
11. Demonstrated the following techniques/methodologies to make the topic understand:					

Section B: Learning experience (teaching methodology)	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
a. Lecture	☐	☐	☐	☐	☐
b. Discussion	☐	☐	☐	☐	☐
c. Demonstration	☐	☐	☐	☐	☐
d. Problems solving	☐	☐	☐	☐	☐
e. Project method	☐	☐	☐	☐	☐
f. Simulation and games	☐	☐	☐	☐	☐
g. Story telling	☐	☐	☐	☐	☐
h. Role play	☐	☐	☐	☐	☐
i. Computer assisted instruction	☐	☐	☐	☐	☐
j. Group work and collaborative learning activities	☐	☐	☐	☐	☐
12. Provided clear guidelines to do the assignments	☐	☐	☐	☐	☐
13. Provided an opportunity of drill and practice in class for better conceptual clarity	☐	☐	☐	☐	☐
14. Provided a timely feedback	☐	☐	☐	☐	☐
15. Conducted quizzes and exercises on regular basis to access the learning outcome	☐	☐	☐	☐	☐
16. Provided reference material and other supporting tools to enhance learning	☐	☐	☐	☐	☐
17. Concluded every lecture by revising important points	☐	☐	☐	☐	☐

Section B: Learning experience (teaching methodology)	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
18. Used visual material and illustrations	☐	☐	☐	☐	☐
19. provided examples to explain the topic	☐	☐	☐	☐	☐
20. Engaged learners by making the class interactive	☐	☐	☐	☐	☐
21. Provided individualized instructions as per my style and pace of learning	☐	☐	☐	☐	☐
22. Used blended learning approach (i.e. computer based as well face to face) to make the learning effective	☐	☐	☐	☐	☐

Instructions: This section deals with course design. Please give your feedback regarding the design of the course you have taken in the previous semesters of the degree.

Section C: Experience of learning (Course design)	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
23. The contents were easy and understandable.	☐	☐	☐	☐	☐
24. Every new concept was initiated with an introduction to grab learners' attention.	☐	☐	☐	☐	☐
25. The material met its objectives.	☐	☐	☐	☐	☐
26. The contents have had practical relevance.	☐	☐	☐	☐	☐
27. Each component connected previous knowledge to help understand the concepts	☐	☐	☐	☐	☐
28. The course was organized.	☐	☐	☐	☐	☐
29. The course included the guidelines for different tasks and activities.	☐	☐	☐	☐	☐
30. The course provided with an opportunity to drill and practice.	☐	☐	☐	☐	☐

Section C: Experience of learning (Course design)	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
31. The courses provided feedback on various tasks.	☐	☐	☐	☐	☐
32. The courses have had plenty of quizzes and exercises.	☐	☐	☐	☐	☐
33. The course recommended reference material and supporting tools.	☐	☐	☐	☐	☐
34. The courseswere supported by variety of visuals and illustrations.	☐	☐	☐	☐	☐
35. The course was supported by variety of examples.	☐	☐	☐	☐	☐
36. The course was interactive to engage learners.	☐	☐	☐	☐	☐
37. The course has had the provision for individualized instructions.	☐	☐	☐	☐	☐
38. The course involved blended learning approach (i.e. computer based as well face to face) to make the learning interesting.	☐	☐	☐	☐	☐

Section D: Students Attitude towards Learning Environment	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
39. Do you think that the environment of the class was flexible enough to help you learn better?	☐	☐	☐	☐	☐
40. Have you experienced a friendly environment in this course?	☐	☐	☐	☐	☐
41. The class was more integrative to help learn better.	☐	☐	☐	☐	☐
42. The seating arrangement was according to the need and requirement of the class	☐	☐	☐	☐	☐
43. Do you think that class had a traditional look—where teacher was standing on a higher podium?	☐	☐	☐	☐	☐
44. The teacher used to walk around to engage students in the learning process.	☐	☐	☐	☐	☐

Section D: Students Attitude towards Learning Environment	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
45. Do you think use of audio-visual aids helped in creating better classroom environment?	☐	☐	☐	☐	☐
46. An interesting initiation on the part of the teacher not only helped catching students' attention but also sets up a friendly environment for learning.	☐	☐	☐	☐	☐
47. Do you think teacher's encouraging attitude towards students' questions helps in making the environment better for learning?	☐	☐	☐	☐	☐
48. Holding quizzes and doing exercises helped create a better environment of leaning.	☐	☐	☐	☐	☐
49. Do you think providing reference or/and reading material helped in creating a competitive environment in the class?	☐	☐	☐	☐	☐
50. Splitting students into smaller/bigger groups helped in creating good learning environment.	☐	☐	☐	☐	☐
51. Individual attention given to students by the teacher contributed making better learning environment.	☐	☐	☐	☐	☐
52. Do you think computer based learning helped build better environment in the class?	☐	☐	☐	☐	☐

Section E: Use of instructional technologies in classroom:

53. What instructional technologies have you used in the class ?	Never Rarely	Less than half the time	About half the time	More than half the time	Almost always
Personal computers/Laptop	☐	☐	☐	☐	☐
Video conferencing systems	☐	☐	☐	☐	☐
Learning Management System/VLE (WebCT, Moodle etc.)	☐	☐	☐	☐	☐
Audio equipments (including software)	☐	☐	☐	☐	☐
Videos	☐	☐	☐	☐	☐
Web searching	☐	☐	☐	☐	☐
Internet communication (e.g. e-mail, forums, chat)	☐	☐	☐	☐	☐
Presentation softwares	☐	☐	☐	☐	☐
Drill-practice programs,	☐	☐	☐	☐	☐
Tutorials	☐	☐	☐	☐	☐
Simulations	☐	☐	☐	☐	☐
Multimedia	☐	☐	☐	☐	☐

Digital library access	☐	☐	☐	☐	☐
Using basic audio-visual aids (e.g. chalkboard, pictures, images, diagrams, charts, specimens)	☐	☐	☐	☐	☐
Educational CDs	☐	☐	☐	☐	☐
E books	☐	☐	☐	☐	☐
Lectures	☐	☐	☐	☐	☐
Textbooks	☐	☐	☐	☐	☐
Lecture handouts	☐	☐	☐	☐	☐
Practical Classes	☐	☐	☐	☐	☐
Class notes	☐	☐	☐	☐	☐
Discussions sessions	☐	☐	☐	☐	☐
Other resource (if any, Please give details)					

Section G: Motivation and Attitude	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
54. Taking part in this course was a interesting and motivating experience for you?	☐	☐	☐	☐	☐
55. Do you think the course that includes self-study helped you learn better?	☐	☐	☐	☐	☐
56. Do you think including interactive exercises/activities helped in making the course interesting?	☐	☐	☐	☐	☐
57. Do you think the course was challenging for the students of BS (Education) at 7th semester?	☐	☐	☐	☐	☐

Section H: Recommendations:

58. Do you think the following suggestions will help integrate the Computer Assisted Instruction with Face to Face Teaching?	No importance at all	Little importance	Quite great importance	Very great importance
Better access to technological equipment	☐	☐	☐	☐
Reliability of equipment	☐	☐	☐	☐
Availability of high quality equipment	☐	☐	☐	☐
Training/courses in using instructional technologies	☐	☐	☐	☐
Instructional technology-support	☐	☐	☐	☐
Technological hands-ontraining/courses	☐	☐	☐	☐
Technological support	☐	☐	☐	☐
Policies on using instructional technology across curriculum	☐	☐	☐	☐

Dedicated time in courses to prepare, explore and develop	☐	☐	☐	☐
Other (please specify if any):				

Feasibility/usability of interactive Courseware/Module

Sr.#	Statements	1	2	3	4	5
1.	The CAI program was easy to use.					
2.	Sufficient instructions were included in the CAI program.					
3.	Easy to use course navigation & interface with clear instruction					
4.	Level of interactivity is appropriate for topic area					
5.	Easy for students to move between course segments					
6.	Course loads and run as expected					
7.	Feasible Course Running					
8.	The use of the CAI program was convenient and easy to access.					

Course design

Sr.#	Statements	1	2	3	4	5
1.	The CAI program was well organized.					
2.	Course employs multiple learning methods to reach students					
3.	Readability of course material is appropriate for target audience					
4.	Course is congruent; content flows in logical sequence					
5.	Units of learning are appropriate in length					
6.	Course has clearly stated objectives					
7.	Provides guided practice					
8.	Provides feedback to learners					
9.	Provide skill checks along the way					
10.	Testing measures student's mastery of the course material					
11.	Course is an appropriate length for the topic addressed					
12.	The graphical illustrations in the CAI program were appropriate.					
13.	Overall quality of instructional design					

Quality of content and coverage

Sr.#	Statements	1	2	3	4	5
1.	Content coverage is complete					

344

2.	Content coverage is accurate					
3.	Content is stated clearly					
4.	Graphics are clear and contribute to the student's learning					
5.	Content is an appropriate level of difficulty					
6.	The number of topics presented in the CAI program was appropriate.					
7.	The number of activities in the CAI program was appropriate.					
8.	The material covered in the CAI program was appropriate.					

Overall Experiences

Sr.#	Statements	SD	D	N	A	SA
1.	CAI program reinforced the material that was covered in class.					
2.	CAI program facilitated learning.					
3.	The CAI program was boring.					
4.	A computer (computer program) can never match the human contact that a teacher provides.					
5.	The CAI program should be used in place of lectures.					
6.	The CAI program should be used to supplement lectures.					
7.	Learning from a computer is a cold and impersonal experience.					
8.	Learning from a computer is an exciting way to learn.					
9.	I would rather learn from class lectures than a computer program.					
10.	I like the combination of both lectures and computer instruction.					
11.	I feel the CAI program has helped to develop my problem solving skills.					
12.	I would like to use similar CAI programs for other subjects.					
13.	I feel that the computer learning exercise (CAI program) should be mandatory for all students.					
14.	The graphical illustrations in the CAI program were informational and facilitated learning.					
15.	The CAI program helped me apply my knowledge.					
16.	I learned a lot from the computer program.					

345

17.	I think the CAI program was helpful in preparing me for the test.					
18.	My overall impression of the CAI program was that it was useful.					
19.	Overall, the CAI program was a valuable learning experience for me.					
20.	I enjoyed using the CAI program					
21.	Course maintains students interest					
22.	Exercises and activities contribute to student understanding					
23.	Course content addresses stated objectives of course					
24.	Course is relevant to tasks					
25.	Course will meet our stated needs					
26.	Overall rating of the course					

Instructional Modules

TEACHING LEARNING STRATEGIES AND REFLECTIVE PRACTICES

Course Code: ED 025

BS Education

Prepared by:

Alina Raza
Department of Education
Faculty of Social Sciences
International Islamic University Islamabad

Table of Contents

350

351

352

Course Description

Teaching and learning strategies is one area of teacher education programs which is devoted to teaching principles and techniques that direct the teaching and learning processes. The course of teaching and learning strategies is specially designed for the students of BS Education and considered very important for them because it makes the connection between teaching process and methodologies on the basic cycle with the teaching technology and classroom implementation practices.

The courseware of teaching learning strategies and reflective practices has been designed for the BS Education Program, offered in the Department of Education, International Islamic University, Islamabad. The purpose of the course is teacher training and to make the teaching learning in educational institutions effective and sound. Various aspects of effective teaching learning are discussed to enable prospective teachers to use different teaching strategies successfully. The course designed in eight modules and each module is further divided in units, topics and sub topics. This course has aso been developed in a form of courseware for blended and self paced instruction. Please review the user manual of courseware for more information. The learners will review material related to the topics, for further concept clarifications further readings are also suggested. They can also access to the web resources if connected to the internet. After reading the material they will go to the activity link for practice and self evaluation exercises. During couching sessions instructor will also provide worksheets, reading material and feedback on the course. Hopefully, this course will help out prospective teachers to adopt suitable teaching method and reflect on their teaching practices.

Module Objectives

After studying this module, you will be able to:

- Explain the concept of teaching, teaching process and learning strategies.
- Understand relationship among different elements of teaching.
- Select suitable teaching-learning strategies during practical classroom settings.
- Develop appropriate lesson plans according to the nature of the subject matter
- Reflect on their own practices to identify strengths and weaknesses of their teaching method.
- Apply various student centered and teacher centered teaching strategies.

Module 01: Teacher and Teaching

Unit 1: Concept of effective teaching
      1.10 definition of teaching
      1.11 concept of teaching
      1.12 effective teaching

Unit 2: Main features/characteristics of teaching
      1.1 planning and preparation
      1.2 the classroom environment
      1.3 instruction
      1.4 professional responsibilities

Unit 3: Characteristics of effective teacher
      3.1 personal characteristics
      3.2 professional characteristics

Unit 4: Teaching as a profession
      4.1 concept of profession
      4.2 Roles and responsibilities
      4.3 Demands and challenges

Teacher leaders assume a wide range of roles to support school and student success. Whether these roles are assigned formally or shared informally, they build the entire school's capacity to improve. Because teachers can lead in a variety of ways and the following roles are a sampling of the many ways teachers can contribute to their schools' success. Teachers exhibit leadership in multiple, sometimes overlapping, ways. Some

leadership roles are formal with designated responsibilities. Other more informal roles emerge as teachers interact with their peers. The variety of roles ensures that teachers can find ways to lead that fit their talents and interests. Regardless of the roles they assume, teacher leaders shape the culture of their schools, improve student learning, and influence practice among their peers.

Teaching is a complex and multidimensional process that requires deep knowledge and understanding in a wide range of areas and the ability to synthesize, integrate, and apply this knowledge in different situations, under varying conditions, and with a wide diversity of groups and individuals. In quality teaching, this knowledge is applied in ways that provide equitable access and opportunities that build upon and extend what learners already know in facilitating the ability to acquire, construct, and create new knowledge.

Module Objectives:
After studying this module, the student will be able to:
12. familiar with the basic concept, principles and characteristics of teaching and teachers.
13. distinguish between the personal and professional characteristics of an effective teacher.
14. explore ways to become an effective teacher.
15. understand the major roles of a professional teacher
16. describe various responsibilities of a teacher
17. demonstrate different roles of a teacher.

Unit 1: Concept of effective teaching
1.1 definition of teaching
1.2 concept of teaching
1.3 effective teaching
1.4 model of effective teaching

Introduction:
Teachers have a powerful, long-lasting influence on their students. They directly affect how students learn, what they learn, how much they learn, and the ways they interact with one another and the world around them. Considering the degree of the teacher's influence, we must understand what teachers should do to promote positive results in the lives of students withregard to school achievement, positive attitudes toward school, interest in learning, and other desirable outcomes. This understanding should be based both on what experts and stakeholders think teachers should do and on what education research has shown to be significant in the preparation and practice of effective teachers.

Introductory Activity: Show a video to the students about the concept of effective teaching and ask students to watch the video carefully and discuss what they have learned from this.

Unit objectives:
After studying this unit, the students will be able to:
*   explain the definition of teaching
*   discuss the concept of teaching
*   identify and enlist the components of effective teaching
*   draw a model of effective teaching

1.1 Definition of teaching

- "the action of a person who teaches; the profession of a teacher"
- "teaching is imparting knowledge or skill"

Further Reading:
https://infed.org/mobi/what-is-teaching/

1.2 Concept of teaching

- Teaching is supporting
- Teaching is empowering
- Teaching is engaging
- Teaching is caring
- Teaching is sharing
- Teaching is reflecting
- Teaching is nurturing
- Teaching is assessing
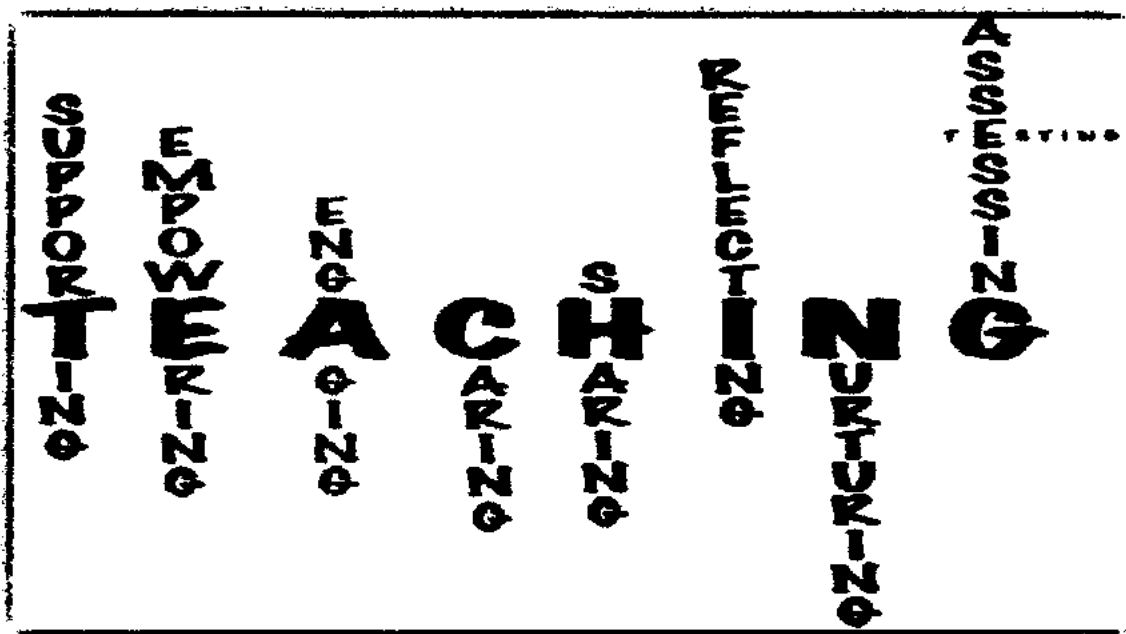
Note: show this picture to the students as an example of activity

Further Reading: Qualities of effective teachers James H. Strong E Association for Supervision and Curriculum Development Alexandria, Virginia USA2007

1.3 Effective Teaching

- Knowledge of basic principles and procedures (pedagogical theory);
- Planning and preparation;
- Teaching experience (practice);

355

- Self-reflection and modification of techniques;
- Flexibility

1.4 Effective Teaching Model
The Effective Teaching Model highlights the five unique and important domains of effective teaching
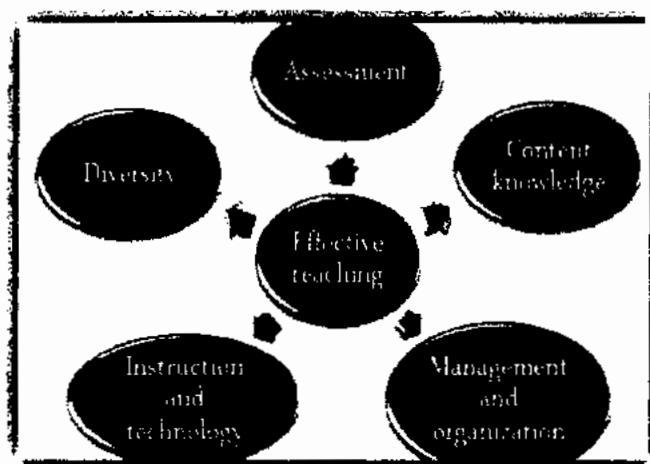
Note: Show this flowchart to the students for conceptual clarity

Content knowledge
- Content knowledge includes knowledge both general and specialized content knowledge
- Well prepared
- Teachers need to understand subject matter deeply
- use illustrations, examples, explanations, and demonstrations
- How difficult topics could be made easy

Management and organization
- Teachers need to demonstrate management and organization skills, which means establish a community of learners, positive social interactions, active engagement in learning
- Establish clear expectations
- Establish learning goals
- How to deal challenging attitudes

Instruction and Technology
- Teachers should be capable of demonstrating methods of instruction which apply various theories of learning and human growth and development. Example: By watching students, observing them in action, examining their work, and talking and listening to them, teachers learn about their students individual differences. This knowledge has to be merged with suitable method of instructions for children.
- Ability to adapt student's preferred learning styles
- use of a variety of instructional strategies to encourage the development of critical thinking
- It is in the best interest of the teachers and professionals to be aware of the technology

Diversity
- diversity in culture, language, race, ethnicity, gender, religion, cognitive and physical abilities, and socioeconomic status
- teachers should understand how students differ in their approaches to learning and be able to create instructional opportunities that are adapted to diverse populations of learners.
- The issue of equity.
-

356

Assessment

- Teachers should be capable of using traditional and new assessment techniques.
- As reflective practitioners, teachers must know to evaluate the effects of their evaluation on others. Educators in today's classrooms face a difficult tension.
- All learners need to have a clear understanding of how they will be assessed and then be shown models of excellence and rubrics that clarify how assessment will be conducted. Changing the traditional teacher-student interaction pattern with regard to the issue of assessment is no small task. The use of formal and informal assessment strategies, before and after instruction, are encouraged in order to ensure the continuous intellectual, social and physical development of the learner.
- Assessment includes student assessment and self-assessment. Regarding self-assessment, students develop portfolios as part of various courses, and during student teaching undergraduate students develop a professional portfolio. Videos of teacher candidate performance in the classroom are also used as tools for self-evaluation.

Further Reading: Reimers, V. E (2003) Teacher Professional Development: An International Review of Literature UNESCO international institute of educational planning

---

Activity: Ask students brainstorm in groups, construct a concept map and add more components related to effective teaching

---

Feedback:

- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

---

Unit Exercise:

1. Write a comprehensive definition of teaching and explain it with examples
2. Teaching is said to be an art as well as science. What is your idea about concept of teaching? Discuss.
3. Enlist the components of effective teaching and explain it with examples

---

Summary and transition:

- Teachers have a powerful, long-lasting influence on their students. They directly affect how students learn, what they learn, how much they learn, and the ways they interact with one another and the world around them
- Teaching is defined as "the action of a person who teaches; the profession of a teacher" and a process of imparting knowledge or skill.
- Effective Teaching is all about having knowledge of basic principles and procedures (pedagogical theory); Planning and preparation; Teaching experience (practice); Self-reflection and modification of techniques; and Flexibility
- The Effective Teaching Model highlights the five unique and important domains of effective teaching including teachers' mastery on content knowledge, management and organization, instruction and technology, dealing with diversity and use of assessment techniques in classroom.

357

> **Unit 2: Main features/characteristics of teaching**
> 2.10 planning and preparation
> 2.11 the classroom environment
> 2.12 instruction
> 2.13 professional responsibilities

According to UNESCO (2004) and Scheerens (2004), the main characteristics of good teaching relate to a number of broad categories:

- Relevance of the teaching content, in particular alignment with the curriculum.
- Sufficient learning time: this refers to the time devoted to actual teaching, as opposed to the official hours set in the curriculum.
- Structured teaching, in which learners' engagement is stimulated, their understanding monitored, and feedback and reinforcement regularly provided.
- A conducive classroom environment with, in particular, a task-oriented climate, mutual respect between the students and teacher and among students themselves, orderliness, and safety.
- Teachers with appropriate subject matter mastery, verbal intelligence, a broad teaching repertoire, and motivation to achieve.
- What research also underlines though is that adaptability to context matters as different countries and students may need different teaching contents (both in terms of subject matter knowledge and of medium of instruction) and different levels of structure tailored to students' profile. It is therefore important to critically assess the relevance of both current and planned objectives (in terms of the content, structure, and context of teaching and learning) to the national situation.

Introductory Activity:
Show a video to the students about the characteristics of teaching and ask students to watch the video carefully and discuss what they have learned from this.

Further Reading:
http://www.unesco.org/new/en/education/themes/strengthening-education-systems/quality-framework/technical-notes/common-characteristics-of-good-teaching/

Unit objectives:
After studying this unit, the student will be able to:
9. Conceptualize the main features and characteristics of teaching
10. Design planning and preparation documents for class
11. Create a conducive learning environment in class
12. Demonstrate effective instruction with students in class
13. Classify professional responsibilities of a teacher in various domains

---

PK Activity:
Ask students to think about their teaching and learning experience and reflect their own ideas about effective teaching

---

2.1 Planning and preparation
- Demonstrating Knowledge of Content and Pedagogy
- Demonstrating Knowledge of Students
- Setting Instructional Outcomes
- Demonstrating Knowledge of Resources
- Designing Coherent Instruction

358

- Designing Student Assessments

Activity:
Request your teachers to share their planning and preparation documents with you to observe.

2.2 The classroom environment

- Creating an Environment of Respect and Rapport
- Establishing a Culture for Learning
- Managing Classroom Procedures
- Managing Student Behavior
- Organizing Physical Space

Activity:
✓ Ask students to have classroom observation of at least five classes and develop a checklist of the important components in maintaining an affective classroom environment for students.

2.3 Instruction

- Communicating with Students
- Using Questioning and Discussion Techniques
- Engaging Students in Learning
- Using Assessment in Instruction
- Demonstrating Flexibility and Responsiveness

Activity:
Ask students to have classroom observation of at least five classes and develop a checklist of the important components in delivering effective instruction

2.4 Professional responsibilities

- Reflecting on Teaching
- Maintaining Accurate Records
- Communicating with Families
- Participating in a Professional Community
- Growing and Developing Professionally
- Showing Professionalism

Further Reading: Danielson, C (2007) Enhancing professional practice: a framework for teaching 2nd edition 2nd edition. *Association for Supervision and Curriculum Development Alexandria*, Virginia USA

Activities:
✓ In small groups, brain storm about professional responsibilities of a teacher, and draw a concept map to classifying and categorize its various domains

Feedback:
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response

359

- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
1. Explain the main features and characteristics of teaching in detail keeping in view UNESCO definition.
2. What sort of planning and preparation a teacher has to do for teaching and why it is important? Explain with examples
3. Why it is important to create a conducive learning environment in class? How teachers can achieve this task? Explain with some practical examples
4. How teachers can deliver effective instruction with students in class? Discuss in detail

Summary and transition:
According to UNESCO (2004) and Scheerens (2004), following are the main characteristics of good teaching:
- Relevance of teaching content
- Sufficient learning time
- Structured teaching
- A conducive classroom environment
- Appropriate subject matter mastery
- Critical needs assessment of both current and planned objectives
- Planning and preparation
- The classroom environment
- Effective classroom Instruction
- Professional responsibilities of a teacher

Unit 3: Characteristics of effective teacher
        3.1 personal characteristics
        3.2 professional characteristics

Introduction:
The positive and negative behaviors exhibited by teachers determine, to a great extent, their effectiveness in the classroom and, ultimately, the impact they have on student achievement. Several specific characteristics of teacher responsibilities and behaviors that contribute directly to effective teaching are listed for each of the following categories:
- The teacher as a person
- Classroom management and organization
- Organizing and orienting for instruction
- Implementing instruction
- Monitoring student progress and potential
- Professionalism

Further Reading: Stronge, J. (n.a) Qualities of Effective Teachers. Retrieved from: http://mnprek-3.wdfiles.com/local--files/teacher-effectiveness/Qualities%20of%20Eff%20Teachers%20-%20Stronge.pdf

360

Attributes of a professional teacher

3.1 Personal Characteristics
- Integrity
- Attitude
- Commitment
- Passion
- Compassion
- Warmth & enthusiasm
- Sense of humor
- Flexibility
- Honesty
- Respect
- Giving
- Responsible
- Caring
- Association
- Discipline
- Persistent

3.2 Professional Characteristics
- Knowledge base
- Pedagogy
- Communication
- Leadership
- Self-appraisal
- Professional development

Categorization of attributes

Personality	Process	Performance
Caring	Content Organization	Body Language Style
Empathy	Content Development	Speaking Style
Happiness	Content Design	Technology
Energy	Additional Sense	Focus
Passion	Stimulation	Interaction
Motivation	Environment	
Expertise		
Inspiration		
Self-Confidence		
Approachable		
Personal		
Appearance		

Further Reading: Jahangiri, L. and Mucciolo, T. W. (2007) Characteristics of Effective Classroom Teachers as Identified by Students and Professionals: A Qualitative Study. Journal of Dental Education, Volume 72, Number 4
http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.491.8425&rep=rep1&type=pdf

Activity:
Ask what students think of themselves as a future teachers and ask them to reflect on their perception about the characteristics they want to bring in their selves

Feedback
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise
1. Explain the characteristics of an effective teacher?
2. How teachers can improve and demonstrate professional characteristics in teaching profession?
3. Draw a comparison between personal and professional characteristics of teachers

Summary and transition:
- Teaching is a very demanding profession, consequently teachers must be competent and adaptable to address the challenges.
- the skill to handle challenges comes largely from teachers' attitude, commitment, experiences, maturity and wisdom
- all attributes of a professional teacher are the pre-requisites to teaching
- these competencies and values teachers bring to the classroom and transfer to their students.

Unit 4: Teaching as a profession
    4.1 Concept of profession
    4.2 Roles and responsibilities
        4.2.1 Code of Ethics
        4.2.2 Accountability
    4.3 Demands and challenges

Introduction:
A profession is an occupation which performs a crucial social function. To accomplish this function it requires a considerable degree of skill requires a body of systematic knowledge grounded in theory. This acquisition of this body of knowledge and the development of specific skill entails a lengthly period of higher education. The period of education and training involves the process of socialization into professional values. These professional values tends to center on the pre-eminence of essential for the professional to have the freedom or autonomy to make his/her own judgements with regard to appropriate practice

Introductory Activity: Show a video to the students about "teaching as a profession" and ask students to watch the video carefully and discuss what they have learned from this.

Unit objectives:
After studying this unit, the student will be able to:
9. explain the concept of profession

362

| 10. analyze roles and responsibilities of a professional teacher |
| 11. interpret and develop a code of ethics |
| **12.** categorize demands and challenges of a professional teacher |

PK Activity:
- What do you think yourself as a teacher?
- What your profession demands from you as a teacher?

4.1 Concept of profession
Following definition of profession:
- "The occupation which one professes to be skilled in and to follow. A vocation in which professed knowledge of some branch of learning is used in its application to the affairs of others, or in the practice of an art based upon it. Applied specifically to the three learned professions of divinity, law, and medicine; also the military profession."
- In the Oxford English Dictionary, a professional is one who is "engaged in one of the learned or skilled professions, or in a calling considered socially superior to a trade or handicraft."
- Webster's New Universal Unabridged Dictionary offers this definition of profession: "A vocation or occupation requiring advanced training in some liberal art or science, and usually involving mental rather than manual work, as teaching, engineering, writing, etc.; especially, medicine, law, or theology (formerly called the learned professions)."
- Professionals profess to know better than others the nature of their specialty, and to know what is best for their client in this specialty.

Reading: Professionalism and Ethics *Every calling is great when greatly pursued." Oliver Wendell Holmes*

4.1.1 Professional
Professional is one who has:
- a specialized knowledge base (technical culture);
- commitment to meeting client needs (service ethic)
- strong collective identity-professional commitment (professional commitment);
- collegial as against bureaucratic control over practice and professional standards (professional autonomy).

4.1.2 Characteristics of professionals:

- possess a specialized skill enabling them to offer a specialized service
- undergo intellectual and practical training in a well-defined area of study
- maintain detachment and integrity in exercising personal judgement on behalf of a client
- establish direct, personal relations with a client, based on confidence, faith and trust
- collectively have a sense of responsibility for maintaining the competence and integrity of the professional as a whole tend or required to avoid certain manners of attracting business are organized in bodies which, with or without state intervention, are concerned to provide the machinery for testing competence and regulating standards of competence and conduct

4.2 Roles and Responsibilities of a Professional Teacher
- Leader who can inspire and influence students through expert and referent power but never coercive power. This teacher knows his students well and is kind and respectful towards his students. He has

363

high standards and expectations coexisting with encouragement, support and flexibility. The teacher empower students and get them to do things of which they did not think they were capable.
- Coach/guide who helps students to improve on their skills and insights
- Disseminator of knowledge and skills
- Role model to the student; practices what he/she preaches. He/She upholds moral values and humanitarian principles in all his actions. Teachers conduct their day –by-day doing in such a way that their behaviour can be cherished by the learners. Teachers should be a human model for learners therefore, they must uphold all codes of ethical conduct that are necessary and essential in human modeling and moral education.
- innovator, creative, resourceful and encourages diversity and individuality in his students.

Activity: Ask students to brainstorm and reflect upon the following question: What is expected by a teacher from parents, students, society, and government?

4.2.1 Code of Ethics
Ethical responsibilities to students
- Teachers will educate students to high standards of achievement. The teacher shall use best professional practices and materials and the teacher is knowledgeable of and delivers the standards-based curriculum
- Teacher shall engage in practices and select materials that include all students, celebrate diversity and never exclude them from opportunities on the basis of their race, gender, ethnicity, religion, national origin, language, ability or the status, behaviour or beliefs of their parents
- The teacher is committed to developing the skill sets needed to best accelerate the learning of the students currently in their classrooms
- The teacher creates a classroom environment that is respectful, emotionally secure and physically safe for students

Ethical Responsibilities to Family/Community
- The teacher shall inform families of program philosophy, policies and personnel qualifications and explain why we teach as we do, which should be in accordance with our ethical responsibilities to students
- The teacher shall involve families in significant decisions affecting their student and regularly communicate student progress with families
- The teacher shall inform the family of accidents involving their student, of risks such as exposures to contagious disease that may result in infection and of occurrences that might result in emotional stress
- The teacher shall maintain confidentialilty and shall respect the family's right to privacy, refraining from disclosure of confidential information and intrusion into family life, except when a student's welfare is at risk
- The teacher shall be objective and accurate in reporting the knowledge upon which we base our programs, assessments and professional practices
- The teacher shall cooperate and team with other professionals who work with students and families
- The teacher shall exercise care in expressing views regarding students.
- Statements shall be respectful and based on firsthand knowledge.

Ethical Responsibilities to Colleagues
- The teacher shall show respect for personal dignity and for the diversity found among staff members, and to resolve matters collegially
- The teacher shall exercise care in expressing views regarding the professional behaviour or conduct of co-workers and/or students.
- The teacher agrees to carry out the program at the site to which we are assigned. When we do not agree with the program policies, we shall first attempt to effect change through constructive action within the organization

364

- Teachers who do not meet program standards shall be informed of areas of concern and, when possible, assisted in improving their performance
- In making assessments and recommendations, the teacher shall make judgements based on fact and relevant to the interests of students and programs

Further Reading: Professionalism and ethics in teaching David Carr 2005 by Routledge NY

4.2.2 Accountability
- Teacher accountability refers to the responsibility towards one's teaching profession
- Job accountability
  - Performs curriculum and co-curriculum activities
  - Follow job procedures
  - Internalize one's work ethics
  - Responsible and perform job with dedication and commitment
- Accountability towards nation
  - knowledge practitioner and educate citizens
  - inculcate moral values, develop and preserve our culture
  - realization of the national philosophy of education and vision of the country
  - instill national integration
  - develop a progressive generation
- Accountability towards students and parents
  - disseminate knowledge and skills to students
  - educate and inculcate moral values
  - inculcate good behaviours
  - develop students' potentials intellectually, spiritually, emotionally and physically
- Accountability towards self
  - as a model for students
  - maintain good behaviours
  - update oneself on current knowledge and skills

- perform one's job sincerely

Attributes of the 21ˢᵗ Century Teaching Professional
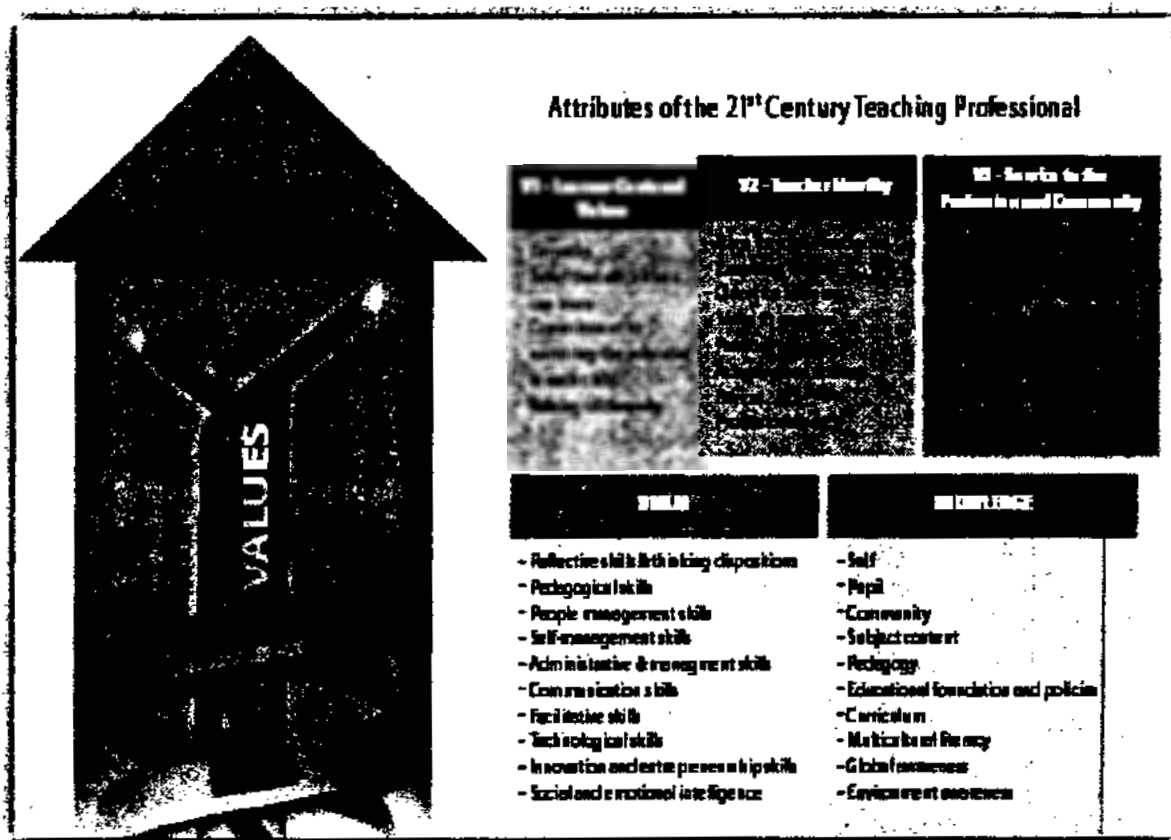
Further Reading: Kanika (2016) Teachers' Accountability: Key to Quality Education. International Journal of Advanced Research in Education & Technology (IJARET) Vol. 3, Issue 1 (Jan. - Mar. 2016)

4.3 Demands and challenges of a professional teacher
- knowledge
  - Awareness of self and surroundings
  - Subject knowledge with specialization
  - Understanding professional requirements
  - Good perception of social and moral values
  - Understanding students potentials and needs
- skills
  - Learning art of teaching
  - Designing interactive activities
  - Learning teaching methods and strategies
  - Measuring learning achievement
- planning
  - Learning course planning
  - Learning sessions planning
  - Learning academic planning
  - Learning assessment planning

- Management
  - o Learning administrative skills
  - o Learning management skills
  - o Learning official correspondence
  - o Learning record keeping skills
- research
  - o Planning research
  - o Conducting research
  - o Supervising research
  - o Report writing
  - o Paper writing
- attitude towards academic environment
  - o Respect for administrative hierarchy
  - o cooperation with Individuals and groups
  - o Developing acceptable behavior
  - o Respect for others ideas and care
  - o Following the ethical codes
  - o Positive social interaction

Further Reading:
A Teacher Education Model for the 21st Century: A Report by the National Institute of Education, Singapore Retrieved from: https://www.nie.edu.sg/docs/default-source/nie-files/te21_executive-summary_101109.pdf?sfvrsn=2

Activity: Explain the given picture
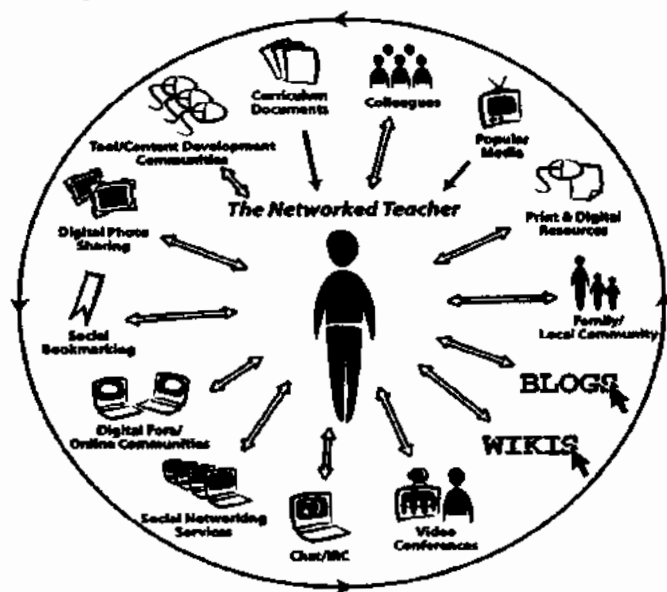
The Networked Teacher

Feedback:
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening

367

•	Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
- Explain the concept of profession andanalyse major roles and responsibilities of a professional teacher
- What is meant by code of ethics? Discuss the importance of professional teachers' code of ethicsin teaching profession.
- Explain and categorize the demands and challenges of a 21st century professional teacher with diagram and examples.

Module 02 Teaching Process

Unit 1: Process of teaching
     1.1 Planning
     1.2 Revision
     1.3 Assessment
     1.4 Implementation

Unit 2: Variables of teaching
     2.1 The Transmission Model of Teaching and Learning
     2.2 Lowman's Two-Dimensional
     2.3 Teaching-Learning Transactional Model of College Teaching
     2.4 Groccia's Model for Understanding Teaching and Learning

Unit 3: Active learning
     3.1 What is learning?
     3.2 Levels of learning
     3.2 Active learning model
     3.3 Dale cone of experiences
     3.4 Active learning strategies

Unit 4: Characteristics/principles/laws of learning
     4.1 Readiness
     4.2 Exercise
     4.3 Effect
     4.4 Primacy
     4.5 Intensity
     4.6 Recency

Unit 5: Information processing
     5.1 Basic assumptions
     5.2 Computer-mind analogy
     5.3 The information processing system
     5.4 Stage model of information processing

Unit 6: Teaching and learning process
     6.1 Context
     6.2 Input
     6.3 Classroom Processes
     6.4 Output

Introduction

The essence of matter, the origins of the universe, the nature of the human mind—these are the profound questions that have engaged thinkers through the centuries. Until quite recently, understanding the mind—andthe thinking and learning that the mind makes possible—has remained an elusive quest, in part because of a lack of powerful research tools. Today, the world is in the midst of an extraordinary outpouring of scientific work on the mind and brain, on the processes of thinking and learning, on the neural processes that occur during thought and learning, and on the development of competence.

369

The revolution in the study of the mind that has occurred in the last three or four decades has important implications for education. As we illustrate, a new theory of learning is coming into focus that leads to very different approaches to the design of curriculum, teaching, and assessment than those often found in schools today. Equally important, the growth of inter- disciplinary inquiries and new kinds of scientific collaborations have begun to make the path from basic research to educational practice somewhat more visible, if not yet easy to travel.

Thirty years ago, educators paid little attention to the work of cognitive scientists, and researchers in the nascentfield of cognitive science worked far removed from classrooms. Today, cognitive researchers are spending more time working with teachers, testing and refining their theories in real classrooms where they can see how different settings and classroom interactions influence applications of their theories.

Further Reading:
How people learn: brain, mind, experience, and school John D. Bransford, Ann L. Brown, and Rodney R. Cocking, editors National Academy PressWashington, D.C.

Module objectives:
After studying this unit, the student will be able to:
9. Explain the process of teaching and its intervening variables
10. Design and apply active learning strategies in classroom situation
11. Interpret characteristics/principles/laws of learning
12. Conceptualize information processing model with its application in real situation

---

Unit 1: Process of teaching
1.1 Planning
1.2 Revision
1.3 Assessment
1.4 Implementation

Introduction:
Teaching is fundamentally a process, including planning, implementation, evaluation and revision. Planning and teaching a class are familiar ideas to most instructors. More overlooked are the steps of evaluation and revision. Without classroom assessments or some other means of receiving feedback on a regular basis, it is surprisingly easy to misunderstand whether a particular teaching method or strategy has been effective. A teacher can create an environment of mutual trust and respect by relying on students for feedback -- students can be a valuable resource for verifying whether the class pedagogy is (or isn't) working. Self-examination with feedback from your students and the instructor are key to improving your teaching.

Introductory Activity: Show a video to the students about the process of teaching and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives:
After studying this unit, the students will be able to:
9. Conceptualize the concept about process of teaching and its components
10. Determine planning procedures and goals at different levels of teaching
11. Plan revision of lesson to improve teaching process
12. Develop assessment strategies to evaluate students

1.1 Planning

There are many different levels of setting goals for teaching, from the scale of an entire semester (syllabus) to a single class (lesson plan). You have the overall task of helping your students learn how to think critically and to understand the basic concepts and tools of your discipline. You should also have more specific day-to-day goals, such as examining the social context of Victorian women writers or demonstrating how to integrate partial differential equations. As a graduate TA you probably will not be responsible for designing an entire course, but you should think about how your day-to-day teaching fits into the larger goals of the course.

1.2 Revision

Revising your pedagogy will help your students learn... and keep you interested. If you keep your focus on student learning, you will find a richer meaning to the typical lecture/discussion/test/grade process. Instead of an adversarial relationship, the teaching process encourages a relationship of cooperation and mutual discovery. Ernest Boyer helped redefine the notion of scholarship, in fact, by including the scholarship of teaching as a culminating activity of the research process of discovery, integration, and application of knowledge (Boyer 1990).

1.3 Assessment

Regular assessment of your students and yourself is critical to your success as a teacher. To really understand whether you are teaching effectively and your students are learning effectively, it is crucial that you actively and regularly assess what your students have learned. If you are able to solicit meaningful feedback from your students and the professor on a regular basis (not just at the end of the semester), you can modify and improve your teaching strategies. Assessments do not need to be overly complex or involved. In fact, the more focused you are in the assessment, the more impact your changes will have.

1.4 Implementation

The best plans are meaningless if you don't try them. Although most of the work in teaching comes in planning and preparation, many great ideas are never implemented because it was easier to just keep doing the same thing. Don't be afraid if you have and idea you want to try. If something hasn't been working right, why not change what you are doing and try something new? Unless you are willing to change and experiment, you will find it difficult to improve your teaching skills.

Further Reading: Teaching as a Process. Center for New Design in Learning and Scholarship. Georgetown University. Retrieved from:
https://cndls.georgetown.edu/atprogram/twl/teaching-as-process/

- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to the students and confirms that you have been actively listening – this information allows sharing between two people
- Provide the students with suggestions, recommendations, and information to correct their performance

Unit Exercise:
4. Explain the process of teaching and its various components with examples.
5. How teachers will determine planning procedures and goals at different levels of teaching? Explain with examples
6. Discuss the role of planning revisions of lesson to improve teaching process
7. How teachers can better evaluate students?

Summary and transition:
- Teaching is fundamentally a process, including planning, implementation, evaluation and revision.
- There are many different levels of setting goals for teaching, from the scale of an entire semester (syllabus) to a single class (lesson plan.
- Revising your pedagogy will help your students learn and keep you interested. If you keep your focus on student learning, you will find a richer meaning to the typical lecture/discussion/test/grade process.
- Regular assessment of your students and yourself is critical to your success as a teacher. To really understand whether you are teaching effectively and your students are learning effectively, it is crucial that you actively and regularly assess what your students have learned.
- The best plans are meaningless if you don't try them. Although most of the work in teaching comes in planning and preparation, many great ideas are never implemented because it was easier to just keep doing the same thing. Don't be afraid if you have and idea you want to try.

Unit 2: Variables of teaching
2.1 Variables of teaching process
2.2 The Transmission Model of Teaching and Learning
2.3 Lowman's Two-Dimensional
2.4 Teaching-Learning Transactional Model of College Teaching
2.5 Groccia's Model for Understanding Teaching and Learning

Introduction:
Multiple Variables within the Teaching and Learning Process Effective teaching is adaptive teaching and is at the center of effective implementation of RTI. It is changing and adapting a lesson and a unit in ways that make them fit the students. No two lessons or units will be the same as teachers use their knowledge, skills, and expertise to adapt and enhance lessons based upon what their students do and say. Therefore, it is important for teachers to think about and analyze student knowledge, interests, and needs; reflect on their own content knowledge and pedagogy; and make decisions about the multiple variables within teaching and learning so that each student learns the curriculum.

Introductory Activity: Show a video to the students about the variables of teaching and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives:
After studying this unit, the students will be able to:
7. identify variables of teaching process that effect in teaching and learning

| 8. develop and explain models of teaching processes |
| 9. compare various models reflecting teaching and learning processes. |

Variables of teaching process

- instructional arrangements (e.g., whole class to individual);
- instructional delivery methods (e.g., inquiry, direct instruction, etc.);
- resources and materials;
- student engagement techniques;
- technology; and supplemental interventions

Teachers continuously use an instructional planning and decision-making process (a.k.a., action research, problem-solving) to make these important instructional decisions to meet the needs of their students. Through this process, teachers, sometimes in collaboration with other professionals (e.g., reading coach, interventionist, grade level team members, special education teacher, etc.), plan, teach, and assess student learning daily by incorporating multiple options in their lessons to assure all variables and key components.
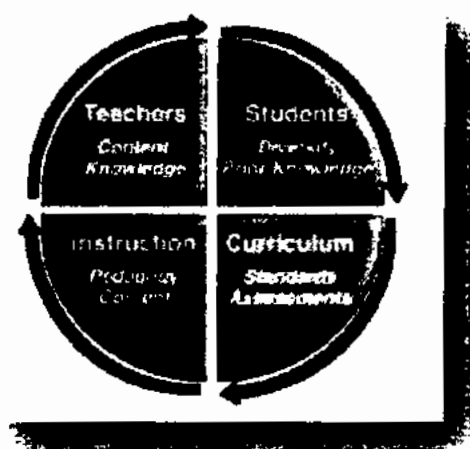
Further Reading: Multiple Variables within the Teaching and Learning Process. National Professional Resources, Inc./Dude Publishing. (2013)
https://www.nprinc.com/content/free-resources/RTI-Lesson-Planning-p4.pdf

2.1 The Transmission Model of Teaching and Learning

373

Based on the prevalent form of instruction in the majority of higher education classrooms around the world, the lecture, one would assume that teaching and learning is a simple process. The teacher's (the expert) job is to transfer knowledge through talking to students (the no-ice) whose role is to receive knowledge through listening, watching, and maybe taking notes. The transmission model can be called the default conceptualization of teaching. This default model is fraught with difficulties, the most significant of which is its very simplicity. Such a conceptualization ignores the complexity of the teaching-learning process and the importance and interplay of many influential variables. Having a comprehensive model from which to view teaching and learning can guide individual faculty members in the design of teaching and learning actions and environments and guide educational developers in selecting and presenting the content for instructor training programs.
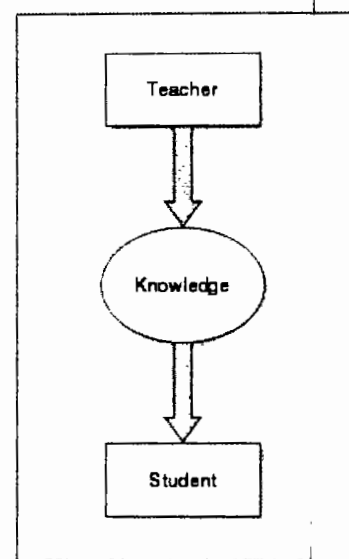
2.2 Lowman's Two-Dimensional

Lowman identified a twodimensional model of exemplary teaching that focused on intellectual excitement created by instructor clarity in the classroom, and interpersonal rapport and relationship building with students. This model can be characterized as teacher-centered and performance-based, and it does not focus on pre-instruction behaviors or the influence of the instructional setting. Classroom dynamics, such as student and teacher attitudes and class moral and some psychological issues of teachers and students are mentioned (i.e., sources of satisfaction and dissatisfaction, communication styles, interpersonal interaction between teachers and students, affective and classroom control measures) but Lowman's focus is primarily on the teaching skills of instructors.

Dimension 1: Intellectual Excitement
• Clarity of presentations (what is presented)
• Emotional impact on students (way material is presented)

Dimension 2: Interpersonal Rapport
• Awareness of interpersonal nature of the classroom
• Communication skills that enhance motivation and enjoyment of learning and that foster independent learning

2.3 Teaching-Learning Transactional Model of College Teaching

This transactional model provide a framework to guide college teacher reflection "before, in-the-moment, and after the event, that recognizes the complexity of the act of teaching, is sensitive to the aesthetic dimensions of both teaching and reflection, and provides a context to examine tacit decisions made during the act of teaching." (p. 130). The transactional aspect of thismodel illustrates the connected back and forth aspect of the various instructional elements.

374
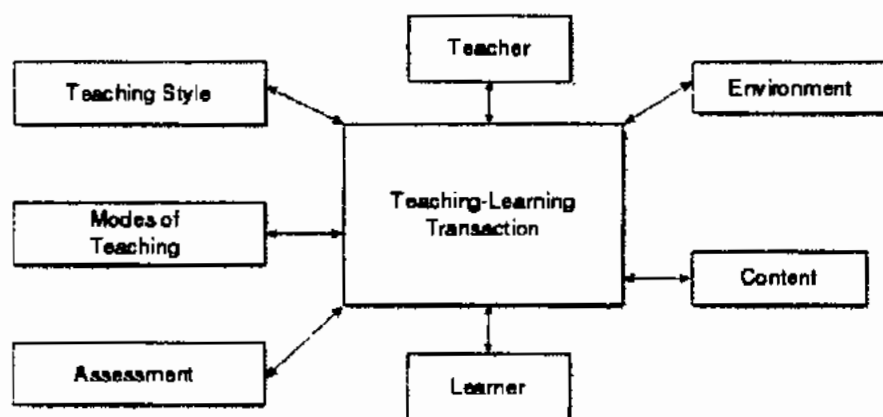
2.4 A Model for the Study of Classroom Teaching

Michael Dunkin and Bruce Biddle (1974), proposed a four-variable model to help educational researchers better understand the complex aspects of classroom instruction. This model illustrates the complexity and interconnectedness of college teaching. Dunkin and Biddle's model contains four classes of variables for study: presage (teacher characteristics, experiences, training), context (properties of pupils, schools, community, classroom), process (teacher and student actions), and product (immediate and long-term effects). Each rectangle in the model represents a region of variables deserving of research, and the arrows presume a causative relationship between regions and are sources of hypotheses for future research. This model had "an enormous impact" (Shulman, 1986, p. 6) on the field of educational research by providing a theoretical framework and vocabulary for those studying teaching and learning.

375
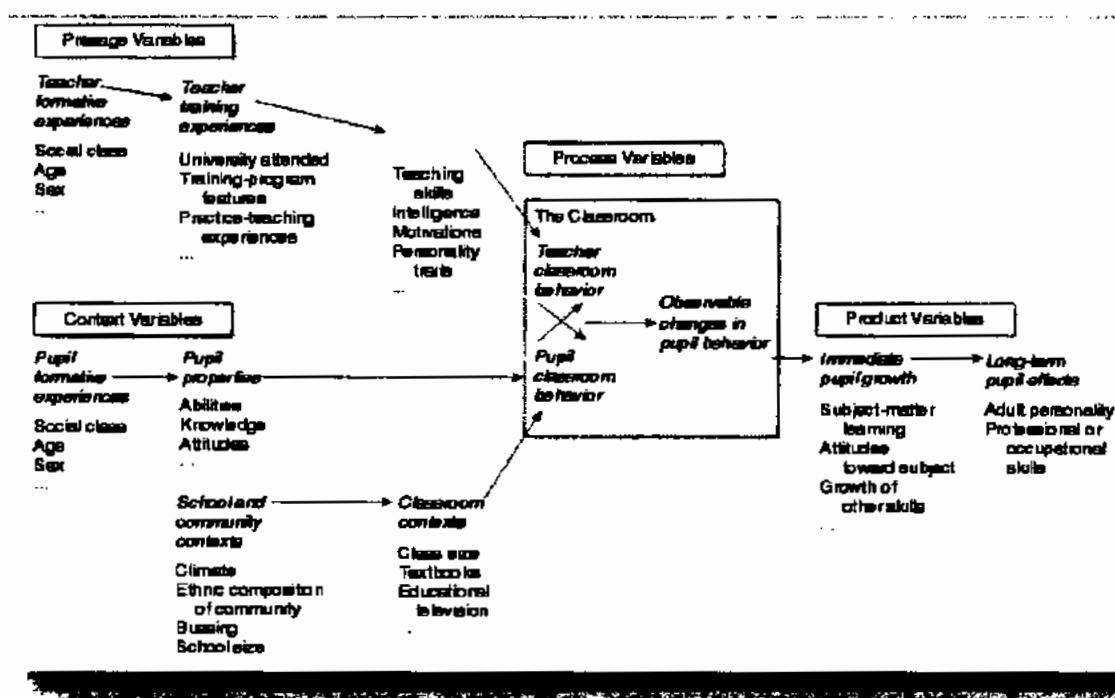
2.5 Groccia's Model for Understanding Teaching and Learning

This model consists of seven interrelated variables that influence teaching and learning: learning outcomes, instructional processes, course content, teacher and student characteristics, learning process, and learning context. These variables are not new to faculty in higher education. But, for many reasons, faculty members tend to focus on one or two of them and overlook the others. Each variable is represented by an oval, and the lines connecting the ovals represent their interconnectivity. Learning outcomes (product variables) are placed at the bottom of the model to illustrate that they are the foundation upon which all the other variables rest. The large oval in the center of the model represents what the teacher and students do, the teaching and learning behaviors, techniques, and methods (process variables). The ovals at the top of the model can be considered indicator or preliminary variables, and represent factors that should be assessed and understood before teaching and determining appropriate learning outcomes. The first variable for instructors to consider in understanding teaching and learning is what they want students to get from the instructional experience, the learning outcomes. These are the short- and long-term learning goals and outcomes of the instructional experience. Assessment is a key function to determine whether identified learning outcomes have been met through the instructional processes that reflect the instructor, learner, learning process, learning context, and content variables of the model. Objective and subjective assessment techniques as well as summative and formative assessment methods to measure learning outcome attainment should be determined before instruction as well as throughout the teaching and learning experience. Included in this variable are also measures to assess teaching effectiveness.
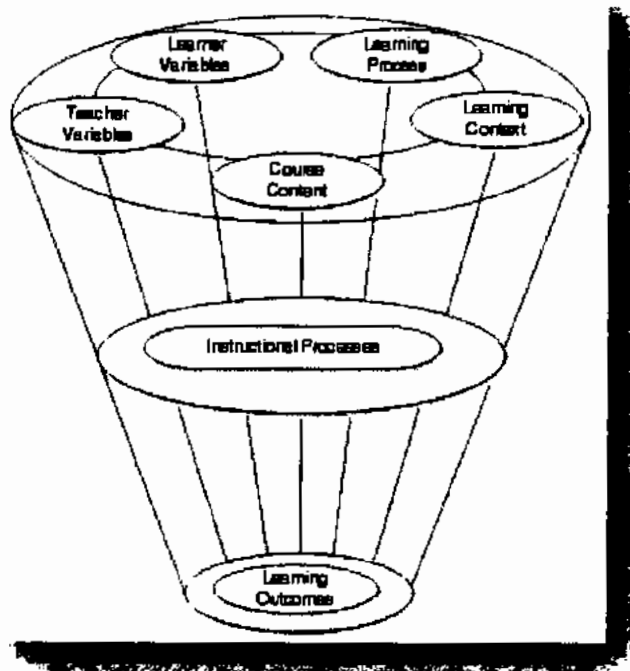
Further Reading: Groccia, J. E. (N.A) A Model for Understanding University Teaching and Learning. Retrieved from:
https://in.sagepub.com/sites/default/files/upm-binaries/47538_ch_1.pdf

Activity: Ask students brainstorm in groups, construct a concept map and add more components related to teaching process

Feedback:
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
1. Explain teaching process with diagram and examples.
2. Develop a most comprehensive model of teaching process and explain it with examples
3. Critically compare following teaching and learning process models and draw solid conclusions.
   a) The Transmission Model of Teaching and Learning
   b) Lowman's Two-Dimensional
   c) Teaching-Learning Transactional Model of College Teaching
   d) Groccia's Model for Understanding Teaching and Learning

Summary and transition:
- Multiple Variables within the Teaching and Learning Process that makes teaching Effective.
- it is important for teachers to think about and analyze student knowledge, interests, and needs; reflect on their own content knowledge and pedagogy; and make decisions about the multiple variables within teaching and learning so that each student learns the curriculum.
- Variables of teaching process are: instructional arrangements (e.g., whole class to individual); instructional delivery methods (e.g., inquiry, direct instruction, etc.); resources and materials; student engagement techniques; technology; and supplemental interventions
- Models reflecting teaching processes in detail are: The Transmission Model of Teaching and Learning; Lowman's Two-Dimensional; Teaching-Learning Transactional Model of College Teaching and Groccia's Model for Understanding Teaching and Learning

Unit 3: Active learning
    3.1 What is learning?
    3.2 Levels of learning
    3.2 Active learning model
    3.3 Dale cone of experiences
    3.4 Active learning strategies

Introduction:
"We never educate directly, but indirectly by means of the environment. Whether we permit environments to dowork or whether we design environments for the purpose makes a great difference." - John Dewey (1906)

Introductory Activity: Show a video to the students about the concept of active learning and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives:

377

After studying this unit, the students will be able to:
11. Explain the concept of learning
12. Apply the levels of learning in classroom situation
13. Draw and analyze active learning model
14. Interpret Dale cone of experiences
15. Create active learning strategies

3.1 Learning

Learning is the acquisition of knowledge, habits and attitudes. It involves new ways of doing things and it operates in an individuals attempt to overcome obstacles or to adjust to new situations"
Learning is:
- acquisition and retention
- modification of behavior
- adjustment to environment
- Acquisition of new experiences
- Retention of old experiences
- Development and modification of experience
- Synthesis and organization of the old and the new experiences

3.2 Levels of learning

There are four basic levels of learning. The lowest level is the ability to repeat something which one has been taught, without understanding or being able to apply what has been learned. This is referred to as rote learning. Progressively higher levels of learning are understanding what has been taught, achieving the skill for application of what has been learned, and correlation of what has been learned with other things previously learned or subsequently encountered

Correlation Associating previously learned knowledge with new situation	Example: • Making new words by using letter A
Application Using information	Example: • Using knowledge of letter sounds to read.
Understanding Understanding facts or information	Example: • Knowing the sounds the letter A represents
Rote Knowing facts or information	Example: • Knowing that A is the letter A.
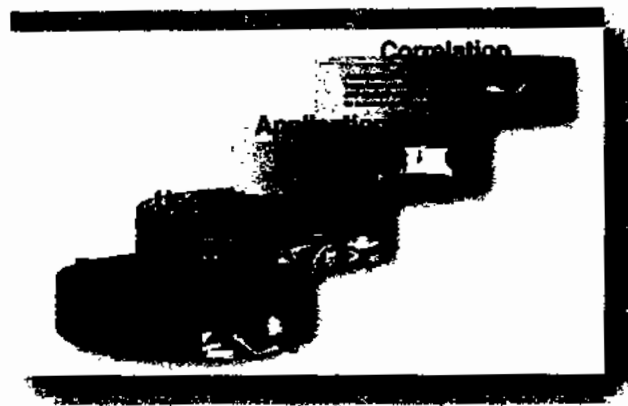
378

3.3 Active Learning:

Many teachers today want to move past passive learning to active learning, to find better ways of engaging students in the learning process. But many teachers feel a need for help in imagining what to do, in or out of class, which would constitute a meaningful set of active learning techniques.

Active learning is characterized by its high level of student engagement in classroom activities that involve the students to execute tasks intellectually and physically. According to Jeffrey Anderson, "Active learning would include those activities that charge our brains and capacities to remember what we are experiencing." These experiences that students are having increase what they are learning and puts the focus more on learning rather than learning. The teacher is not the transmitter or information but rather the facilitator for the teacher to produce their own knowledge.
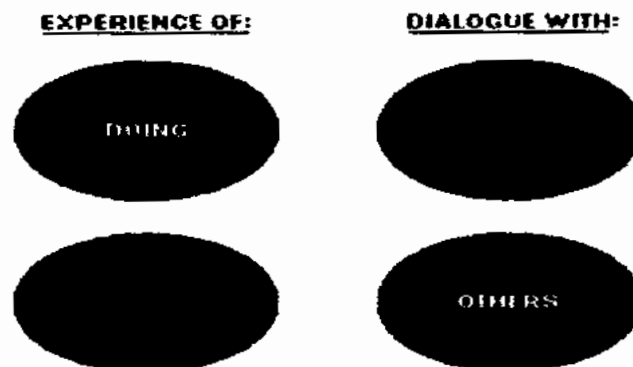
This diagram suggests that all learning activities involve some kind of experience or dialogue. The two main kinds of dialogue are "Dialogue with Self" and "Dialogue with Others." The two main kinds of experience are "Observing" and "Doing."

Further Reading: Fink, L. D. (2010) Active Learning. University Oklahoma Instructional Development Program, University of Oklahoma. Retrieved from: https://commons.trincoll.edu/ctl/files/2013/08/Week-3-Active-Learning.pdf

Activity: What activities can be conducted in classrooms for:

	–	Dialogue with self
	–	Dialogue with others
	–	Observing
	–	Doing

3.4 Dale cone of Experience

Dale's Cone of Experience is a model that incorporates several theories related to instructional design and learning processes. During the 1960s, Edgar Dale theorized that learners retain more information by what they "do" as opposed to what is "heard", "read" or "observed". His research led to the development of the Cone of Experience. Today, this "learning by doing" has become known as "experiential learning" or "action learning".
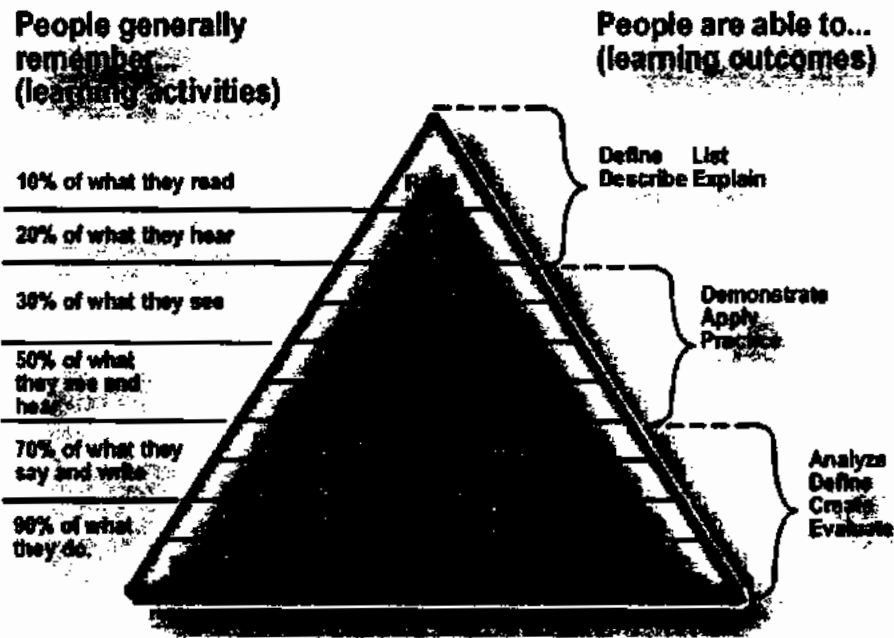
People generally remember... (learning activities)

People are able to... (learning outcomes)

10% of what they read

20% of what they hear

30% of what they see

50% of what they see and hear

70% of what they say and write

90% of what they do

Define List
Describe Explain

Demonstrate
Apply
Practice

Analyze
Define
Create
Evaluate

People generally remember... (learning activities)

10% of what they read
20% of what they hear
30% of what they see
50% of what they see and hear
70% of what they say and write
90% of what they do.

Passive Learning
Active Learning

People are able to... (learning outcomes)

Define List Describe Explain

Demonstrate Apply Practice

Analyze Define Create Evaluate

According to Dale's research, the least effective method at the top, involves learning from information presented through verbal symbols, i.e., listening to spoken words. The most effective methods at the bottom, involves direct, purposeful learning experiences, such as hands-on or field experience. Direct purposeful experiences represents reality or the closet things to real, everyday life.

It reveals that "action-learning" techniques result in up to 90% retention. People learn best when they use perceptual learning styles. Perceptual learning styles are sensory based. The more sensory channels possible in interacting with a resource, the better chance that many students can learn from it. According to Dale, instructors should design instructional activities that build upon more real-life experiences.

Further Reading: Anderson, H. M. (n.a) Dale's Cone of Experience. Retrieved from: https://www.queensu.ca/teachingandlearning/modules/active/documents/Dales_Cone_of_Experience_su mmary.pdf

3.5 Active Learning Strategies
3.5.1 Round table discussion:
A discussion which may follow any number of specific protocols, but that is based on the agreement that each person has equal opportunity to contribute and equal status in the discussion.
3.5.2 Connecting a topic:
Pointing out similarities between the topic to be studied and one that is more contemporary, more familiar, or more interesting to your students.

3.5.3 Brainstorming:
A method of collaborative problem solving in which all members of a group spontaneously contribute ideas, or a similar process undertaken by an individual to solve a problem by rapidly generating and recording a variety of possible solutions.
3.5.4 Role-playing:

The instructor provides either real or imaginary contexts along with a range of relevant characters/roles; students are encouraged to research these contexts, characters, and/or roles, and then to improvise dramatic interactions among their characters during class periods.

3.5.5 Student debate:
A formal discussion in which an issue or topic is approached from two, completely opposite points of view. These are generally held with strict protocols that determine the procedure for presenting each argument, critique, and rebuttal, and that designate stages for speaking and listening

3.5.6 Service learning:
Instructional projects that link community service and academic study so that each strengthens the other. The basic theory of service-learning is that the interaction of knowledge and skills with experience strengthens learning, and contributes to the community in meaningful ways.

3.5.7 Student field work with reflection:
Any number of organized or individual instructional experiences that are held outside the classroom. Their design is meant to be as authentic as possible or as the instructional topic permits. Students are usually asked to journal, report, or otherwise produce documentation and/or their impression of the experience.

3.5.8 Poll, pretest:
A poll is a survey conducted about a topic by asking questions that can be answered by yes/no or agree/disagree. These generally give quick collective feedback which can influence the ensuing instruction, although it is usually not detailed in nature and does not assess individual student perceptions.

A pretest is an examination given before the instruction that tests what students will be expected to know after the instruction. It enables instructors to know what kinds of initial knowledge and misconceptions students have when they begin the module of instruction.

3.5.9 Mind Mapping:
Involves writing down a central idea and thinking up new and related ideas which radiate out from the centre. By focusing on key ideas written down in your own words, and then looking for branches out and connections between the ideas, you are mapping knowledge in a manner which will help you understand and remember new information.

3.5.10 Concept Mapping:
Concept Mapping is a technique for representing knowledge in graphs. Knowledge graphs are networks of concepts. Networks consist of nodes and links. Nodes represent concepts and links represent the relations between concepts. Concepts and sometimes links are labeled. Links can be non-uni-or bi-directional.Concepts and links may be categorized, they can be simply associative, specified or divided in categories such as causal or temporal relations. Concept mapping can be done to generate ideas, to design a complex structure (long texts, hypermedia, large web sites, etc., to communicate complex ideas, to aid learning by explicitly integrating new and old knowledge, or to assess understanding or diagnose misunderstanding.

3.5.11 Visual Webs:
Visual Webs are concept maps that may also contain images, different ways of visually constructing relationships (such as Venn diagrams instead of points and lines), and explanatory textual material.

3.5.12 Use of charts, matrices, flowcharts, models:
Visually-inspired representations of concepts which enable students to approach the material in more concrete ways. These generally not only include the concepts themselves, but also ways in which they can be ranked, prioritized, compared, contrasted, and understood in context.

3.5.13 Case study, mini-case study:
An analysis of a particular case or situation, either real or constructed, that is used as a basis for the application of knowledge and/or drawing conclusions in similar situations. The analysis can be of a person or group, or even an intensive study of a unit, such as a corporation or a corporate division. A case study can be exemplary, cautionary, or instructive. Exemplary and cautionary case studies are presented in total to serve as a model for success or failure, for example. Instructive case studies can present problems that require identification through clues, symptoms, or outcomes and consist of background information that can be ambiguous, incomplete, or hidden.

3.5.14 Problem-based learning:

A pedagogical strategy based on constructivist learning theory that simultaneously develops both problem-solving strategies and disciplinary knowledge bases and skills by placing students in the active role of problem solvers. Students are confronted with problems that are "ill-structured," that is, they do not have clear-cut, absolute answers. These problems reflect the complexity of real-world situations. The tasks are designed to be as authentic, in terms of emulating real-world tasks and environments, and are designed to foster transfer of learning to real-world situations that the learner may encounter in the future. In addition, they require learners to actively explore information resources other than the teacher, including primary documents, reference materials and community members, and to draw on knowledge from diverse subject areas.

3.5.15 Student creative construction (visual, performance, or literary):

Based on a set of criteria which are determined in the course and informed by course materials, students determine a topic in which they will develop a creative project in order to convey any number of themes. Either individually or collaboratively, students then produce an artistic product. In the process of creative expression, students approach the material more affectively and reflectively.

Further Reading: Active Learning Strategies, Office of Instructional Consulting, School of Education, Indiana University Bloomington. Retrieved from:
https://twut.nd.edu/PDF/active_learning_techniques.pdf

Activity: Ask students brainstorm in groups, design some active learning strategies and conduct in class.

Feedback:
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

---

Unit Exercise:
1. Explain the concept of learning and discuss why it is important to achieve all levels of learning for students' conceptual clarity.
2. Critically analyze active learning model with diagram and examples
3. "Dales' cone of experiences is a tool to help instructors make decisions about resources and activities" Discuss.
4. How active learning strategies can help students to enhance their learning?

Summary and transition:
- Learning is the acquisition of knowledge, habits and attitudes. It involves new ways of doing things and it operates in an individual attempt to overcome obstacles or to adjust to new situations"
- There are four basic levels of learning. The lowest level is referred to as rote learning. Progressively higher levels of learning are understanding what has been taught, achieving the skill for application of what has been learned, and correlation of what has been learned with other things previously learned or subsequently encountered
- Active learning is characterized by its high level of student engagement in classroom activities that involve the students to execute tasks intellectually and physically.
- Dales' cone of experiences is a tool to help instructors make decisions about resources and activities. It is a model that incorporates several theories related to instructional design and learning processes.

Introduction:
Over the years, educational psychologists have identified several principles which seem generally applicable to the learning process. They provide additional insight into what makes people learn most effectively.

Introductory Activity: Show a video to the students about the Characteristics/principles/laws of learning and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives:
After studying this unit, the students will be able to:
7. conceptualize laws of learning by developing a concept map
8. design activities according to laws of learning to conduct in classroom
9. apply laws of learning in teaching learning process

PK Activity:
✓ ask each student to provide at least one definition of learning and then discuss
✓ ask students to share their experience about the most memorable activity in class for which they felt really excited and motivated?

4.1 Readiness
Individuals learn best when they are ready to learn, and they do not learn well if they see no reason for learning. Getting students ready to learn is usually the instructor's responsibility. If students have a strong purpose, a clear objective, and a definite reason for learning something.

4.2 Exercise
The principle of exercise states that those things most often repeated are best remembered. It is based on drill and practice. The human memory is fallible. The mind can rarely retain, evaluate, and apply new concepts or practices after a single exposure. The instructor must provide opportunities for students to practice

4.3 Effect
The principle of effect is based on the emotional reaction of the student. It states that learning is strengthened when accompanied by a pleasant or satisfying feeling, and that learning is weakened when associated with an unpleasant feeling. Usually it is better to tell students that a problem or maneuver, although difficult, is within their capability to understand or perform. Whatever the learning situation, it should contain elements that affect the students positively and give them a feeling of satisfaction.

4.4 Primacy
For the student, it means that learning must be right. Unteaching is more difficult than teaching. If, for example, a maintenance student learns a faulty technique, the instructor will have a difficult task correcting bad habits.

4.5 Intensity
A dramatic, or exciting learning experience teaches more than a routine or boring experience. The principle of intensity implies that a student will learn more from the real thing than from a substitute. Today, classroom instruction can benefit from a wide variety of instructional aids to improve, motivate learning, and challenge students.

4.6 Recency
The principle of recency states that things most recently learned are best remembered. The instructor repeats, restates, or reemphasizes important points at the end of a lesson to help the student remember them.

Further Reading: Aviation Instructor's Handbook (2008) U.S. Department of Transportation Federal Aviation Administration
https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/aviation_instructors_handbook/media/faa-h-8083-9a.pdf

---

Activity:
- ✓ develop a concept map on laws of learning
- ✓ Design classroom activities that fulfills laws of learning and conduct in classroom

---

Feedback:
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

---

Unit Exercise:
1. Explain laws of learning in detail with examples?
2. It is very important for teachers to fulfil laws of learning during teaching and learning process to ensure students' learning. Discuss.

Summary and transition:
- Over the years, educational psychologists have identified several principles which seem generally applicable to the learning process. They provide additional insight into what makes people learn most effectively.
- Law of readiness explains that Individuals learn best when they are ready to learn, and they do not learn well if they see no reason for learning.
- The principle of exercise states that those things most often repeated are best remembered. It is based on drill and practice.
- The principle of effect is based on the emotional reaction of the student.Learning is strengthened when accompanied by a pleasant or satisfying feeling, and weakened when associated with an unpleasant feeling.
- Law of Primacy means that learning must be right.
- The law of intensity implies thata dramatic, or exciting learning experience teaches more than a routine or boring experience.
- The law of recency states that things most recently learned are best remembered.

Introduction:

Cognitive psychology sees the individual as a processor of information, in much the same way that a computer takes in information and follows a program to produce an output. Cognitive psychology compares the human mind to a computer, suggesting that we too are information processors and that it is possible and desirable to study the internal mental / mediational processes that lie between the stimuli (in our environment) and the response we make.

Introductory Activity: Show a video to the students about the concept of information processing and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives:

After studying this unit, the students will be able to:
- Understand the concept of Information processing and the basic assumptions about it
- Analyze the Computer-mind analogy
- Interpret the information processing system
- Draw and discuss a Stage model of information processing

PK Activity:
- Ask students how you memorize any information in your mind?
- How your computer works to store and retrieve information?

5.1 Basic Assumptions

The information processing approach is based on a number of assumptions, including:

- information made available by the environment is processed by a series of processing systems (e.g. attention, perception, short-term memory);
- these processing systems transform or alter the information in systematic ways;
- the aim of research is to specify the processes and structures that underlie cognitive performance;
- information processing in humans resembles that in computers.

5.2 Computer - Mind Analogy

The development of the computer in the 1950s and 1960s had an important influence on psychology and was, in part, responsible for the cognitive approach becoming the dominant approach in modern psychology (taking over from behaviorism). The computer gave cognitive psychologists a metaphor, or analogy, to which they could compare human mental processing. The use of the computer as a tool for thinking how the human mind handles information is known as the computer analogy. Essentially, a computer codes (i.e. changes) information, stores information, uses information, and produces an output (retrieves info).

The idea of information processing was adopted by cognitive psychologists as a model of how human thought works. For example, the eye receives visual information and codes information into electric neural activity which is fed back to the brain where it is "stored" and "coded". This information is can be used by other parts of the brain relating to mental activities such as memory, perception and attention. The output (i.e. behavior) might be, for example, to read what you can see on a printed page. Hence the information processing approach characterizes thinking as the environment providing input of data, which is then transformed by our senses. The information can be stored, retrieved and transformed using "mental programs", with the results being behavioral responses. Cognitive psychology has influenced and integrated with many other approaches and areas of study to produce, for example, social learning theory, cognitive neuropsychology and artificial intelligence (AI).

5.3 The Information Processing System

Information processing models consist of a series of stages, or boxes, which represent stages of processing. Arrows indicate the flow of information from one stage to the next.

* **Input** processes are concerned with the analysis of the stimuli.

* **Storage** processes cover everything that happens to stimuli internally in the brain and can include coding and manipulation of the stimuli.

* **Output** processes are responsible for preparing an appropriate response to a stimulus.

Further Reading:
McLeod, S. A. (2008). Information processing. Retrieved from
www.simplypsychology.org/information-processing.html

5.4 Stage Model of Information Processing
Sensory memory (STSS)

Sensory memory is affiliated with the transduction of energy (change from one energy from to another). The environment makes available a variety of sources of information (light, sound, smell, heat, cold, etc.), but the brain only understands electrical energy. The body has special sensory receptor cells that transduce (change from one form of energy to another) this external energy to

something the brain can understand. In the process of transduction, a memory is created. This memory is very short (less than 1/2 second for vision; about 3 seconds for hearing).It is absolutely critical that the learner attend to the information at this initial stage in order to transfer it to the next one. There are two major concepts for getting information into STM:First, individuals are more likely to pay attention to a stimulus if it has an **interesting feature**. We are more likely to get an orienting response if this is present.Second,

387
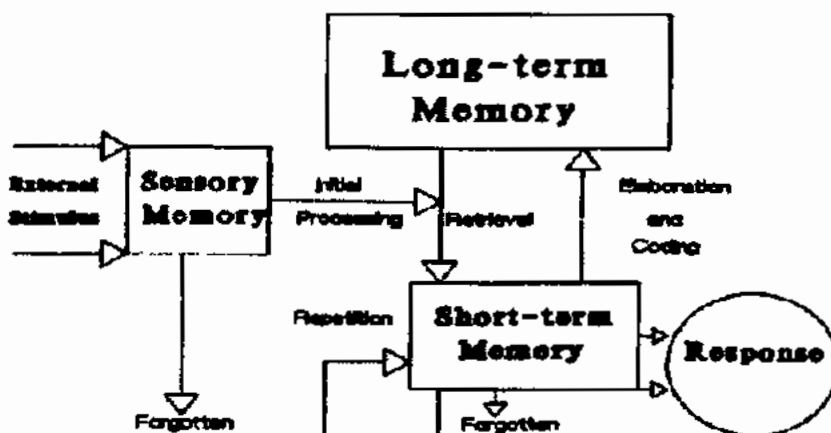
individuals are more likely to pay attention if the stimulus activates a **known pattern**. To the extent we have students call to mind relevant prior learning before we begin our presentations; we can take advantage of this principle.

Short-term memory (STM)

Short-term memory is also called working memory and relates to what we are thinking about at any given moment in time. In Freudian terms, this is conscious memory. It is created by our paying attention to an external stimulus, an internal thought, or both. It will initially last somewhere around 15 to 20 seconds unless it is repeated (called maintenance rehearsal) at which point it may be available for up to 20 minutes. The hypothalamus is a brain structure thought to be involved in this shallow processing of information. The frontal lobes of the cerebral cortex is the structure associated with working memory. For example, you are processing the words you read on the screen in your frontal lobes. However, if I ask, "What is your telephone number?" your brain immediately calls that from long-term memory and replaces what was previously there.

Long-term memory (LTM)

Long-term memory is also called preconscious and unconscious memory in Freudian terms. Preconscious means that the information is relatively easily recalled (although it may take several minutes or even hours) while unconscious refers to data that is not available during normal consciousness. It is preconscious memory that is the focus of cognitive psychology as it relates to long-term memory. The levels-of-processing theory, however, has provided some research that attests to the fact that we "know" more than we can easily recall. The two processes most likely to move information into long-term memory are elaboration and distributed practice

Further Reading: Huitt, W. (2003). The information processing approach to cognition. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved from, http://www.edpsycinteractive.org/topics/cognition/infoproc.html

Activity:
✓ Brainstorm in groups and provide some examples of short term memory, long-term memory and working memory from your daily life.
✓ Design some classroom activities to help processing concepts from short-term memory to long-term memory and conduct in classroom

Feedback:
• Provide immediate feedback after every activity
• Informs the student they did what he or she were supposed to do
• informs the student the accuracy of their performance or response
• Directs students in the right direction to find the correct answer but does not provide the correct answer
• Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
• Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise
1. Describe in detail the concept of Information processing and the basic assumptions about it.
2. Critically analyze the computer-mind analogy with diagram and examples.
3. Information processing models consist of a series of stages, which represent stages of processing. Explain with diagram and examples.
4. Draw a Stage model of information processing and discuss its various components in detail.

Unit 6: Teaching and learning process
      6.1Teaching and learning process Model
      6.2 Context
      6.3 Input
      6.4Classroom Processes
      6.5Output

Introduction

Many researchers have tried to put together classroom- or school-based models that describe the teaching-learning process. A model is a visual aid or picture which highlights the main ideas and variables in a process or a system. Gage & Berliner (1992) state that the use of models as learning aides have two primary benefits. First, models provide "accurate and useful representations of knowledge that is needed when solving problems in some particular domain" (p. 314). Second, a model makes the process of understanding a domain of knowledge easier because it is a visual expression of the topic. Models have been used extensively in educational psychology to help clarify some of the answers researchers have found that might shed light on such questions as, "How do students learn effectively?" Or, "What is happening in this classroom that facilitates learning better than in another classroom?"

Introductory Activity: Show a video to the students about the teaching and learning process and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives:

After studying this unit, the students will be able to:
7. conceptualize teaching and learning process
8. develop a teaching and learning process model
9. explain variables in teaching and learning process model such as **context, input, Classroom processes and output**

PK Activity: Ask students to share their own experiences they got in their classrooms, how teachers teach, students learn and conduction of various activities in classroom? In which situations students feel difficulty to sit and learn and in which situations they feel comfortable and motivated towards learning in classroom? Generate discussion in class on following points.

6.1 Teaching and Learning Process Model

One of the most crucial questions that has always challenged educators and researchers is: why do some students learn more than others? Why is it so that some students learn faster, quicker and remember longer?

The following model is an attempt to consider most of the possible answers. This model is classified in four categories.

Context	All those factors outside of the classroom that might influence teaching and learning such as school characteristics and school processes
Input	Those qualities of teachers and students that they bring with them to the learning
Classroom processes	Teacher and students behaviors in the class as well as some other variables; such as; classroom environment, teacher student relationships, energizing interaction etc...
Output	Measures of students learning taken apart from the normal instructional process

This model shows a relationship among the categories of **Context** (family, home, school, and community environments), **Input** (what students and teachers bring to the classroom process), **Classroom Processes** (what is going on in the classroom), and **Output** (measures of learning done outside of the classroom). These categories appear superimposed in the model since it is proposed they are essentially intertwined in the learning process.
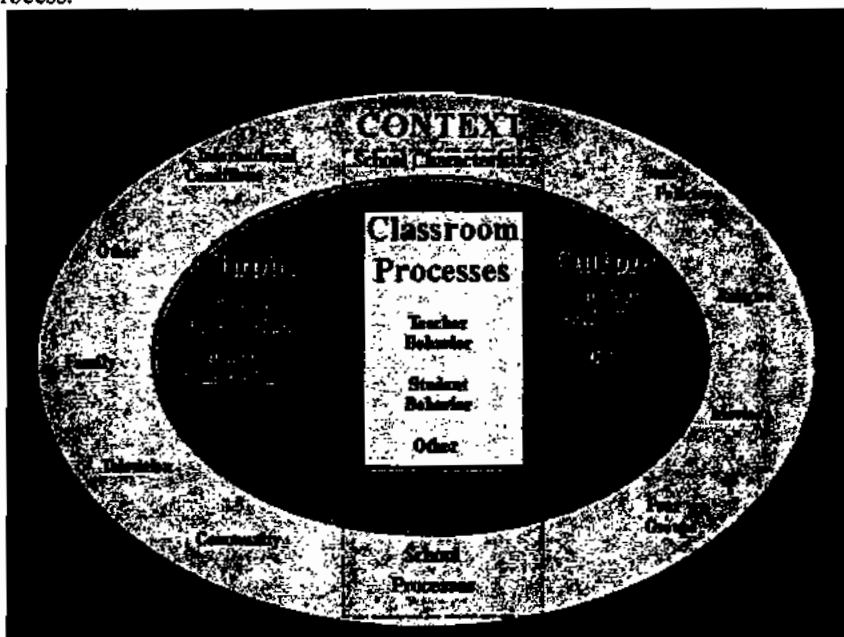
Further Reading: McIlrath, D., & Huitt, W. (1995, December). The teaching-learning process: A discussion of models. *Educational Psychology Interactive.* Valdosta, GA: Valdosta State University. Retrieved from, http://www.edpsycinteractive.org/papers/modeltch.html

Activity:
✓ Think about your classroom and discuss how **context, input, classroom processes and output** effecting your teaching and learning experiences.

Feedback:
• Provide immediate feedback after every activity
• Informs the student they did what he or she were supposed to do
• informs the student the accuracy of their performance or response
• Directs students in the right direction to find the correct answer but does not provide the correct answer

- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
1. Develop a teaching and learning process model and explain it with examples.

Summary and transition:
- One of the most crucial questions that has always challenged educators and researchers is: why do some students learn more than others? Why is it so that some students learn faster, quicker and remember longer?
- Teaching learning process model is an attempt to consider most of the possible answers.
- This model is classified in four categories: **Context, Input, Classroom Processes** and **Output**

Introduction:

General models and families of teaching methods are guides for designing educational activities, environments and experiences. They help to specify methods of teaching and patterns for these methods. Instructional strategies, or teaching methods, depend on a number of factors such as the developmental level of students, goals, intent and objectives of the teacher, content, and environment including time, physical setting and resources. Imagine a course that challenges teachers to meet a number of objectives. A single method cannot meet all of our goals nor can a single method accommodate all learning styles at once. For example, demonstrations or projects are effective for meeting some goals but ineffective for meeting others. So we need a toolbox of methods, not merely a single tool. In the most general terms, there are four or five different models of instructional strategies or teaching methods. Having spent years in schools, you will recognize each and probably have strong preferences for one or two models.

- Didactic- Direct teaching; Verbal and typically in the form of a lecture or presentation.
- Modeling- Direct teaching; Visual and typically in the form of demonstration and practice.
- Managerial- Indirect or Interactive teaching; Facilitation, individualization and group management.
- Dialogic- Indirect Interactive teaching; Socratic Technique of dialogue, questions and thought provocations.

Module Objectives:

After studying this unit, the student will be able to:
1. understand the basic concept of methods and techniques of teaching.
2. distinguish between different methods of teaching (lecture method, classroom method, discussion methods, demonstration method, inquiry, problem solving, discovery method, assignment and project method)
3. apply the different methods and techniques of teaching.

Unit 01: Concept of teaching methods and strategies

      1.1 Andragogy and pedagogy

      1.2 Teacher centered and student centered teaching

      1.3 Matching teaching styles with your students learning styles

Introduction:
A method is a well-defined pattern of procedures within which a variety of the techniques and devices may appear as circumstances may require.

- a way of doing something, especially a systematic way; implies an orderly logical arrangement (usually in steps)
- **Teaching methods** can best be defined as the types of principles and methods used for instruction.
- Ways of presenting instructional materials or conducting instructional activities.
- Teaching methods are best articulated by answering the questions, "What is the purpose of education?" and "What are the best ways of achieving these purposes?"
- There are many types of teaching methods, depending on what information or skill the teacher is trying to convey.
- When a teacher is deciding on their method, they need to be flexible and willing to adjust their style according to their students.
- Student success in the classroom is largely based on effective teaching methods
- The word method is often used very loosely. It has been supposed to involve a body of fixed and stereo-typed modes of procedures each applicable to its appropriate subject as a kind of ritual to be observed by all teachers and in all circumstances.
- A method is not merely a device adopted for communicating certain items of information to students'. but a method must link up the teacher and his pupils into an organic relationship with constant mutual interaction.

Further Reading: Alan S.L. Wong (2013) The Teaching Process. *Teaching Ministry* Retrieved from: http://www.vtaide.com/gleanings/teaching.htm

---

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit Objectives:
After studying this unit students will be able to:
1. understand the concept of teaching methods and strategies
2. differentiate between the concepts of andragogy and pedagogy
3. compare teacher centered and student centered teaching
4. identify various learning styles

PK Activity:
Show that picture and ask participants about their perceptions and experiences related to that picture.

- Relate their experiences with the concept of teaching methods and strategies and generate discussion to find out their current knowledge about these concepts.
- Ask students to recall their learning experience throughout years and analyze the difference in ways of teaching children and adults.

I DONT WANT TO GO TO SCHOOL! I HATE SCHOOL! I'D RATHER DO ANYTHING THAN GO TO SCHOOL!

1.1 Andragogy and pedagogy

Adult learning is a vast area of educational research and probably one of the most complicated. Adults learn differently and have different strategies in learning. Adults Learning Theory and Principles explain in details these strategies and sheds more light on how adults cultivate knowledge.

Talking about adult learning brings us to the concept of Andragogy. According to the article Malcolm Knowles an American practitioner and theorist of adult education, defined andragogy as "the art and science of helping adults learn". Knowles identified the six principles of adult learning as:

- Adults are internally motivated and self-directed
- Adults bring life experiences and knowledge to learning experiences
- Adults are goal oriented
- Adults are relevancy oriented
- Adults are practical
- Adult learners like to be respected

However, with the theory and principles of adult learning in mind, you can facilitate the learning approach of the student to move from novice to more sophisticated learning methods. This facilitates greater integration of knowledge, information and experience; the student learns to distinguish what is important when assessing and working with clients; how to prioritise client needs, goals and caseload; when rules can be put aside and how/when the approach to occupational therapy practice and professional communication emerges from strict modelling of behaviour into a unique therapeutic and professional expression of self. (Fidishun, 2000; Lieb,1991)

Activity
✓ How a teacher can use adult learning principles to facilitate student learning? Generate discussion with students

Pedagogy vs. Andragogy

	Pedagogical	Andragogical
The Learner	• The learner is dependent upon the instructor for all learning • The teacher/instructor assumes full responsibility for what is taught and how it is learned • The teacher/instructor evaluates learning	• The learner is self-directed • The learner is responsible for his/her own learning • Self-evaluation is characteristic of this approach
Role of the Learner's Experience	• The learner comes to the activity with little experience that could be tapped as a resource for learning • The experience of the instructor is most influential	• The learner brings a greater volume and quality of experience • Adults are a rich resource for one another • Different experiences assure diversity in groups of adults • Experience becomes the source of self-identify
Readiness to Learn	• Students are told what they have to learn in order to advance to the next level of mastery	• Any change is likely to trigger a readiness to learn • The need to know in order to perform more effectively in some aspect of one's life is important • Ability to assess gaps between where one is now and where one wants and needs to be
Orientation to Learning	• Learning is a process of acquiring prescribed subject matter • Content units are sequenced according to the logic of the subject matter	• Learners want to perform a task, solve a problem, live in a more satisfying way • Learning must have relevance to real-life tasks • Learning is organized around life/work situations rather than subject matter units
Motivation for Learning	• Primarily motivated by external pressures, competition for grades, and the consequences of failure	• Internal motivators: self-esteem, recognition, better quality of life, self-confidence, self-actualization

Further Reading: Retrieved from:
https://www.cloud.edu/Assets/pdfs/assessment/inst.%20strategy%20_pedagogy%20vs%20andragogy.pdf

1.2 Student Centered vs teacher centered methods

Teacher-Centered	Learner-Centered
Focus is on instructor	Focus is on both students and instructor

Focus is on language forms and structures (what the instructor knows about the language)	Focus is on language use in typical situations (how students will use the language)
Instructor talks; students listen	Instructor models; students interact with instructor and one another
Students work alone	Students work in pairs, in groups, or alone depending on the purpose of the activity
Instructor monitors and corrects every student utterance	Students talk without constant instructor monitoring; instructor provides feedback/correction when questions arise
Instructor answers students' questions about language	Students answer each other's questions, using instructor as an information resource
Instructor chooses topics	Students have some choice of topics
Instructor evaluates student learning	Students evaluate their own learning; instructor also evaluates
Classroom is quiet	Classroom is often noisy and busy

Further Reading: Retrieved from:
http://www.wcedcurriculum.westerncape.gov.za/files/eLearn%20Linked%20Articles/TeacherCentered VsLearnerCenteredParadigms.pdf

1.3 Matching teaching styles with your students learning styles
Learning styles are ways of learning. A preferred learning style is the way in which student learns best, which reflects the relative strength or weaknesses of that student's underling cognitive learning skill.

1.3.1 Learning Styles Types

1.3.2 Visual and Spatial learners:
2 Very good in visual recall
3 Able to remember scenes, objects or faces for many years
4 Like visually presented information such as charts, pictures, images, keywords dislay, memory and concept mapping.

1.3.3 Musical learners:
- Good auditory recall
- Able to rehearse or anticipate situations by hearing them
- Respond well to the variety of sounds

396

- Enjoy sound effects, story telling and music

1.3.4 Kinesthetic learners:
- Can use body in highly differentiated and skilled ways
- Learn best by doing, where physical movement aids memory
- Respond well to interactive exhibits and opportunities to feel, touch and handle, use of computers and making things
- Move during learning activities

1.3.5 Interpersonal learners:
- Able to understand and work with others
- Respond quickly to change in mood
- Enjoy discussion and group work
- Good at giving and receiving feedback

1.3.6 Intrapersonal:
- Self motivated and have a high degree of self knowledge
- Reflective to develop thoughts and express these
- Enjoy spending time alone in researching, thinking and reflecting on the experiences before talking about this to others

1.3.7 Linguistic learners:
- Sensitive to the meaning of words order, sounds, rhythm and inflection and to their capacity to change mood, persuade or convey information.

1.3.7 Mathematical/logical learners:
- problem solver and can construct solutions non-verbally
- Readily see patters and relationships in the world.
- Like information to be sequenced in a logical order and to make strong connection between concepts.
- Respond well to logical progression trough a set of themes or ideas.

1.3.8 Naturalist learners:
- enjoy being outside and notice patterns and rhythms in nature
- have a strong sense that is fair and want to think through the impact of your actions on those around you
- Enjoy spaces that are airy with natural light, and will appreciate the opportunity to spend some time outside the building as part of a visit

Further Reading: Boneva, D., Mihova, E. (2011) Learning Styles and Learning Preferences. Lifelong Learning Program. Retrieved from:
http://dyscovery.research.southwales.ac.uk/media/files/documents/2014-01-16/Module_8.pdf

Activity:
- ✓ Ask students to fill the learning style questionnaire and find out their own learning style. Click on given link to download questionnaire
  http://www.kerstens.org/alicia/planning10/Multiple%20Intelligences%20Inventory.pdf
- ✓ Suggest teaching strategies and classroom activities for each learning style.

Feedback:
- Ask learners to recall the concepts.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. Explain the concept of teaching methods and strategies with examples.
2. What is the difference between teacher centered and student-centered teaching? Explain with examples.
3. Provide a critical comparison of the concepts of andragogy and pedagogy? How andragogy can be applied on the learners of all ages?

Summary and transition:
- A method is a well-defined pattern of procedures within which a variety of the techniques and devices may appear as circumstances may require.
- Learning styles are ways of learning. A preferred learning style is the way in which student learns best, which reflects the relative strength or weaknesses of that student's underling cognitive learning skill.

Unit 02: Lecture method
2.1 Concept of Lecture Method
2.2 Application of Lecture Method
2.3 Advantages and Disadvantages of Lecture Method

Introduction

A lecture is an oral presentation of information by the instructor. It is the method of relaying factual information which includes principles, concepts, ideas and all theoretical knowledge about a given topic. In a lecture the instructor tells, explains, describes or relates whatever information the trainees are required to learn through listening and understanding. It is therefore teacher-centred. The instructor is very active, doing all the talking. Trainees on the other hand are very inactive, doing all the listening. Despite the popularity of lectures, the lack of active involvement of trainees limits its usefulness as a method of instruction. The lecture method of instruction is recommended for students with very little knowledge or limited background knowledge on the topic. It is also useful for presenting an organised body of new information to the learner. To be effective in promoting learning, the lecture must involve some discussions and, question and answer period to allow trainees to be involved actively.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit Objectives:
Students will be able to:
1. understand the basic concept of lecture method
2. identify the advantages and disadvantages of lecture method
3. apply lecture method in teaching.

PK Activity:
✓ What is your concept about teaching methods and strategies?
✓ Recall your previous learning experiences and reflect that what teaching method mostly your teachers used to apply in class.

2. 1 Concept of Lecture Method

The most traditional, long-established method of teaching is lecturing. A lecture is an oral presentation intended present information or teach people about a particular subject. Nowadays this method is universally

used by universities and colleges all over the world. In this method, the instructor talks more or less continuously to the class. The class listens, takes notes of the facts and ideas worth remembering, thinks over them later; but the class does not converse with the instructor. G. J. Umstattd described this type of lecturing as an "uninterrupted verbal presentation by an instructor". In the less formal lectures, the class is invited to ask a few questions but these are largely for the sake of clarification, not of discussion. The essence of this kind of teaching and its purpose are for a steady transmission of information from the teacher to the students. It is oldest teaching method given by philosophy of idealism. As used in education, the lecture method refers to the teaching procedure involved in clarification or explanation of the students of some major idea. This method lays emphasis on the penetration of contents.

It gives students the information not elsewhere available. This is especially true when the lectures are based on the unpublished research projects and on the crystallized wisdom out of the life-long academic pursuits of the instructor. It summarizes, synthesizes and organizes for the students the content of numerous articles and books, which represents years of laborious work on the part of the instructor. It points out relationships and salient points that even abler students might not sense or not fully comprehend until amplified by the instructor. Thus, the student's learning progress will be accelerated and their level of understanding will be elevated. It widens the intellectual horizons of the student, making it possible for the learner to gradually move toward acquisition of self-discovery and self-understanding.

2.2 Application of Lecture Method

- Oral methods of giving info, generate understanding and creating interest
- Without interest, attention is lost → little understanding
- Without information there is nothing to be understood
- The task of lecturing:
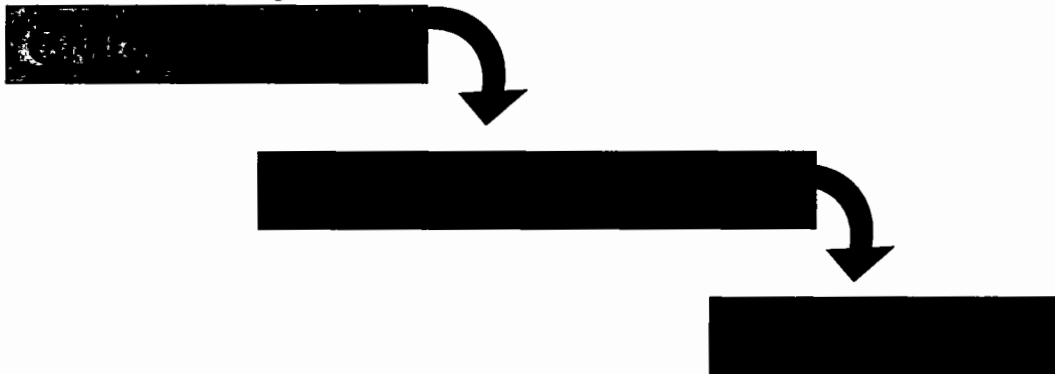
- Review previously learned material
- State objectives for the lesson
- Present new material
- Guide practice with corrective feedback
- Assign independent practice with corrective feedback
- Review periodically with corrective feedback if necessary

2.3 Advantages of Lecture Method

- The teacher controls the topic, aims, content, organization, sequence, and rate. Emphasis can be placed where the teacher desires.
- The lecture can be used to motivate and increase interest, to clarify and explain, to
- expand and bring in information not available to the students, and to review.
- The number of students listening to the lecturer isn't important.
- Students can interrupt for clarification or more detail.

399

- The lecture can be taped, filmed, or printed for future use.
- Other media and demonstrations can be easily combined with the lecture.
- The lecture can be easily revised and updated.

2.4 Disadvantages of Lecture Method

- Student involvement is limited to the teacher
- Depends in part to rote learning (repetition from memory)
- Some of the students may already know the content of the lecture while some may not be ready for the lecture.
- It is difficult to maintain student interest and attention for a full hour of lecture.
- The communication is mostly one-way communication from the teacher to her students. Usually there is little student participation. The students who do participate are few in number and tend to be the same students each class.
- Most students have not learned to take good notes.
- Lecture information is forgotten quickly, during and after the lecture.
- There is no immediate and direct check of whether learning has taken place.
- Lectures are not effective when teaching thinking objectives.

Further Readings: The Lecture Method (2014) Center for Instructional Development and Distance Education
http://www.uq.edu.au/teach/teachingpracticeinventory/documents/Lecture-Method-CIDDE.pdf

Activity
✓ How can we improve the quality of our lectures?
✓ How to encourage more active participation of students?
✓ Obseve a lecture of any class and write your reflectons on it.
✓ Design a lecture on any topic and deliver in your class.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit exercise:
2. What are the major Considerations for lecture preparation?
3. What are the basic skills of lecturing?
4. Identify the advantages and disadvantages of lecture method.

Summary and transition:
- A lecture is an oral presentation of information by the instructor.
- It is the method of relaying factual information which includes principles, concepts, ideas and all theoretical knowledge about a given topic.
- Nowadays this method is universally used by universities and colleges all over the world.

- It gives students the information not elsewhere available. This is especially true when the lectures are based on the unpublished research projects and on the crystallized wisdom out of the life-long academic pursuits of the instructor
- It widens the intellectual horizons of the student, making it possible for the learner to gradually move toward acquisition of self-discovery and self-understanding.

Unit 03: Demonstration method
4.1 Concept of Demonstration Method
4.2 Steps needed to conduct a demonstration lesson
4.3 Advantages of Demonstration Method
4.4 Disadvantages of Demonstration Method

Introduction
"The most effective way to teach an occupational skill is to demonstrate it... one of the two most essential teaching skills is the ability to demonstrate; the other is the ability to explain. Both are vital to the success of either an operation lesson or an information lesson". Demonstration means any planned performance of an occupation skill, scientific principle or experiment.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit Objectives:
Students will be able to:
7. understand the basic concept of demonstration method
8. identify the advantages and disadvantages of demonstration method
9. apply demonstration method in teaching.

PK Activity:
✓ What is your concept about teaching methods and strategies?
✓ Recall your previous learning experiences and reflect that what teaching method mostly your teachers used to apply in science class.

3.1 Concept of Demonstration Method

The dictionary meaning of the word "demonstration" is the outward showing of a feeling etc.; a description and explanation by experiment; so also logically to Prove the truth; or a practical display of a piece of equipment to snow its display of a piece of equipment to show its capabilities . In short it is a proof provided by logic, argument etc. To define "it is a physical display of the form, outline or a substance of object or events for the purpose of increasing knowledge of such objects or events. Demonstration involves "showing what or showing how".

Demonstration method is a teaching technique that combines oral explanation with "doing" to communicate processes, concepts, and facts. It is particularly effective in teaching a skill that can be observed. Demonstrations Method are often used during workshops. The audience is passive during the method demonstration but during a workshop it is actively involved in practicing the skill. A demonstration is a teaching method used with both large and small groups. Demonstrations become more effective when verbalization accompanies them. For example, in a half demonstration-half lecture, an explanation accompanies the actions performed. It is a generally accepted learning theory that the greater the degree of active participation and sensory involvement by the learner, the more effective learning will be.

3.2 Steps needed to conduct a demonstration lesson

Teacher preparation

401

- Rehearse your presentation in advance of the lesson.
- Anticipate any difficult steps, possible interruptions e.t.c.
- Obtain all materials, tools, equipment, visual and teaching aids in advance and check their useful condition.
- Have all materials within reach and conveniently arranged.
- Time the demonstration NOT to exceed 15 minutes.
- Remove all extraneous materials; check lighting, visibility, student grouping, and proximity to electric, gas and water outlets.
- Plan to use a skill or method to advantage; work from simple to complex, one step at a time.

Planning

- Subject matter.
- Questions to be asked.
- Apparatus required for the experiment

Introduction of the lesson:

- Lesson should start with proper motivation of the students.
- It is always considered more useful to introduce the lesson in a problematic way which would make the student's realize the importance of the topic.
- Lesson can be start by telling some personal experience or incident of a simple and interesting experiment.
- A good experiment carefully demonstrated is likely to leave an everlasting impression

3. Presentation:

- present subject matter in an interesting manner.
- teacher should make the lesson as much as broad based as possible.
- Teacher can use examples and illustrations for allied branches of science like history, geography etc. Constant questions and answer should form a part of every demonstration
- Questions and cross question are essential for properly illuminating the principles discussed.
- Question should be arranged in such a way that their answers may form a complete teaching unit
- Make sure all students can see and hear the lesson.
- Be enthusiastic, professional, effective but not dramatic.
- Relax; use any mishaps or humour to YOUR advantage.
- Observe all safety rules and procedures.
- Keep eye-contact with the class; ask and encourage class questions.
- Explain WHY and HOW: use the techniques of SHOW and TELL.
- Use a medial summary to strengthen your explanation.

4. Performance of experiment:

- A good observer has been described as a person who has learnt the use the senses of touch, sight, smell in an intelligent way.
- Through this method we want children to observe what happens in a experiment and to state it carefully

5. Black Board Summary:

- A summary of important results and principles should be written in the Blackboard.
- Use of blackboard should be also frequently used to draw sketches and diagrams. The entire procedure should be displayed to the students after the demonstration.

3.3 Advantages of Demonstration Method

- It is an economical method as compared to a purely student centered method
- It is a psychological method and students take active interest in the teaching learning process
- It leads the students from concrete to abstract situations
- It is suitable method if the apparatus to be handled is costly and sensitive. Such apparatus is likely to be handled and damaged by the students.
- This method is safe if the experiment is dangerous.
- In comparison to Heuristic, Project method it is time saving but purely Lecture method is too lengthy
- It can be successfully used for all types of students
- It improves the observational and reasoning sills of the students

3.4 Disadvantages of Demonstration Method

- It provides no scope for "Learning by Doing" for the Students as students are only observing the Teacher performing.
- Since Teacher performs the experiment at his/ her own pace many students may not be able to comprehend the concept being clarified.
- Since this method is not child centered it makes no provision for individual differences, all types of students including slow learners and genius have to proceed with the same speed.
- It fails to develop laboratory skills in the students.
- It fails to impart training in scientific attitude. In this method students many a times fail to observe many finer details of the apparatus used because they observe it from a distance.

Further Reading: Trainer's Handbook - A 14 days Teaching Methodology Course (GTZ, 190 p.) Handout 09. Types of Teaching Methods. Demonstration Method Retrieved from: http://www.nzdl.org/gsdlmod?e=d-00000-00---off-0fnl2%2E2--00-0----0-10-0---0---0direct-10---4------0-11--11-en-50---20-about---00-0-1-00-0--4----0-0-11-10-0utfZz-8-00&cl=CL2.6&d=HASH931fe16befd87926191fd4.7.9.1&gt=1

Activity
✓ How can we improve the quality of our Demonstration?
✓ How you will use Demonstration method with large group?
✓ Obseve a demonstration lesson of any class and write your reflectons on it.
✓ Design a demonstration lesson on any topic and deliver in your class.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit exercise
1. What are the requirements of good demonstration?
2. What are the major considerations for demonstration preparation?
3. Identify the advantages and disadvantages of demonstration method.

Unit 04 Discussion method
4.16 Concept of Discussion Method
4.17 Types of Discussion Method
4.18 Lesson development
4.19 Advantages of Discussion Method
4.20 Disadvantages of Discussion Method

Introduction

Discussion involves two-way communication between participants. In the classroom situation an instructor and trainees all participate in discussion. During discussion, the instructor spends some time listening while the trainees spend sometimes talking. The discussion is, therefore, a more active learning experience for the trainees than the lecture. A discussion is the means by which people share experiences, ideas and attitudes. As it helps to foster trainees involvement in what they are learning, it may contribute to desired attitudinal changes. Discussion may be used in the classroom for the purpose of lesson development, making trainees apply what they have learnt or to monitor trainees learning by way of feedback.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit objectives:
Students will be able to:
18. understand the basic concept of Discussion Method
19. identify the advantages and disadvantages of Discussion Method
20. apply Discussion Method in teaching.

PK Activity:
✓ Recall your previous learning experiences and reflect that have you ever learn any concept through discussion with teacher or with your group?

4.1 Concept of Discussion Method

The discussion method owes its origin again to the Greek philosopher-educators, particularly Plato, who rebelled against the authoritarian type of lecturing system of the Sophists. This teaching device is basic to the democratic process and it involves an entire class in an extended interchange of ideas between the teacher and the learners and concurrently among the fellow-learners. Although the members in the class approach the discussion topic with many and varying points of view, the group leader, i.e. the instructor will tend to focus the discussion in the direction most conducive to effective and purposeful learning. The growing emphasis on critical thinking and problem-solving in academic instruction accounts in part for the current increased attention to the discussion method as a medium of instruction.

4.2 Types of Discussion Method

Panel: In a panel discussion, a small group of individuals (from three to five) who are knowledgeable about a particular subject discuss the topic among themselves in front of an audience. Panel participants make no formal presentations; they exchange ideas through conversation.

Dialogue: This method is very similar to a panel discussion, but only two individuals take part in discussing the subject in front of an audience.

Symposium: In a symposium, a small number of speakers who are knowledgeable about a particular subject make short presentations in succession. These presentations usually range from five to fifteen minutes each.

Open forum: Members of the audience are allowed to participate at any time during the meeting.

Panel-forum: Members of an audience hear a panel discussion and are then allowed to ask questions or to comment on the subject under discussion.

Symposium-forum: Members of the audience hear presentations by invited speakers and are then allowed to question, discuss, or comment.

Dialogue-forum: Members of the audience are allowed to question, discuss, or comment after the dialogue.

Lecture-forum: After a formal presentation by a knowledgeable speaker, audience members are given the opportunity to question, comment, seek clarification, or discuss the information presented.

Colloquium: This method combines a panel discussion with a forum. During the course of a panel discussion, audience members may be invited to comment or ask questions if panel members or the chair perceive a need to clarify points, avoid neglecting an issue, or assure that a misperception is not allowed to stand.

Buzz Session: The audience is divided into groups of six to eight persons for discussion of relevant questions posed by the leader. One individual from each group may be asked to summarize the group's discussion and report to the entire audience.

Audience Reaction Team: Three to five members of the audience are pre-selected to listen to a presentation and respond by offering a brief summary and interpretation of the information presented. This discussion method can be used effectively in large group settings and when time is limited.

Question Period: Members of the audience are provided an opportunity to ask questions of program participants after their formal presentations have been completed. Usually, a time limit is set for each question and for the entire question-and-answer period.

Brainstorming: Members of the audience are encouraged to participate by sharing their ideas or suggestions for solving a problem. No discussion of each point is allowed until all ideas have been expressed. Since the intent of this discussion method is to generate a wide range of ideas, no contributor is allowed to defend the information presented. The atmosphere should be open and encouraging.

Discussion Group: A group of people meet informally to discuss a topic of mutual concern.

Seminar: A group of people who are studying a specific subject meet for a discussion led by a recognized authority.

Conference: Large or small groups of people having similar interests meet to hear formal presentations to the entire group; they also meet in smaller groups to discuss specific aspects of the conference's general topic.

4.3 Lesson development
In areas in which trainees already have some knowledge or experience, discussion may be used to develop the main points to be covered in a lesson. For example, in safety training many of the procedures and

405

behaviour that should be observed can be established through discussion with trainees. Trainees can draw on their experience of working in workshops contract sites to contribute to the discussion. In discussing some issues, differences of opinion arise. The discussion can help to clarify the different points of view and may assist each trainee to define his or her own opinion. Used in this way, discussion may be more effective in motivating trainees than lectures. Trainees can see that some importance is attached to their contributions.

Whether the discussion is instructor led or takes place in groups it must be guided by the instructor. It must be focused on the objectives of the lesson: it is the instructors responsibility to see that the objectives are met. If it is not properly guided, a discussion can degenerate into a consideration of inappropriate or unimportant topics adding confusion rather than clarification to the lesson.

4.4 Advantages of Discussion Method
- It promotes interest by giving the students a share in the responsibility for the course and in search for knowledge. This compels the students to be active learners, and is quite contrary to the lecturing method.
- It motivates the learners by keeping the work within their intellectual bounds and by allying it with their aptitude.
- It enables the instructor to constantly appraise the students' understanding of the issues under discussion, as he leads the class into the higher levels of the course.
- It sharpens the students' ideas and concepts by forcing them to express them in their own words. This facilitates intellectual comprehension and application of new knowledge to life-situations. Integration of learning with experience will be brought about.
- It permits the students to challenge statements with which they disagree or which they misunderstand, thereby facilitating the process of self-discovery and self-understanding
- It develops in the students the skills essential to effective group discussion and verbal communication.
- The discussion method forces the students out of their classroom lethargy, so that every learner will react either in support or in opposition to the issue under discussion.
- Each student will learn to feel free to express his opinions, to argue with mutual respect and to defend his own stand in the light of logic and rationality.
- This method is able to achieve more than the lecturing method in terms of the objectives of a college general education.
- It develops facility in oral expression, critical and creative thinking, and intellectual and imaginative problem-solving ability.
- The discussion method sustains and strengthens most of the elements essential for productive learning.
- The provision of feedback and class participation heightens the learner's motivation, facilitates the intellectual grasp of abstract concepts and the learning of problem-solving skills.

4.5 Disadvantages of Discussion Method
- It requires knowledge and skill of group dynamics and group handling in order to produce effective, orderly discussion. This skill takes time and practice to develop, and not every individual can become a good discussion leader even given time and practice.
- It makes more demands on the instructor as a group leader than as a lecturer.
- In an actual discussion situation, any drawbacks is likely to occur in varying degrees and in varying combination; the efficacy of the discussion method as a teaching tool will accordingly be adversely affected. If, for example, a discussion topic is poorly chosen, that is, it is not related to the discussants' background, experience and interest and it itself is not controversial enough to evoke arguments from various angles, the discussion period will likely be characterized by a low level of intellectual exchange among the discussants, and interspersed with embarrassing pauses and silences.
- In case the instructor is an inefficient discussion leader, unable to direct and control the group, the discussion will probably end up in a disorderly, chaotic battle of verbal comments, adding more confusion to the students than before the discussion.

Further Reading: William M. Welty, Discussion Method Teaching: A Practical Guide. Retrieved from: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1182&context=podimproveacad

Activity
- ✓ How can we improve the quality of our discussion?
- ✓ How you will use discussion method with large group?
- ✓ Obseve a discussion sesson in any class and write your reflectons on it.
- ✓ Design a discussion session on any topic and conduct in your class.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. What are the requirements to conduct effective discussion?
2. Explain different types of discussion with examples?
3. Identify major advantages and disadvantages of discussion method.

Summary and transition:
- The discussion method owes its origin again to the Greek philosopher-educators, particularly Plato, who rebelled against the authoritarian type of lecturing system.
- This teaching device is basic to the democratic process and it involves an entire class in an extended interchange of ideas between the teacher and the learners and concurrently among the fellow-learners.
- In areas in which trainees already have some knowledge or experience, discussion may be used to develop the main points to be covered in a lesson
- The provision of feedback and class participation heightens the learner's motivation, facilitates the intellectual grasp of abstract concepts and the learning of problem-solving skills
- It requires knowledge and skill of group dynamics and group handling in order to produce effective, orderly discussion. This skill takes time and practice to develop, and not every individual can become a good discussion leader even given time and practice.

Unit 05 Problem solving
5.1 Concept of problem solving method
5.2 Problem Solving Cycle
5.3 Techniques for Error Free Problem Solving
5.4 Types of Problems

Introduction
Problem solving is a basic skill needed by today's learners. Guided by recent research in problem solving, changing professional standards, new workplace demands, and recent changes in learning theory, educators and trainers are revising curricula to include integrated learning environments which encourage learners to use higher order thinking skills, and in particular, problem solving skills. As education has come under criticism from many sectors, educators have looked for ways to reform teaching, learning, and the curriculum. Many have argued that the divorce of content from application has adversely affected our educational system (Hiebert, 1996). Learners often learn facts and rote procedures with few ties to the context and application of knowledge. Problem solving has become the means to rejoin content and

application in a learning environment for basic skills as well as their application in various contexts. Today there is a strong movement in education to incorporate problem solving as a key component of the curriculum.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit objectives:
After studying this unit students will be able to:
- 9   Understand the concept of problem solving method
- 10 Explain Problem Solving Cycle
- 11 Apply techniques for error free problem solving
- 12 Identify types of problems

PK Activity:
- ✓   Recall your previous learning experiences and reflect that how your teachers used to teach you in mathematics class?

5.1 Concept of problem solving method

Problem-Solving Process is an easy approach to dealing with issues and problems that face students. It is a simple, systematic way to approach a problem with clearly defined steps so that an individual or team doesn't get bogged down in, "What do we do next?" Problem solving is a powerful human activity. Computers are useful tools in problem solving, but it is the human who actually solves the problem. It is impossible to teach specific facts that will always lead to a solution. The ability to solve problem comes from doing it.

Many things must pull together to solve a problem. Problem solving is a combination of experience, knowledge, process, and art. Process is a series of logical steps that when followed produce an optimal solution, given time and resources as two constraints. A problem is a situation, quantitative or otherwise, that confronts an individual or group of individuals, that requires resolution, and for which the individual sees no apparent path to the solution.

Problem solving is a process, an activity whereby a best value is determined for an unknown, subject to a specific set of conditions. It is a means by which an individual uses previously acquired knowledge, skills and understanding to satisfy the demands of an unfamiliar situation. Problem solving is a tool, a skill and a process. It is a tool because it can help you solve an immediate problem or to achieve a goal. It is a skill because once you have learnt it you can use it repeatedly, like the ability to ride a bicycle, add numbers or speak a language. It is also a process because it involves taking a number of steps.

5.2 Problem Solving Cycle
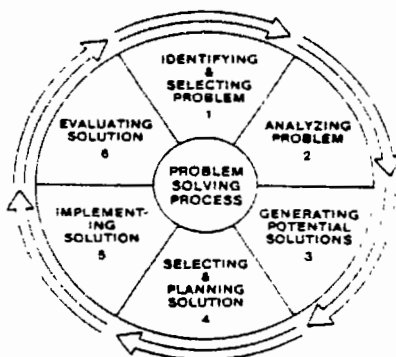
5.2.1 Problem Definition

The normal process for solving a problem will initially involve defining the problem you want to solve. You need to decide what you want achieve and write it down. Often people keep the problem in their head as a vague idea and can so often get lost in what they are trying to solve that no solution seems to fit. Merely writing down the problem forces you to think about what you are actually trying to solve and how much you want to achieve. The first part of the process not only involves writing down the problem to solve, but also checking that you are answering the right problem. It is a check-step to ensure that you do not answer a side issue or only solve the part of the problem that is most easy to solve. People often use the most immediate solution to the first problem definition that they find without spending time checking the problem is the right one to answer.

5.2.2 Problem Analysis

The next step in the process is often to check
- where we are,
- what is the current situation
- what is involved in making it a problem.

For example, what are the benefits of the current product/service/process? And why did we decide to make it like that? Understanding where the problem is coming from, how it fits in with current developments and what the current environment is, is crucial when working out whether a solution will actually work or not. Similarly you must have a set of criteria by which to evaluate any new solutions or you will not know whether the idea is workable or not. This section of the problem solving process ensures that time is spent in stepping back and assessing the current situation and what actually needs to be changed. After this investigation, it is often good to go back one step to reconfirm that your problem definition is still valid. Frequently after the investigation people discover that the problem they really want to answer is very different from their original interpretation of it.

5.2.3 Generating possible Solutions

When you have discovered the real problem that you want to solve and have investigated the climate into which the solution must fit, the next stage is to generate a number of possible solutions. At this stage you should concentrate on generating many solutions and should not evaluate them at all. Very often an idea, which would have been discarded immediately, when evaluated properly, can be developed into a superb solution. At this stage, you should not pre-judge any potential solutions but should treat each idea as a new idea in its own right and worthy of consideration

5.2.4 Analyzing the Solutions

This section of the problem solving process is where you investigate the various factors about each of the potential solutions. You note down the good and bad points and other things which are relevant to each solution. Even at this stage you are not evaluating the solution because if you do so then you could decide not to write down the valid good points about it because overall you think it will not work. However you might discover that by writing down its advantages that it has a totally unique advantage. Only by discovering this might you choose to put the effort in to develop the idea so that it will work.

5.2.5 Selecting the best Solution

This is the section where you look through the various influencing factors for each possible solution and decide which solutions to keep and which to disregard. You look at the solution as a whole and use your judgment as to whether to use the solution or not. In Innovation Toolbox, you can vote using either a Yes/No/Interesting process or on a sliding scale depending on how good the idea is. Sometimes pure facts and figures dictate which ideas will work and which will not. In other situations, it will be purely feelings and intuition that decides. Remember that intuition is really a lifetimes experience and judgment compressed into a single decision. By voting for the solutions you will end up with a shortlist of potential solutions. You may want to increase the depth in the analysis of each idea and vote again on that shortlist to further refine your shortlist. You will then end up with one, many or no viable solutions. In the case where you have no solutions that work, you will need to repeat the generation of solutions section to discover more potential

solutions. Alternatively you might consider re-evaluating the problem again as sometimes you may not find a solution because the problem definition is not well defined or self-contradictory.

5.6.6 Planning the next course of action (Next Steps)
This section of the process is where you write down what you are going to do next. Now that you have a potential solution or solutions you need to decide how you will make the solution happen.
This will involve people doing various things at various times in the future and then confirming that they have been carried out as planned. This stage ensures that the valuable thinking that has gone into solving the problem becomes reality. This series of Next Steps is the logical step to physically solving the problem.

5.2.7 Implement a possible solution
Once you have selected a possible solution you are ready to put it into action. You will need to have energy and motivation to do this because implementing the solution may take some time and effort. (If the solution had been easy to find and do, you would have probably already done it.) You can prepare yourself to implement the solution by planning when and how you will do it, whether you talk with others about it, and what rewards you will give yourself when you have done it.

5.2.8 Evaluate
Just because you have worked your way through the problem solving process it does not mean that, by implementing the possible solution, you automatically solve your problem. So evaluating the effectiveness of your solution is very important. You can ask yourself (and others) :
- 'How effective was that solution?'
- 'Did it achieve what I wanted?'
- What consequences did it have on my situation?'

If the solution was successful in helping you solve your problem and reach your goal, then you know that you have effectively solved your problem. If you feel dissatisfied with the result, then you can begin the steps again. Viewing problem solving as a cycle may help you recognize that problem solving is a way of searching for a solution which will lead to different possible solutions, which you can evaluate. If you have solved the problem you have found an effective solution. If you judge the problem has not been solved you can look for, and try, alternative possibilities by beginning the problem solving cycle again.

5.3 Techniques for Error Free Problem Solving
- Always draw a picture of the physical situation, if possible.
- State any assumptions made.
- Indicate all given properties on the diagram with their units.
- Label unknown quantities with a question mark.
- From the text, write the main equation which contains the unknown quantity.

5.3.1 Skills used in Implementing Problem Solving Strategies
Analysis
Use logic to:
- Identify the system to be analyzed
- Identify the objective Identify relationships
- Divide the system into parts

Synthesis
Use creativity to:
- Develop ideas via brainstorming
- Evaluate the ideas by analysis when enough ideas have been generated

Decision Making
Use logic to
- compare the various ideas and
- select the "best" one(s)

Generalization
- Going from the specific to the broad use abstraction to:
- Aid in analysis, synthesis, and decision making

5.5 Types of Problems
- Research Problems
  - A hypothesis be proven or disproved
  - Example; CFC may destroy the earth's ozone layer is a hypothesis. Design an experiment that either proves or disproves the hypothesis
- Knowledge Problems
  - When a person encounters a situation that he doesn't understand
  - Example; A chemical engineer noticed that the chemical plant produces more product when it rains. Further study showed that heat exchanger cooled by rain increasing product
- Troubleshooting Problems
  - When equipment or software behaves in unexpected or improper ways
  - Example: During vibration test of an aluminum beam, the amplitude of the response is higher at all exciting frequencies
  - Troubleshooting shows that 60 cps of AC current was close to the natural frequency of the beam. e.g. an electronic amplifier has a loud "hum" when it is in a room with fluorescent lights.
- Mathematics Problems
  - Describe physical phenomena with mathematical models
  - Engineers can unleash the extraordinary power of mathematics, with the rigorously proven theorems and algorithms
  - Example; Isaac Newton's sine square law can be applied to hypersonic flow e.g. find x such that $4x + 5 = 0$.
- Resource Problems
  - There is never enough time, money, or equipment to accomplish the task
  - Engineers who can get the job done in spite of resource limitations are highly prized and awarded e.g. how will we get the money to build our new factory?
- Social Problems
  - For example, if a factory is relocated to where there is shortage of skilled worker, engineers should set up training program for employees e.g. how can we improve education?
9. Design Problems
  - Require creativity, teamwork, and broad knowledge
  - Example; design a new car. Economy car? SUV?
  - Design goal and parameters

Further Reading: Problem-Solving Cycle Activity. Education for the Future, Chico, CA (http://eff.csuchico.edu). Retrieved from:
http://www.nesacenter.org/uploaded/conferences/flc/2011/handouts/bernhardt/activity_p-solve_cycle.pdf

---

Activity
- ✓ Obseve a lesson of any class based on problem solving method and write your reflectons on it.
- ✓ Design a leson according to problem solving method on any topic and deliver in your class.
- ✓ Design some activites keeping in view various types of problems
- ✓ How you will use with small children? Design some activites and examples

---

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response

- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise
- **Case:** "In one of the class of adult literacy program the students were arguing because some students were leaving the class early because of some unavoidable reasons. The class was divided into two groups—those who sided with the students who were leaving early and those who felt it was unacceptable to leave class early. The teacher talked with them about how this practice would be unacceptable and tried to establish an open environment where everyone could discuss issues and problems. This problem had persisted for several days and there seemed to be no solution to the problem. *Solve this problem by using the problem-solving cycle.*
- Identify major advantages and disadvantages of project method.

Summary and transition:
10 Problem solving has become the means to rejoin content and application in a learning environment for basic skills as well as their application in various contexts.
11 Today there is a strong movement in education to incorporate problem solving as a key component of the curriculum.
12 Problem solving is a process, an activity whereby a best value is determined for an unknown, subject to a specific set of conditions. It is a means by which an individual uses previously acquired knowledge, skills and understanding to satisfy the demands of an unfamiliar situation
13 Problem solving cycle involved: defining the problem, analyzing a problem, generating the best solution, analyzing the solutions, selecting the best solution, Planning the next course of action (Next Steps), implementing the solution and evaluation

Unit 06 Use of ICT/Computer Assisted Instruction
6.1 Concept of Computer-assisted instruction
6.2 History of CAI
6.3 Common Categories of CAI
6.4 Advantages of CAI
6.5 Disadvantages of CAI

Introduction
Computer-based education (CBE) and computer-based instruction (CBI) refer to virtually any kind of computer use in educational settings, including drill and practice, tutorials, simulations, instructional management, supplementary exercises, programming, database development, writing using word processors, and other applications. These terms may refer either to stand-alone computer learning activities or to computer activities which reinforce material introduced and taught by teachers.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit objectives:
After studying this unit, the students will be able to:
14 Understand the concept of Computer-assisted instruction
15 Describe the history of CAI
16 Differentiate the common Categories of CAI

17 Identify the advantages and disadvantages of CAI method.

PK Activity:
- Ask your students which one of you are fond of playing video games? Have you ever experienced any educational games? What you have learned from these games? Discuss with class

6.1 Concept of Computer-assisted instruction

Computer based instruction (CBI) is defined as the use of the computer in the delivery of instruction. Other similar terms include: computer based training (CBT), computer assisted instruction (CAI), and computer assisted learning (CAL).

Computer-assisted instruction (CAI) is a narrower term and most often refers to drill and-practice, tutorial, or simulation activities offered either by themselves or as supplements to traditional, teacher directed instruction. Computer-managed instruction (CMI) can refer either to the use of computers by school staff to organize student data and make instructional decisions or to activities in which the computer evaluates students' test performance, guides them to appropriate instructional resources, and keeps records of their progress. Computer-enriched instruction (CEI) is defined as learning activities in which computers (1) generate data at the students' request to illustrate relationships in models of social or physical reality, (2) execute programs developed by the students, or (3) provide general enrichment in relatively unstructured exercises designed to stimulate and motivate students.

Further Readings:
- ✓ Kathleen Cotton, Computer-Assisted Instruction. Retrieved from:
  http://educationnorthwest.org/sites/default/files/Computer-AssistedInstruction.pdf
- ✓ Chapter 2 Computer Assisted Instruction and Learning issues. Retrieved from:
  http://www.computing.dcu.ie/~mward/mthesis/chapter2.pdf

6.2 History of CAI

The early CAI programs were rudimentary by today's standards, with mainly text-based interfaces. Bitzer was one of the first to realise the importance of graphics and sound in the teaching process. Initially, CAI programs simply tried to teach a particular topic without a basis on any particular educational philosophy. The TICCIT (Time-Shared Interactive Computer Controlled Information Television - (Merrill, 1983;1988)) at the Brigham Young University was based on a specific instructional framework that dictated the actual hardware. Logo project (Papert, 1980; 1993) was probably the first CAL system that was based on a specific learning approach (the experimental, discovery learning approach).

CBI is the oldest form of computer use in education; when most people think of computer applications in education, they think of CBI first. CAL started in the 1950s and 1960s, mainly in the USA. Pioneers such as Suppes (Stanford University), Kemeny and Kurtz (BASIC, 1960s (Kemeny and Kurtz, 1968, 1985)) and Bitzer (PLATO, University of Illinois (Hart, 1981, 1995)) were among the first to use a computer as part of the learning process.

6.3 Common Categories of CAI
6.3.1 Drill and Practice

Exercises designed to increase fluency in a new skill or body of knowledge or to refresh an existing skill or body of knowledge. This approach assumes that the learners have previously been introduced to the content. Traditionally associated with basic skills in topics such as:
- Mathematics
- Language arts
- Terminology

Good programs provide user control, give feedback and reinforcement, and help learners master skill Good for basic skills/knowledge where rapid student response is desired. Usually best to use in a series of brief sessions. Mainly intended for use by individuals and should be geared to a level appropriate for the students.

6.3.2 Tutorial

Tutorial is a form of CBI in which the computer assumes the role of a tutor introducing content, providing practice, and assessing learning. Tutorials are used to introduce new content to learners in much the same manner that a human teacher might. Because tutorials present content to students, they can be used in any area of the curriculum for:

- remediation when learners lack necessary background knowledge.
- enrichment when learners wish to go beyond the basics.
- introduction of content to all learners (freeing the instructor to do other things).

Tutorials are good for verbal and conceptual learning. It may require significant investment of students' time and can be effectively used by individuals or groups of 2-3 students. It should be followed by opportunities for student application of knowledge.

6.3.3 Simulation

Simulation is a form of CAI that provides a simplified representation of a real situation, phenomenon, or process. It provides the opportunity for students to apply knowledge in a realistic format but without the time, expense, or risk associated with the real thing. It is one of the best ways to use CBI in the sciences and other subject areas; simulation makes good use of what the computer does well. Simulations can mimic physical objects or phenomena, processes, procedures, and situations. It can be best used for application of knowledge, problem solving, and thinking skills. Time involvement may be brief or extended depending on the simulation. It is good for small groups of students, although can be used by individuals but often requires guidance and follow-up for effective use.

6.3.4 Instructional Game

Instructional Game is usually another type of CBI (e.g., drill and practice or simulation) modified to include gaming elements. This method generally features:

- an end goal and rules of play
- sensory appeal
- motivational elements (e.g., competition, cooperation, challenge, fantasy).

Examples of this type of CBI are found throughout education. Usually, they are aimed at younger learners such as those in the elementary grades. Games can substitute for worksheets and exercises, as a reward, or, in some cases, to foster cooperation.

6.3.5 Problem-Solving

Problem-Solving is a CBI program that is designed to foster thinking or problem solving skills, but does not fit into one of the other categories. Usually focuses on a specific type of problem solving and provides practice on a number or variety of problems. Problem solving applications sometimes focus on specific topics areas (e.g., mathematics, science) and sometimes they are designed to promote general problem-solving abilities (e.g., pattern recognition, prediction).

6.3.6 Other

Many applications, particularly those that have been developed in recent years, are not easily classified into one of the preceding categories.

6.4 Advantages of CAI

- Interactive.
- Provides immediate feedback.
- Infinitely patient.
- Motivates learners.
- Provides consistency in presentation.
- Can adjust difficulty to level of learner
- Able to branch to provide appropriate content presentation to the learner.
- Can present concepts or processes dynamically and using multiple forms of representation.

414

- Can maintain records of student performance.
- Frees the instructor to do other things.

6.5 Limitations of CAI
- Equipment and software can be costly.
- Development takes time and money.
- Not all learning outcomes are well addressed by CBI.
- Unsophisticated applications may not make good use of the computer.
- Simple CBI has limited modalities (but multimedia is changing that).

Further Reading: Chilcott, J. D. (1996) Effective Use of Simulations in the Classroom. Creative Learning Exchange. Retrieved from:
http://static.clexchange.org/ftp/documents/implementation/IM1996-01EffectiveUseOfSims.pdf

---

Activity
- ✓ How can we improve the quality of teaching by using various types of CAI?
- ✓ Observe a lesson of any class delivered through CAI and write your reflections about it.
- ✓ Design a lesson based upon CAI and deliver it in your class.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

---

Unit Exercise
1. Explain the concept of Computer-Assisted Instruction
2. Describe the development of CAI in historical perspective
3. What are the common Categories of CAI? How various types of CAI can be used in teaching and learning process with examples
4. Identify the advantages and disadvantages of CAI method with examples

---

Summary and transition:
- Computer-based education (CBE) and computer-based instruction (CBI) refer to virtually any kind of computer use in educational settings, including drill and practice, tutorials, simulations, instructional management, supplementary exercises, programming, database development, writing using word processors, and other applications.
- CBI is the oldest form of computer use in education; when most people think of computer applications in education, they think of CBI first.
- CBI is interactive and present concepts or processes dynamically, using multiple forms of representation.
- It can maintain records of student performance and frees the instructor to do other things.
- Not all learning outcomes are well addressed by CBI so instructors have to use CBI keeping in mind the alternatives as well

415

Introduction

An educational method where students working individually or in small groups analyze and develop"real-life" problem or tackle a present day theme within a preset time limit, working independently and with the division of tasks clearly defined. The project is one of the standard teaching methods. It is generally considered a means by which students can develop independence and responsibility, practice social and democratic modes of behavior.

Whenever constructivist concepts, inquiry-based learning, problem-solving, and design are discussed in education, the "project" is considered to be one of the best and most appropriate methods of teaching.

The project method can be applied to each "real-life" problem or task, always taking account of the fact that the main objective or function of the project should be linked to the carrying out of practical tasks. Its sphere of action goes much further than any curricular limitations. Project method broadens the interdisciplinary nature of the curriculum "Project based training processes reject the clearly defined structuring of interrelated subjects or themes replacing this with a focus based on the complexity of the reality of life itself and the working world.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit objectives:

Students will be able to:

7   understand the basic concept of project method

8   identify the advantages and disadvantages of project method

9   apply project method in teaching.

PK Activity:

✓   Recall your previous learning experiences about any project that your teacher ever assigned you in class?

7.1 Concept of Project method

A systemic teaching method that engages students in learning essential knowledge and skills through an extended, student influenced inquiry process structured around complex, authentic questions and carefully designed tasks and products. Whether students work individually, in pairs, or in groups, having them design something from scratch taps their creative abilities. When using the project-based learning strategy, it is almost guaranteed that the endeavor will be interdisciplinary. The teacher's role is to serve as coach, guiding students to use a variety of resources, employ a strategy that is fun and motivating, and uncover content with depth and breadth. If we examine project-based learning in the most general way, we can break it down into the following nine steps (of course, teacher-coaches should modify the steps accordingly to suit the task and the students):

- The teacher-coach sets the stage for students with real-life samples of the projects they will be doing.
- Students take on the role of project designers, possibly establishing a forum for display or competition.
- Students discuss and accumulate the background information needed for their designs.
- The teacher-coach and students negotiate the criteria for evaluating the projects.
- Students accumulate the materials necessary for the project.
- Students create their projects.

- Students prepare to present their projects.
- Students present their projects.
- Students reflect on the process and evaluate the projects based on the criteria established in Step 4.

> **Further Reading**: Stix, A., and Hrbek, F. (2006) The Nine Steps of Project-Based Learning. Teachers as Classroom Coaches.
> http://www.ascd.org/publications/books/106031/chapters/The_Nine_Steps_of_Project-Based_Learning.aspx

7.2 Six Phases of Project Method

Informing: The students themselves compile and analyze the information needed to plan and complete their tasks from available sources of information, such as technical textbooks, specialized publications (e.g. magazines), manuals, videos, etcetera.

Planning: The students themselves prepare the entire work-plan to be used in the completion out of their tasks. During the planning phases, the division of tasks between group members should be clearly defined. All group members should participate actively and collaboratively in the execution of the project. Different work-groups should be formed for each part/component of the project.

Deciding: The students, with help from their teacher, define the various components of their work plan. In this phase, the teacher can present specific tasks, in order to prove whether or not the students have learned the necessary knowledge. collective decision-making involving teacher and group members

Implementing: The students carry out their tasks independently, or through the allocation of tasks, in accordance with their established work-plan.

Controlling: The students themselves control and evaluate the results of their work. If necessary, they can use the tools they themselves developed during the planning stage.

Evaluating: The students and teachers collectively evaluate both the process itself and the results obtained. New objectives and tasks are generated. The cycle closes.

7.3 Advantages of Project Method

- Students take their own decisions and learn to act independently.
- The process motivates students, as it is they themselves that develop problem-solving solutions, plan and direct their own project.
- The learning themes can be easily transferred to similar situations, thus enabling strategies and concepts to be compared, as well as allowing the correct solution to be considered from different perspectives, all of which facilitates the learning process.
- Self-confidence and initiative-taking capacities are strengthened.
- The students themselves set up their own learning situations.
- A logical understanding of the problem or task to be tackled helps acquired knowledge and skills to be retained.
- The learning process is integrated (cognitive, affective and psychomotive learning objectives).
- Students develop inductive skills by analyzing specific cases, deduce principals and relations, formulate hypotheses that are proved through practical application or disproved and replaced by newly induced hypotheses. In other words, students apply scientific thinking to the learning process.
- Higher education learning techniques are included (learning based on activity-based problem-solving).

7.4 Disadvantages of Project Method

417

- Project methods based training is not always the most effective model and cannot necessarily be applied to every teaching-learning process. Its efficiency or inefficiency can best be evaluated by its "cost-effectiveness", that is, in this context, a comparison between the efforts made or dedication shown by students and the degree of success obtained in contrast to other learning models.
- It can sometimes prove difficult to get poorly motivated students started in this form of learning. Students with a history of failures generally have a low curiosity level and can be reluctant to begin a search for new concepts, as a result of previously negative experiences.

Further Readings:
Maciej Kołodziejski et al. (2017) PROJECT METHOD IN EDUCATIONAL PRACTICE Review, Vol. 11, 2017, No. 4, p. 26-32. Retrieved from:
https://www.researchgate.net/publication/321747866_Project_method_in_educational_practice/link/5a2f9bfa0f7e9bfe81705a5b/download

Activity
- ✓ Observe a lesson of any class with application of project method and write your reflections about it.
- ✓ Design a lesson with application of project method and deliver it in your class.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise
1. How project method is interdiciplinary in natue?
2. As a teacher what role you have to perform in problem solving method.
3. How you can link project method with current issues and problems?
4. Explain the phases of project based learning with example.
5. Identify major advantages of and disadvantages of project method.

Summary and transition:
- An educational method where students working individually or in small groups analyze and develop "real-life" problem or tackle a present day theme within a preset time limit, working independently and with the division of tasks clearly defined.
- A systemic teaching method that engages students in learning essential knowledge and skills through an extended, student influenced inquiry process structured around complex, authentic questions and carefully designed tasks and products.

Unit 08: Team teaching
8.1 Concept of Team Teaching
8.2 Categories of Team Teaching
8.3 Models of Team Teaching
8.4 Advantages and Disadvantages of Team Teaching

Introduction

Team Teaching is a common term to describe several variations of a technique to teach a course with more than one instructor. The method shifts the role of instruction from an individual to a team with a primary goal of improving the quality of teaching and learning. Team teaching is one step to constantly adjust the educational system to the changing needs of the students and abilities of the teachers. Although the term and methods have been in existence for decades, the literature on the subject is not as developed as one would expect. Several books and articles have addressed the subject and have discussed some advantages, disadvantages, and considerations when team teaching. Education experiences unique challenges as well as opportunities. One logical starting point for change is with the faculty. For instance Meyers and Ernst (1995) state engineering educators cannot ignore the real world's shifting focus to interdisciplinary engineering, and they should adapt as well. Recently the National Academy of Sciences (2005) developed a publication "Educating the Engineer of 2020", which mentioned many ideas of co-teaching, just in time teaching, and multi-disciplinary teaching. Industry and various academic institutions feel that it is vital to integrate engineering because most systems existing presently are developed with integrated engineering teams. Similarly, the education process is a team effort with excellent communications between faculties. Davis (1997) contends that allowing the faculty team to synchronize their efforts brings their individual strengths and resources together for the course. Team teaching usually involves discipline specific instructors teaching their area of expertise to the students. However, this requires the faculty to understand and have some fluency in the other discipline. Nevertheless, team teaching a course requires a committed, motivated faculty who are creative and willing to change.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit objectives:
Students will be able to:
7 understand the basic concept of team teaching
8 identify the advantages and disadvantages of team teaching
9 apply team teaching

PK Activity:
✓ Recall your current learning experiences about taking different subject from different teachers in same semester?

8.1 Concept of Team Teaching

Team teaching can be defined as a group of two or more teachers working together to plan, conduct and evaluate the learning activities for the same group of learners. Quinn and Kanter (1984) define team teaching as "simply team work between two qualified instructors who, together, make presentations to an audience." There appear to be two broad categories of team teaching:

8.2 Categories of Team Teaching

Category A: Two or more instructors are teaching the same students at the same time within the same classroom.

Category B: The instructors work together but do not necessarily teach the same groups of students nor necessarily teach at the same time.

8.3 Category A Models of Team Teaching

Traditional Team Teaching: the teachers actively share the instruction of content and skills to all students. For example, one teacher may present the new material to the students while the other teacher constructs a concept map on the overhead projector as the students listen to the presenting teacher.

Collaborative Teaching: This academic experience describes a traditional team teaching situation in which the team teachers work together in designing the course and teach the material not by the usual monologue, but rather by exchanging and discussing ideas and theories in front of the learners. Not only do the team teachers work together, but the course itself uses group learning techniques for the learners, such as small-group work, student-led discussion and joint test-taking

Complimentary / Supportive Team Teaching: This situation occurs when one teacher is responsible for teaching the content to the students, while the other teacher takes charge of providing follow-up activities on related topics or on study skills.

Parallel Instruction: In this setting, the class is divided into two groups and each teacher is responsible for teaching the same material to her/his smaller group. This model is usually used in conjunction with other forms of team teaching, and is ideally suited to the situation when students are involved in projects or problem-solving activities, as the instructor can roam and give students individualized support.

Differentiated Split Class: This type of teaching involves dividing the class into smaller groups according to learning needs. Each educator provides the respective group with the instruction required to meet their learning needs. For example, a class may be divided into those learners who grasp adding fractions and those who need more practice with the addition of fractions. One teacher would challenge the learners who grasped the concept more quickly, while the second teacher would likely review or re-teach those students who require further instruction.

Monitoring Teacher: This situation occurs when one teacher assumes the responsibility for instructing the entire class, while the other teacher circulates the room and monitors student understanding and behavior.

Category B models

- Team members meet to share ideas and resources but function independently.
- Teams of teachers share a common resource center.
- Team members share a common group of students, but teach different sub-groups within the whole group.
- One individual plans the instructional activities for the entire team.
- The team members share planning, but each instructor teaches his/her own specialized skills area to the whole group of students.

8.4 Advantages and Disadvantages of Team Teaching
- Team Teaching: Voluntary or Imposed?
- Selecting a Team Teaching Partner
- Roles in Groups of Three or More
- Planning
- Dealing with Tension and Conflict

Further Reading:
Six Models of Team Teaching. Retrieved from: https://icsps.illinoisstate.edu/wp-content/uploads/2014/11/Team-Teaching-Models-Definitions.pdf

Activity:
✓ How you will plan for team teaching session?
✓ Observe a lesson of any class with application of team teaching and write your reflections about it.
✓ Design a lesson based upon team teaching, select your partners and deliver a lesson through team teaching it in your class.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. Explain the concept of team teaching?
2. Describe team teaching models with examples.
3. How you will deal with tension and conflict during team teaching?
4. Identify any major advantages and disadvantages of team teaching

Summary and transition:
- Team Teaching is a common term to describe several variations of a technique to teach a course with more than one instructor
- Team teaching can be defined as a group of two or more teachers working together to plan, conduct and evaluate the learning activities for the same group of learners.
- There are two main categories of team teaching:
  - **Category A:** Two or more instructors are teaching the same students at the same time within the same classroom.
  - **Category B:** The instructors work together but do not necessarily teach the same groups of students nor necessarily teach at the same time.

Unit 09: Story telling
9.1 Concept of Storytelling
9.2 Storytelling and intercultural understanding
9.3 Techniques of story telling
9.4 Performance skills
9.5 Advantages of Storytelling

Introduction:
"Tell me a fact and I'll learn. Tell me the truth and I'll believe. But tell me a story and it will live in my heart forever." - Indian Proverb

Once upon a time, long ago and far away (or perhaps not so long ago), teachers did not use fancy PowerPoint presentations, overhead projectors, or even chalkboards. They simply shared their knowledge through stories. Think back over your years of sitting in classrooms. What are the moments that you most remember? For me, one of those moments was my professor in introduction to psychology spinning the tale of Rosenhan's pseudopatients, perfectly sane individuals who checked into a mental institution and proceeded to act in normal ways. It seemed like an amazing adventure - what was going to happen to these people in the mental hospital? The class was hanging on his every word. The odds are that your memorable moments, too, have to do with stories - not theories or definitions or dates, but an unfolding narrative, complete with suspense, drama, or humor, or perhaps a personal anecdote shared by a favorite teacher. Of course, a classroom narrative may be linked to a major discovery, study, or figure in psychology, but it is not always the importance of the discovery alone that allows it to stay fresh over the years. Rather, the means of presenting the information can make it exciting and unforgettable.

The power of stories has been recognized for centuries, and even today, in Hollywood and beyond, storytelling is a multi-million dollar business. Stories are a natural mode of thinking; before our formal education begins, we are already learning from Aesop's fables, fairy tales, or family history. Indeed, some researchers have even claimed that all knowledge comes in the form of stories (Schank & Abelson, 1995)! Although this strong claim has been questioned, it is generally agreed that stories are a powerful structure for organizing and transmitting information, and for creating meaning in our lives and environments.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Further Reading: Green, M. C. (2004) Storytelling in Teaching. The Association for Psychological Science. April 2004 Volume 17, Number 4
http://tlc.utk.edu/wp-contenthttps://www.researchgate.net/publication/265066812_Storytelling_in_Teachinguploads/sites/39/2013/08/Story_in_Teaching.pdf

---

Unit objectives:
After studying this unit, the students will be able to:
11 Understand the concept of storytelling
12 Develop intercultural understanding through storytelling
13 Apply techniques of story telling
14 Demonstrate storytelling performance skills
15 Identify advantages of storytelling

PK Activity:
✓   Ask your students to share their experiences about reading and hearing stories and what they have learned from these stories?

9.1 Concept of Storytelling
Storytelling is the original form of teaching. There are still societies in which it is the only form of teaching. Though attempts have been made to imitate or update it, like the electronic storytelling of television, live oral storytelling will never go out of fashion. A simple narrative will always be the cornerstone of the art of teaching. Colloquial or literary, unaffected or flowery–the full range of language is present in stories. develop in a unique way. The listeners benefit from observing non–polished speech created on–the–spot. While listening to stories, children develop a sense of structure that will later help them to understand the more complex stories of literature. In fact, stories are the oldest form of literature.

9.2 Storytelling and intercultural understanding
Children have an innate love of stories. Stories create magic and a sense of wonder at the world. Stories teach us about life, about ourselves and about others. Storytelling is a unique way for students to develop an understanding, respect and appreciation for other cultures, and can promote a positive attitude to people from different lands, races and religions. There are a number of ways in which storytelling can enhance intercultural understanding and communication. Stories can:
- allow children to explore their own cultural roots
- allow children to experience diverse cultures
- enable children to empathise with unfamiliar people/places/situations
- offer insights into different traditions and values
- help children understand how wisdom is common to all peoples/all cultures
- offer insights into universal life experiences
- help children consider new ideas
- reveal differences and commonalties of cultures around the world

422

9.2.1 Commonalities of cultures around the world

Stories reveal universal truths about the world. Through stories we see how very different people share the same life experiences and how human nature can transcend culture.

9.3 Techniques of story telling

Telling a story can captivate an audience…that is, with the right techniques and a little practice:

- map the plot as a memory technique
- use story skeletons to help you remember the key events
- think of the plot as a film or a series of connected images
- tell yourself the story in your own words
- create your own version of the story (adapt and improvise)
- retell it numerous times until it feels like a story

9.4 Performance skills

- vary the volume, pitch and tempo of your voice (enunciate clearly and exaggerate expression)
- use your face, body and gestures (let your body speak)
- make your body and face respond to the tale
- have a clear focus and maintain concentration
- maintain engaging eye contact with the audience/ individual listeners
- create a charismatic presence (make the audience believe in you)
- use different, exaggerated character voices
- use your space/ be dynamic
- remember to pace yourself
- always remember to regain your style as a narrator
- use silence and pauses to add dramatic effect

9.5 Advantages of Storytelling

- Promote a feeling of well-being and relaxation
- Increase children's willingness to communicate thoughts and feelings
- Encourage active participation
- Increase verbal proficiency
- Encourage use of imagination and creativity
- Encourage cooperation between students
- Enhance listening skills

Young Learners share a remarkable variety of personal experiences, values and ways of understanding. The language they learn in the classroom is the tool they use to shape their thoughts and feelings. It is more than a way of exchanging information and extending ideas, it is their means of reaching out and connecting with other people. Stories can link not only between the world of classroom and home but also between the classroom and beyond. Stories provide a common thread that can help unite cultures and provide a bridge across the cultural gap.

Further Reading: Storytelling—benefits and tips. English Teaching. British Council. Retrieved from: https://www.teachingenglish.org.uk/article/storytelling-benefits-tips

---

Activity:
✓ Observe a lesson of any class with application of story telling method and write your reflections about it.
✓ Design a lesson based upon story telling method, on any topic, and deliver it in your class.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. Define the concept of storytelling? How teacher can use storytelling to develop intercultural harmony and ethical and moral values?
2. Identify the performance skills required for storytelling, also discuss the advantages of storytelling method.

Summary and transition:
- Storytelling is the original form of teaching. There are still societies in which it is the only form of teaching.
- Though attempts have been made to imitate or update it, like the electronic storytelling of television, live oral storytelling will never go out of fashion.
- Storytelling is a unique way for students to develop an understanding, respect and appreciation for other cultures, and can promote a positive attitude to people from different lands, races and religions
- Young Learners share a remarkable variety of personal experiences, values and ways of understanding.
- It is more than a way of exchanging information and extending ideas, it is their means of reaching out and connecting with other people.
- Stories can link not only between the world of classroom and home but also between the classroom and beyond.

Unit 10: Role play
10.1 Concept of Role play
10.2 Steps to conduct Role-Play
       10.2.1 Preparation for Role-Play
       10.2.2 Conducting the Role-Play
       10.2.3 Debriefing
       10.2.4 Other ways of using role play
10.3 Key for Success
10.4 The Teacher's Role
10.5 Advantages of Role-Play
10.6 Disadvantages of Role-Play

Introduction
In role plays, participants use their own experiences to play a real life situation. When done well, role plays increase the participants self-confidence, give them the opportunity to understand or even feel empathy for other people's viewpoints or roles, and usually end with practical answers, solutions or guidelines. Role plays are useful for exploring and improving interviewing techniques and examining the complexities and potential conflicts of group meetings. They help participants to consolidate different lessons in one setting and are good energizers.

However, role plays can be time-consuming and their success depends on the willingness of participants to take active part. Some trainees may feel a role play is too exposing, threatening or embarrassing. This reluctance may be overcome at the outset by careful explanation of the objectives and the outcome. Some role plays can generate strong emotions amongst the participants. It is therefore essential that a role play is followed by a thorough debriefing. This provides the opportunity for the trainer and the participants to raise and assess new issues.

Role play exercises give students the opportunity to assume the role of a person or act out a given situation. These roles can be performed by individual students, in pairs, or in groups which can play out a more complex scenario. Role plays engage students in real-life situations or scenarios that can be "stressful, unfamiliar, complex, or controversial" which requires them to examine personal feelings toward others and their circumstances (Bonwell & Eison, 1991, p.47). Unlike simulations and games which often are planned, structured activities and can last over a long period of time, role play exercises "are usually short, spontaneous presentations" but also can be prearranged research assignments (Bonwell & Eison, 1991, p.47)

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Further Reading: Role Playing Northern Illinois University, Faculty Development and Instructional Design Center facdev@niu.edu, http://facdev.niu.edu, 815.753.0595. Retrieved http://www.niu.edu/facdev/_pdf/guide/strategies/role_playing.pdf

---

Unit objectives:
After studying this unit, the students will be able to:
9   Understand the concept of Role-Play
10 Demonstrate Role-Play and following all steps to conduct the role-play
11 Observe the role of teacher during role-play
12 Identify the advantages and disadvantages of Role-Play

PK Activity:
✓   Ask students have they ever participated in any drama or skit? How it was organized and what they have learned from it?

10.1 Concept of Role play
Role-play is an effective learning strategy in which students act the part of another character, thereby gaining an appreciation for others' points of view as well an understanding of the complexity of resolving issues and problems in the real world. This strategy may be used to learn about issues and decisions of the past (and how things might have been different) or about current issues in the local community or in a broader setting. Aside from knowledge acquisition, preparing and conducting a role-play activity strengthens students' knowledge acquisition skills, their creativity, their value clarification skills, and a variety of interpersonal skills identified in the curriculum outcomes.

10.2 Steps to conduct Role-Play
10.2.1 Preparation for Role-Play:
- Identify an appropriate issue or controversy, past or present, which requires resolution.
- Select an issue that involves a number of parties, each of which brings its own perspectives to the debate or discussion.
- Students should have a good general knowledge of the issue before roles are selected.
- Clearly identify the parties and individuals involved, and select roles accordingly.
- All students should have a specific role. In addition to participants in the actual debate, there might be members of a commission, court personnel, civic leaders, media, et cetera.

425

- Students conduct research to collect information about the specific views of the party or individual they represent in the role-play.
- Students use information they have collected to clarify their viewpoints and to develop their arguments and strategies for maximum effect in the role-play activity. Students also seek to understand other viewpoints and to develop counter-arguments. The nature of the role-play activity (council meeting, public hearing, court case, etc.) is determined and reviewed before proceeding.

10.2.2 Conducting the Role-Play
- Ensure that the physical setting (room, furniture placement, necessary equipment) is appropriate for the nature of the role-play.
- Props and costumes may be included to provide a more authentic experience.
- The issue and its real-life setting are reviewed before proceeding.
- Unless playing a specific character, the teacher's role should be limited to occasional procedural advice as appropriate. At no time should the teacher attempt to influence or favour a particular viewpoint.
- The role-play activity should have an appropriate real-life conclusion, such as a statement or decision announcement by the head of a commission, judge, or mayor.
- In the case of a hearing or court case, the role-play should include an opportunity for the commissioners or jury to meet, discuss evidence provided, and reach a decision.

10.2.3 Debriefing
In order to maximize the role-play learning experience, it is critical for students to have an opportunity to step out of their roles and debrief, including a discussion on how they felt playing the role, and a review of the issues and the evidence and arguments presented. Individual students' positions may or may not have changed; however, they will have a much better understanding of the issues as well as the complexity and importance of resolving real-world problems. Solving problems involves debate, negotiations, and consensus building.

Further Reading: Role-Play in Social Studies. Retrieved From:
https://www.edu.gov.mb.ca/k12/cur/socstud/frame_found_sr2/tns/tn-29.pdf

---

10.2.4 Other ways of using role play
Role Play is used in a variety of ways:
- A small group enacts a role-play about a situation while other learners observe. A discussion follows that enactment.
- Role-play is used to stimulate discussion on complex issues.
- In certain situations, a role-play is also used to practice some skills.
- Role-play can be re-enactment of past experiences
In whichever way role-play is used, a discussion must follow to process the experience of either observation or re-enactment

10.3 Key for Success
- Establish a safe environment for learner to experiment and make mistakes without sanction
- Use realistic situations that relate to learning objectives
- Use only when learners have adequate knowledge and skills to perform what is requested
- Provide clear directions and specific time limits
- Observe performance (for multiple groups, rotate through them)
- Conduct a feedback/debriefing session after the role plays

10.4 The Teacher's Role
- Preparation of the learning process
- Remain in the background as much as possible
- Note taking
- Supervision
- Encourage students to self evaluate their work and experiences

426

- Pay special attention to the areas of cooperation, organization of tasks and group or teamwork methodology
- Addressing them through conversations

10.5 Advantages of role play
- Players interact within the scenarios they're given, which encourages individuals to come together to find solutions and to get to know how their colleagues think.
- It allows the students to play the roles of certain characters in these situations so they are able to see things from a new perspective.
- students get the opportunity to practice skills they might not use on a regular basis. Skills such as debating, acting, reasoning and negotiating.
- Energising activity / fun to do
- Experiential learning is more powerful than instructions.
- It delivers complex concepts in a simple manner
- Needs little preparation for the teacher/facilitator
- help solve classroom interpersonal problems
- teach skills in the classroom.
- facilitate subject-matter learning through the dramatization of literary and historical works and historical or current events.
- practice information about and expectations of society,
- relate academic material to his daily tasks.
- Works best when there is an attempt to follow a definite sequence of steps

10.6 Disadvantages of role play
- Participants may be too shy and reluctant
- Can be threatening to some
- It can become 'too much fun' and disrupt the task
- Participants can get too involved and loose objectivity
- Participants can overact and show off The observers may not observe well or take notes
- Role-play and simulation take a lot of time especially if they include preparation and follow-up work.
- The lack of space and the large number of students can make the organization of the activities difficult.

Activity
✓ Observe a lesson of any class with application of role-play method, observe the role of teacher during role play and write your reflections about it.
✓ Choose any topic and demonstrate a Role-Play in your class by following all steps to conduct the role-play.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

---

Unit Exercise
1. Explain the concept of Role-Play.

1.	Develop a role play lesson plan keeping in view all the steps of role play
2.	Identify the advantages and disadvantages of Role-Play

Summary and transition:

- Role-play is an effective learning strategy in which students act the part of another character, thereby gaining an appreciation for others' points of view as well an understanding of the complexity of resolving issues and problems in the real world
- There are three Steps to conduct a Role-Play: Preparation for Role-Play, Conducting the Role-Play and debriefing
- Role Play can be used in a variety of ways.
- It allows the students to play the roles of certain characters in these situations so they are able to see things from a new perspective.
- students get the opportunity to practice skills they might not use on a regular basis.
- This method provides experiential learning that is more powerful than instruction.
- It delivers complex concepts in a simple manner

Unit 11: Micro Teaching
11.1 History of Micro-teaching
11.2 Concept of microteaching
11.3 Preparation for a micro-lesson session
11.4 Re-planning, re-presenting and feedback
11.5 Teaching skills
11.6 Video confrontation
11.7 Advantages of Microteaching

Introduction
As the name implies, "micro-teaching" is a microscopic or small version of the process you go through in putting together a regular lesson. A micro-teaching session should be a complete instructional segment and should deal with topics that will provide new learning for the other participants. The instructor should not ask the participants to play a role or to assume an imaginary identity, we just don't have time in 15 minutes. Class time, scope of content and time frame are all reduced.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit objectives:
After studying this unit, the students will be able to:
11 Conceptualize microteaching as a process
12 Plan, design and conduct micro-lesson session
13 Demonstrate various Teaching skills through micro-lesson
14 Manage video confrontations during micro-lesson session
15 Identify advantages of Microteaching

PK Activity:
✓ Teaching is a skill and it can be mastered through variety of techniques. Ask your students what are those techniques through which student teachers can learn how to teach?

11.1 History of Micro-teaching
Microteaching originated in 1961 at Stanford University (USA). The immediate predecessor of microteaching was the demonstration lesson used at Stanford until 1961. The demonstration lesson involves

a student presenting a lesson to a small group of fellow students while the rest of the class looks on. In 1963 it was called microteaching.

11.2 Concept of micro-teaching

"Microteaching is a method for training teachers where explicit use is made of the principle of feedback and where the teacher-learning situation remains limited with respect to the number of students to whom the lesson is given; the duration of the lesson; and the extent of the lesson in terms of contents and didactic presentation".

It reduces the complexity of the real classroom teaching situation in terms of the number of students, the amount of time and the amount of learning contents. It emphasizes training for mastery of teaching activities such as skills, techniques, methods and curriculum selection.

It offers better control over practicing teaching activities and the student can receive meaningful feedback immediately after his performance with the help of technological teaching media and observation and interaction-analysis instruments

Microteaching as reduced situation
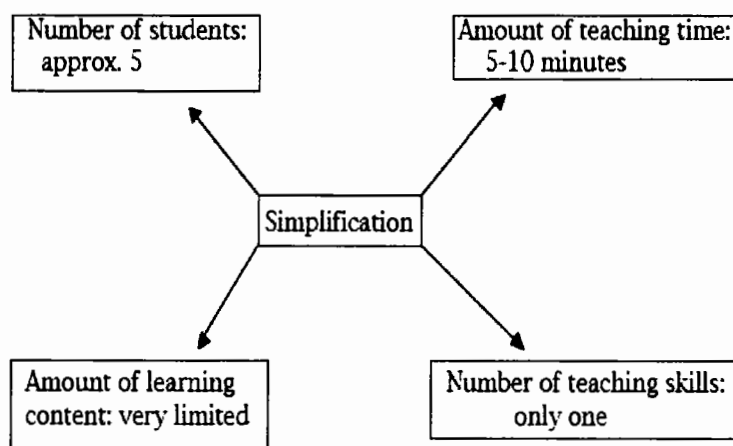
11.3 Preparation for a micro-lesson session
  - (a) Formulating the aim
  - (b) Modeling
  - (c) Designing a micro-lesson.
  - (d) Presenting a micro-lesson.
  - (e) Feedback and evaluation.
  - (f) a record of the micro-lesson (sound, video, film);
  - (g) a completed evaluation form;
  - (h) an observation instrument;
    - (a) the teacher educator
    - (b) the student's fellow students;
    - (c) the student himself.

Presentation of micro-lesson: approx. 10 minutes
Only the replay of the lesson: approx. 10 minutes
Feedback and evaluation: approx. 10 minutes

Total time per student: approx. 30 minutes

11.4 Re-planning, re-presenting and feedback

429

If the student's presentation of the micro-lesson does not satisfy the demands desired, normally he is given the opportunity to again plan his micro-lesson, present it again and receive feedback until the desired demands are met.

Microteaching as training and practice situation
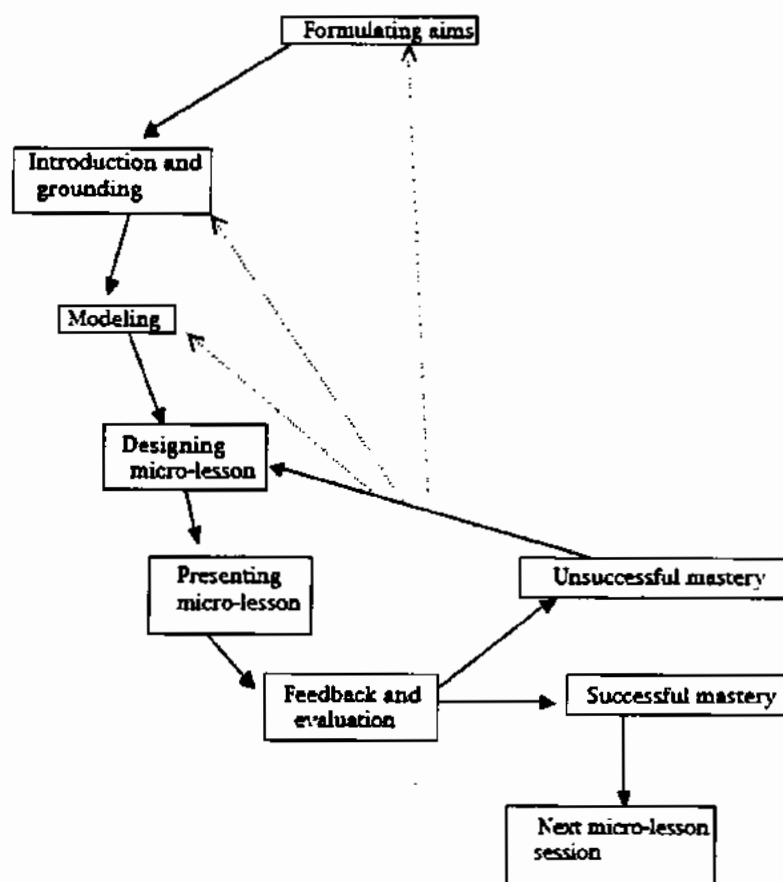
11.5 Teaching skills
- consolidating (concluding) and evaluating;
- silent and non-verbal encouragement to think;
- encouraging and reinforcing;
- focusing
- recognizing attentive behavior
- demonstrating and using examples
- lecturing
- planned revising
- full communication
- guiding
- verbal cognitive interaction
- heuristics
- asking questions

11.6 Video confrontation
Where video equipment is used to record students' micro-lessons and where the student himself is expected to handle the video equipment and where he acts before the video camera, it is necessary that he be subjected to a video confrontation. The aims of the video confrontation are the following:
- To the extent necessary, to make the student familiar with and skilled in handling the video equipment during the recording and playback of micro-lessons.

430

- Because at first the whole microteaching situation is strange for most students and because most of them have not yet seen themselves on a video monitor, it is necessary that the first be oriented to this situation. This will prevent their attention from wandering and becoming focused on other aspects than practicing the teaching skill of concern.
- Remove any fear of the student's appearing before the video

11.7 Advantages of Microteaching
- Microteaching is a training opportunity and the students can profit from all of the advantages of the situation.
- Microteaching provides the student with a much less complex learning milieu than, e.g., school practice.
- It offers the student the opportunity to more easily and purposefully practice teaching skills during the presentation of micro-lessons.
- It provides the student with a context in which his primary responsibility is to learn to teach more effectively without the urgency of taking into account the needs and demands of pupils.
- It offers the student the opportunity to systematically analyze and evaluate his teaching.
- It offers the student the opportunity to practice particular teaching skills until they are mastered before the more complex real teaching situation is dared.
- The systematic practice of teaching skills creates the possibility of forming a bridge between theory and practice.
- Implementing interaction-analysis instruments offers the opportunity to objectively analyze particular activities and makes the student sensitive to part-activities that the skill manifests. student the opportunity to better identify the elements of the earning contents and then further design his micro-lesson around them.
- The student himself, or under the guidance of a teacher educator, can easily correct problems or errors that arises
- It gives each student the opportunity to contribute meaningfully to the improvement of his fellow students and at the same time it puts a great deal of responsibility on his shoulders.
- To present a micro-lesson to fellow students in the same subject area gives him the opportunity to present his micro-lesson on any grade level.
- It provides the opportunity to students to put themselves, as far as possible, in the position of the pupils with whom they must try to deal.
- The student who presents the micro-lesson is challenged to communicate with his "pupils" about the content on an appropriate learning level even though he presents his micro-lesson to fellow students.
- the variables he has to take into account are limited.
- The greatest value of microteaching is the changes it brings about in students regarding their teaching. The greatest changes brought about by microteaching are:*a greater grasp of teaching as a complex, challenging profession;

Further Reading:
Practice "Micro-Teaching" Sessions. Humber ITAL, Centre for Teaching and Learning, 2011. Retrieved from:
https://www.humber.ca/centreforteachingandlearning/assets/files/Teaching%20Excellence%20Program/micro-teach-session-2011.pdf

---

Activity
✓ Observe a micro-lesson session and write your reflections about it.
16 Plan, design and conduct micro-lesson sessions in your class with proper mechanism of peer feedback and evaluation.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise
1. Discuss microteaching as a process. Also identify some advantages and issues related to micro teaching
2. Why micro teaching is called a scaled down situation? What teaching skills can be mastered through micro-lesson?
3. Why it is important to record lessons in micro- teaching? How students can manage video confrontations during micro-lesson session?

Summary and transition
- Microteaching originated in 1961 at Stanford University (USA).
- Micro-teaching" is a microscopic or small version of the process you go through in putting together a regular lesson.
- A micro-teaching session should be a complete instructional segment and should deal with topics that will provide new learning for the other participants.
- Microteaching is a method for training teachers where explicit use is made of the principle of feedback and where the teacher-learning situation remains limited with respect to the number of students to whom the lesson is given; the duration of the lesson; and the extent of the lesson in terms of contents and didactic presentation
- There are some important phases in micro teaching such as preparation for a micro-lesson session, formulating the aim, modeling, designing a micro-lesson, presenting a micro-lesson, feedback and evaluation, a record of the micro-lesson (sound, video, film);a completed evaluation form; re-planning, re-presenting and feedback
- Microteaching is a training opportunity and the students can profit from all of the advantages of the situation.

Unit 12: Cooperative Learning
12.1 Concept of cooperative learning
12.2 Types of Cooperative Learning
12.3 Elements of Cooperative Learning
12.4 Cooperative learning techniques
12.5 Advantages

Introduction
Cooperative learning is an approach to group work that minimizes the occurrence of those unpleasant situations and maximizes the learning and satisfaction that result from working on a high-performance team. A large and rapidly growing body of research confirms the effectiveness of cooperative learning in higher education (1-4). Relative to students taught traditionally—i.e., with instructor-centered lectures, individual assignments, and competitive grading—cooperatively taught students tend to exhibit higher academic

432

achievement, greater persistence through graduation, better high-level reasoning and critical thinking skills, deeper understanding of learned material, greater time on task and less disruptive behavior in class, lower levels of anxiety and stress, greater intrinsic motivation to learn and achieve, greater ability to view situations from others' perspectives, more positive and supportive relationships with peers, more positive attitudes toward subject areas, and higher self-esteem. Another nontrivial benefit for instructors is that when assignments are done cooperatively, the number of papers to grade decreases by a factor of three or four.

Introductory Activity: Show a video to the students and ask them to watch the video carefully and discuss what they have learned from this.

Unit objectives:
After studying this unit, the students will be able to:
9   explain the concept of cooperative learning
10   elaborate various types of cooperative learning
11   design cooperative learning strategies keeping in view elements of cooperative learning
12   demonstrate Cooperative learning techniques

Activity:
✓   Ask student to share their experience about working in groups?

12.1 Concept of cooperative learning
Cooperative learning involves students working together in small groups to accomplish shared goals. (Gillies, R., 2007). Effective cooperative learning is dependent on the sort of talk, which takes place in the group between students. Talking about a question helps create meaning and understanding; humans make meaning about things through talk. Studies have shown that by having to explain answers to problems to a peer that the act of having to clarify and communicate actually enhances the students understanding. In these conversations it is the process of discussion that is important not whether the answers are right or wrong. During cooperative learning activities each member of a team is responsible not only for learning what is taught but also for helping team-mates learn, thus creating an atmosphere of achievement. Students work through the assignment until all group members successfully understand and complete it

12.2 Types of Cooperative Learning:

12.2.1 Informal Cooperative Learning
Informal cooperative learning involves students working in small groups for a few minutes to help students process what has been taught, to think about a particular question, to assist the teacher to identify and address any misunderstandings about the content, etc.

12.2.2 Formal Cooperative Learning
Formal cooperative learning consists of students working together, for one class period over several weeks to achieve shared learning goals and complete jointly specific tasks and assignments. (Johnson, Johnson & Holubic, 2008)

12.2.3 Base Groups
Base groups are long-term, heterogeneous cooperative learning groups with stable membership. Members' primary responsibilities are to (a) provide one another with support, encouragement, and assistance in completing assignments; (b) hold one another accountable for striving to learn; and (c) ensure that all members are making good academic progress. Typically, cooperative base groups are heterogeneous in membership, especially in terms of achievement, motivation and task orientation. They meet regularly for the duration of the class. (Johnson, D.W. & Johnson, F.P., 2009)

12.3 Elements of Cooperative Learning
12.3.1 Positive interdependence

433

Team members are obliged to rely on one another to achieve the goal. If any team members fail to do their part, everyone suffers consequences.

12.3.2 Individual accountability.

All students in a group are held accountable for doing their share of the work and for mastery of all of the material to be learned.

12.3.3 Face-to-face promotive interaction.

Although some of the group work may be parcelled out and done individually, some must be done interactively, with group members providing one another with feedback, challenging reasoning and conclusions, and perhaps most importantly, teaching and encouraging one another.

12.3.4 Appropriate use of collaborative skills.

Students are encouraged and helped to develop and practice trust-building, leadership, decision-making, communication, and conflict management skills.

12.3.5 Group processing.

Team members set group goals, periodically assess what they are doing well as a team, and identify changes they will make to function more effectively in the future. Cooperative learning is not simply a synonym for students working in groups. A learning exercise only qualifies as cooperative learning to the extent that the five listed elements are present.

12.4 Cooperative learning techniques:

Name	Description
Round robin	Each student in turn shares something with his or her teammates, this works well for expressing ideas and opinions, e.g., developing consensus on the responsibilities of a professional Teacher.
Numbered Heads Together	The teacher asks a question, students consult to make sure everyone knows the answer, then one student is called upon to answer, e.g., a group of students discuss how technological innovations benefit education sector, making sure everyone knows a variety of reasons. Then, the teacher calls upon individual group members to assess progress.
Think Pair Share	Students think to themselves on a topic provided by the teacher; they pair up with another student to discuss it; then they share their thoughts with the class, e.g., students are asked to give examples of the processes used by individuals, political parties, interest groups or the media to affect public policy. After quiet thought, they share with a neighbor, then the entire class.
Team Word Webbing	Students write simultaneously on a paper, drawing main concepts, supporting elements, and bridges representing the relation of concepts in a generalization. This helps students to analyze and to see relationships in complex systems, e.g., to compare the various educational philosophies or educational systems.
Co-op	Students work in groups to produce a particular group product to share with the whole class; each student makes a particular contribution to the group.

12.5 Advantages

- Emphasis on the diversity of instruction rather than uniformity
- More time for peer learning and teacher assistance
- Greater flexibility for teachers to adjust learning objectives
- Repetition for low achievers
- Students orally rehearse material, explain it to others, discover solutions, debate and discuss
- procedural issues
- Opportunities to promote higher order thinking skills
- Motivates students to learn information
- Opportunities to develop social and communication skills

434

Further Reading:
- ✓ Felder, R. M., and Brent, R. (2007) Cooperative Learning. P.A. Mabrouk, ed., Active Learning: Models from the Analytical Sciences, ACS Symposium Series 970, Chapter 4. Washington, DC: American Chemical Society, 2007. Retrieved from:
https://www.engr.ncsu.edu/wp-content/uploads/drive/1PLmbl9qPHpwYV7GFqUgWTHm5YNDzHV8V/2007-CLChapter.pdf
- ✓ Cooperative Learning Theory and Practice: A Practical Guide for Teachers
http://www.kapekh.org/files/report_file/38-en.pdf

Activity:
- ✓ Observe any class with application of cooperative learning strategies and write your reflections about it.
- ✓ Take any topic of their choice, design some cooperative learning strategies and conduct in classroom.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise
1. What is cooperative learning? Explain various types of cooperative learning
2. How cooperative learning techniques can be used in classrooms? Provide some practical examples?
3. Design some cooperative learning strategies keeping in view elements of cooperative learning.

Summary and transition:
- Cooperative learning involves students working together in small groups to accomplish shared goals.
- There are some types of cooperative learning such as: informal cooperative learning, formal cooperative learning and base groups
- There are some Cooperative learning techniques such as: Round robin, Numbered Heads Together, Think Pair Share, Team Word Webbing and Co-op
- Cooperative learning strategies emphasis on the diversity of instruction rather than uniformity and provide greater flexibility for teachers to adjust learning objectives
- Students orally rehearse material, explain it to others, discover solutions, debate and discuss
- Provides opportunities to promote higher order thinking skills, motivates students to learn information and helps developing social and communication skills

Introduction

The instructional process comprises three basic steps. The first is planning instruction, which includes identifying specific expectations or learning outcomes, selecting materials to foster these expectations or outcomes, and organizing learning experiences into a coherent, reinforcing sequence. The second step involves delivering the planned instruction to students, that is, teaching them. The third step involves assessing how well students learn or achieve the expectations or outcomes. Notice that to carry out the instructional process the three steps should be aligned with one another. That is, the planned instruction should be logically related to the actual instruction and the assessments should relate to the plans and instruction

Reading:
highered.mheducation.com/sites/dl/free/0070959668/.../Airasian_88697_ch03.pdf

Module Objectives
After studying this unit, the student will be able to:
9. Identify learners' needs and characteristics.
10.   Design lesson plans according to the various approaches.
11.   Understand the need of lesson planning in teaching and learning situation
12.   Construct different types of lesson planning (weekly planning, Daily planning, Unit planning, Course planning)

Unit 01: Identifying the learners' needs and characteristics
    1.1 what are the learners' needs and characteristics?
    1.2 Why Identify Learner Needs?
    1.3 Eliciting and Validating Learner Needs
    1.4 Aligning Learner Needs with Instructor Goals

Introduction:

The concept of learner characteristics is used in the sciences of learning and cognition to designate a target group of learners and define those aspects of their personal, academic, social or cognitive self that may influence how and what they learn. Learner characteristics are important for instructional designers as they

436

allow them to design and create tailored instructions for a target group. It is the expected that by taking account of the characteristics of learners, more efficient, effective and/or motivating instructional materials can be designed and developed.

Further Reading: Drachsler, H., Kirschner, P. (2011) Learner Characteristics
https://www.researchgate.net/publication/234057270_Learner_Characteristics

Introductory Activity: Show a video to the students about the concept, ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives
After studying this unit, the student will be able to:
9. Identify the learners' needs and characteristics
10. Understand the importance of identifying learners' needs and characteristics for planning instruction.
11. Align Learner Needs with Instructional Goals

PK Activity:
✓ Generate a discussion and ask students about their educational needs as a student.

1.1 What are the learners' needs and characteristics?

Learner characteristics can be personal, academic, social/emotional and/or cognitive in nature. Personal characteristics often relate to demographic information such as age, gender, maturation, language, social economic status, cultural background, and specific needs of a learner group such as particular skills and disabilities for and/or impairments to learning. Academic characteristics are more education and/or learning related such as learning goals (of an individual or a group), prior knowledge, educational type, and educational level. Social/emotional characteristics relate to the group or to the individual with respect to the group. Examples of social/emotional characteristics are group structure, place of the individual within a group, sociability, self-image (also feelings of self-efficacy and agency), mood, et cetera. Finally, cognitive characteristics relate to such things as attention span, memory, mental procedures, and intellectual skills which determine how the learner perceives, remembers, thinks, solves problems, organizes and represents information in her/his brain. With respect to learner characteristics, there are often large differences between the characteristics of different learners and groups of learners such as children, students, professionals, adults, older people and disabled persons. These groups differ in their motivation, prior knowledge, expertise level, study time, and physical abilities. The differences within the learner characteristics have an impact on the structure of the instruction and the degree of support and guidance of the learning process.

The needs of a learner represent the gap between what the learner wants to get out of the learning experience and his or her current state of knowledge, skill, and enthusiasm (Noessel, 2003). Table 1 identifies potential learning needs in four different domains: cognitive, social, affective, and psychomotor. When facilitators establish a new learning environment, it is important that they assess preparedness of participants in all four domains

1.2 Why Identify Learner Needs?

Each learner is unique and brings to the learning situation his or her own different learning style, knowledge set, pool of past experiences, and motivation. In learner-centered instruction, it is important for instructors to consider the level of knowledge and skill development attained by the learners prior to instruction (Dick, Carey, & Carey, 2004). The best way to get this information is by asking the learners themselves. To determine the readiness of participants for learning, the instructor/facilitator should decide, prior to the first class or workshop, how to collect and use data on learner needs. The process of collecting and playing back these data can raise the level of participant excitement about the learning experience. The instructor can use this knowledge throughout the rest of the educational process to customize instructional strategies to enable learners to reach shared educational objectives.

1.3 Eliciting and Validating Learner Needs

There is no single best way to gather information about learner needs. In many situations, instructors can anticipate learner needs based on their prior knowledge about learners who have completed similar

437

instructional sessions. The techniques described below can uncover valuable supplemental information on learner needs in a minimal amount of time. Some of these techniques are more effective than others at shaping learners' expectations toward the instruction.

1.4 Aligning Learner Needs with Instructor Goals

Instructors' language and facilitation skills are important in merging their own goals for instruction with learner needs. Ideally, instructors want to meet their goals and to satisfy the learning needs of the students. To help connect their own goals and expectations for students with those of the students themselves, instructors may choose to publish their instructional goals in the course syllabus or workshop agenda and analyze it using the technique described above. By discussing results from learner needs analysis and comparing those findings with the rationale for course design, facilitators ensure that they accurately inventory learner needs and that they give timely feedback to participants.

Further Reading: Minderhout, V. (N.A) Identifying Learner Needs Learner Development: Facilitating Learning. Faculty Guidebook. https://pcrest.com/research/fgb/3_2_6.pdf

---

Activity:
✓ Take an interview of one or two teachers about their own practices to identify students needs and characteristics?
✓ Identify the best practice and implement it in your own class to identify needs and characteristics of your own class.
✓ Develop a checklist of learners needs and characteristics.

Feedback:
• Provide immediate feedback after every activity
• Inform the student what they did and what he or she were supposed to do
• inform the student the accuracy of their performance or response
• Direct the students in the right direction to find the correct answer but does not provide the correct answer
• Provide information (new, different, additions, suggestions) to a student and confirm that you have been actively listening – this information allows sharing between two people
• Provide the student with suggestions, recommendations, and information to correct their performance

---

Unit Exercise:
8. Why it is important to plan instruction keeping in view the learners' needs and characteristics for planning instruction.
9. What strategies a teacher can use to Validating Learner Needs?
10. How teachers can align learners' needs with Instructional Goals? Discuss with practical examples.

Summary and transition
Learner characteristics can be personal, academic, social/emotional and/or cognitive in nature. The needs of a learner represent the gap between what the learner wants to get out of the learning experience and his or her current state of knowledge, skill, and enthusiasm (Noessel, 2003).

Each learner is unique and brings to the learning situation his or her own different learning style, knowledge set, pool of past experiences, and motivation. In learner-centered instruction, it is important for instructors to consider the level of knowledge and skill development attained by the learners prior to instruction (Dick, Carey, & Carey, 2004).

There is no single best way to gather information about learner needs. In many situations, instructors can anticipate learner needs based on their prior knowledge about learners who have completed similar instructional sessions.

438

Instructors' language and facilitation skills are important in merging their own goals for instruction with learner needs. Ideally, instructors want to meet their goals and to satisfy the learning needs of the students. To help connect their own goals and expectations for students with those of the students themselves, instructors may choose to publish their instructional goals in the course syllabus or workshop agenda and analyze it using the technique described above.

Unit 02: Approaches to lesson planning
2.1 Importance of planning
2.2 Effective Lesson Planning
2.3 Forward, Central and Backward Design

Introduction

A lesson is an organized set of activities designed to present one manageable-sized piece of your course. Don't confuse lesson with lecture as it is commonly used in the expression lecture/lab when describing course hours. You may have more than one lesson in a 50-minute lecture or lab. A lecture is just one teaching technique that you may use in a lesson. The stages and flow of a lesson Each lesson should be a complete segment in itself, providing new learning. Try to keep your students in mind as you plan your lesson—ask yourself:

- Who are they?
- What do they already know?
- Why should they learn about this?
- What must they learn?
- What must they do to learn?
- How will they demonstrate their learning?
- What the instructor and students do varies at the different stages of a lesson. The stages of a lesson plan—beginning, middle, end—reflect the three stages of learning:
  - o Motivation (beginning)
  - o Guidance (middle)
  - o Practice (end)

Each stage should flow smoothly into the next, which builds on the previous. If students do not have an opportunity to go through all three stages, learning may not occur.

Further Reading: Preparing Lesson Plans. Instructional Job Aid. British Columbia Institute of Technology. Retrieved from: https://www.bcit.ca/files/ltc/pdf/ja_lessonplans.pdf

---

Introductory Activity: Show a video to the students about the concept, ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives
After studying this unit, the student will be able to:
7. Conceptualize various approaches to lesson planning
8. Construct lesson plans according to Forward Design, Central Design and Backward Design

---

PK Activity:
✓ What do you know about lesson planning?

2.1 Importance of planning

There are a number of benefits to writing a lesson plan. First, lesson planning produces more unified lessons (Jensen, 2001). It gives teachers the opportunity to think deliberately about their choice of lesson objectives, the types of activities that will meet these objectives, the sequence of those activities, the

materials needed, how long each activity might take, and how students should be grouped. Teachers can reflect on the links between one activity and the next, the relationship between the current lesson and any past or future lessons, and the correlation between learning activities and assessment practices. Because the teacher has considered these connections and can now make the connections explicit to learners, the lesson will be more meaningful to them.

Further Reading: Lesson Planning. Retrieved from:
http://www.tesol.org/docs/default-source/books/14002_lesson-planning_ch-1.pdf?sfvrsn=2

2.2 Effective Lesson Planning

Planning ahead to identify a course of action that can effectively reach goals and objectives is an important first step in any process, and education is no exception. In education, the planning tool is the lesson plan, which is a detailed description of an instructor's course of instruction for an individual lesson intended to help learners achieve a particular learning objective. Lesson plans communicate to learners what they will learn and how they will be assessed, and they help instructors organize content, materials, time, instructional strategies, and assistance in the classroom. Lesson planning helps instructors to create a smooth instructional flow and scaffold instruction for learners.

Further Reading:
TEAL Center Fact Sheet No. 8: Effective Lesson Planning (2012) Teaching Excellence in Adult Literacy. American Institute for Research
http://www.cusoeprofessionaleducation.org/uploads/2/9/5/8/29585257/tealeffectivelessonplanning.pdf

2.3 Forward, Central and Backward Design

The process of lesson planning can be approached in several ways. Forward, central, and backward design are approaches to curriculum development that are also applicable to lesson planning. Universal Design for Learning intends to address individual differences in learners and to remove barriers to their learning. Forward, Central, and Backward Design Forward, central, and backward design refer to the starting point of the planning process and how the process develops. With a forward design process, the teacher begins by identifying the linguistic or cultural content to be taught. He or she then decides upon the methods and activities to be used to teach this content and ends with the assessment of learning. For instance, the teacher might see that the syllabus calls for teaching language related to the topic of travel. The teacher decides to use pictures to present travel-related vocabulary and have students practice travel-related dialogues from their textbook. The assessment, which is an end-of-semester exam, requires students to match vocabulary words and definitions and to fill in the blanks in a travel-themed paragraph. A forward design option may be preferred in circumstances where a mandated curriculum is in place, where teachers have little choice over what and how to teach, where teachers rely mainly on textbooks and commercial materials rather than teacher-designed resources, where class size is large and where tests and assessments are designed centrally rather than by individual teachers. (Richards, 2013, p. 29)

Input, Process, Output and the Curriculum

INPUT	PROCESS	OUTPUT
Syllabus	Methodology	Learning outcomes

INPUT :- Input refers to the content of a course. Once content has been selected it needs to be organized into teachable and learnable units as well as arranged in a rational sequence. The result is a syllabus.

PROCESS :- Process refers to how teaching is carried out and constitutes the domain of methodology in language teaching. Methodology encompasses the types of learning activities, procedures and techniques that are employed by teachers when they teach and the principles that underlie the design of the activities and exercises in their textbooks and teaching resources.

OUTPUT :- Output refers to learning outcomes, that is, what learners are able to do as the result of a period of instruction. This might be a targeted level of achievement on a proficiency scale

CURRICULUM :- The term curriculum is used here to refer to the overall plan or design for a course and how the content for a course is transformed into a blueprint for teaching and learning which enables the desired learning outcomes to be achieved.

The forward design
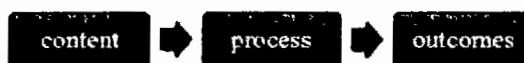
content ➡ process ➡ outcomes

Forward design is based on the assumption that input, process, and output are related in a linear fashion. In other words, *before* decisions about methodology and output are determined, issues related to the content of instruction need to be resolved. Curriculum design is seen to constitute a sequence of stages that occur in a fixed order – an approach that has been referred to as a 'waterfall' model (Tessmer and Wedman, 1990) where the output from one stage serves as the input to the stage that follows.

The central design

process → content / outcomes

With central design, planning *starts* with the selection of teaching activities, techniques and methods rather than with the elaboration of a detailed syllabus or specification of learning outcomes. Issues related to input and output are dealt with *after* a methodology has been chosen or developed or during the process of teaching itself.

The backward design

outcomes → content / process

Backward design starts with a careful statement of the desired results or outcomes: appropriate teaching activities and content are derived from the results of learning.
The process consists of:
Step 1: diagnosis of needs
Step 2: formulation of objectives
Step 3: selection of content
Step 4: organization of content
Step 5: selection of learning experiences
Step 6: organization of learning experiences
Step 7: determination of what to evaluate and of the ways of doing it (

Further Readings:
✓ Jack C. Richards (2013) Curriculum Approaches in Language Teaching: Forward, Central, and Backward Design. RELC Journal 2013 44: 5. DOI: 10.1177/0033688212473293.Published by SAGE. Retreived from:

Activity:
✓ Suppose you have entered a class with a hastily written lesson plan or no plan at all.
  - How would you feel?
  - How would the lesson have been improved with more thorough planning?
✓ Arrange an activity in which first you will deliver a lesson without any lesson plan and second deliver lesson with a plan. Write your reflection about both situations are share your findings with class.

Feedback:
- Provide immediate feedback after every activity
- Inform the student what they did and what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct the students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirm that you have been actively listening – this information allows sharing between two people
- Provide the student with suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. What are the different approaches of lesson plans? Discuss with examples.
2. Choose any topic and develop lesson plans according to Forward Design, Central Design and Backward Design.

Summary and transition:
A lesson is an organized set of activities designed to present one manageable-sized piece of your course. Each lesson should be a complete segment in itself, providing new learning.
Each stage should flow smoothly into the next, which builds on the previous. If students do not have an opportunity to go through all three stages, learning may not occur.

There are a number of benefits to writing a lesson plan. First, lesson planning produces more unified lessons (Jensen, 2001). It gives teachers the opportunity to think deliberately about their choice of lesson objectives, the types of activities that will meet these objectives, the sequence of those activities, the materials needed, how long each, and how students should be grouped. Teachers can reflect on assessment practices.

Planning ahead to identify a course of action that can effectively reach goals and objectives is an important first step in any process, and education is no exception. In education, the planning tool is the lesson plan, which is a detailed description of an instructor's course of instruction for an individual lesson intended to help learners achieve a particular learning objective.

The process of lesson planning can be approached in several ways. Forward, central, and backward design are approaches to curriculum development that are also applicable to lesson planning. Universal Design for Learning intends to address individual differences in learners and to remove barriers to their learning. Forward, Central, and Backward Design refer to the starting point of the planning process and how the process develops.

Forward, central, and backward design are approaches to curriculum development that are also applicable to lesson planning. The term curriculum is used here to refer to the overall plan or design for a course. Forward design is based on the assumption that input, process, and output are related in a linear fashion.

> With central design, planning *starts* with the selection of teaching techniques. Backward design starts with statement of the desired outcomes

---

Unit 03: Need for lesson planning
3.1 planning in teaching
3.2 decisions involved in planning teaching/steps of lesson planning
        3.2.1 outlining learning objectives
        3.2.2 Develop the introduction
        3.2.3 teaching learning activities
        3.2.4 assessment strategies
        3.2.5 Develop a conclusion and a preview
        3.2.6 Create a realistic timeline
3.3 Presenting the Lesson Plan
3.4 Reflecting on Your Lesson Plan

Introduction

Lesson planning is at the heart of being an effective teacher. It is a creative process that allows us to synthesize our understanding of second language acquisition and language teaching pedagogy with our knowledge of our learners, the curriculum, and the teaching context. It is a time when we envision the learning we want to occur and analyze how all the pieces of the learning experience should fit together to make that vision a classroom reality. There are a number of benefits to writing a lesson plan. First, lesson planning produces more unified lessons (Jensen, 2001). It gives teachers the opportunity to think deliberately about their choice of lesson objectives, the types of activities that will meet these objectives, the sequence of those activities, the materials needed, how long each activity might take, and how students should be grouped. Teachers can reflect on the links between one activity and the next, the relationship between the current lesson and any past or future lessons, and the correlation between learning activities and assessment practices. Because the teacher has considered these connections and can now make the connections explicit to learners, the lesson will be more meaningful to them. The lesson planning process allows teachers to evaluate their own knowledge with regards to the content to be taught (Reed & Michaud, 2010). If a teacher has to teach, for example, a complex grammatical structure and is not sure of the rules, the teacher would become aware of this during lesson planning and can take steps to acquire the necessary information.

Further Reading: Importance of Lesson Planning. Retrieved from:
http://www.tesol.org/docs/default-source/books/14002_lesson-planning_ch-1.pdf?sfvrsn=2

Introductory Activity: Show a video to the students about the concept, ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives
After studying this unit, the student will be able to:
3. Understand the importance of planning in teaching
4. Manage teaching time according to lesson
5. Draw learning objectives according to blooms taxonomy

PK Activity: Why it is important for teachers to do lesson planning before teaching?

3.1 Planning in teaching

Lesson planning is a vital component of the teaching-learning process. Proper classroom planning will keep teachers organized and on track while teaching, thus allowing them to teach more, help students reach

objectives more easily and manage less. The better prepared the teacher is, the more likely she/he will be able to handle whatever unexpectedly happens in the lesson.

- provides a framework for efficient teaching.
- helps the teacher to be more organized.
- gives a sense of direction
- helps the teacher to be more confident when delivering the lesson.
- provides a useful basis for future planning.
- helps the teacher to plan lessons which cater for different students.
- Is a proof that the teacher has taken a considerable amount of effort in his/her teaching.

3.2 decisions involved in planning teaching/steps of lesson planning

Planning is imagining the lesson before it happens. This involves prediction, anticipation, sequencing, organising and simplifying. When teachers plan a lesson, they have to make different types of decisions which are related to the following items:

- the aims to be achieved;
- the content to be taught;
- the group to be taught: their background, previous knowledge, age, interests, etc.
- the lessons in the book to be included or skipped;
- the tasks to be presented;
- the resources needed, etc.
- The decisions and final results depend on the teaching situation, the learners' level, needs, interests and the teacher's understanding of how learners learn best, the time and resources available.

3.2.1 Outlining learning objectives

The first step is to determine what you want students to learn and be able to do at the end of class. To help you specify your objectives for student learning, answer the following questions:

- What is the topic of the lesson?
- What do I want students to learn?
- What do I want them to understand and be able to do at the end of class?
- What do I want them to take away from this particular lesson?

Once you outline the learning objectives for the class meeting, rank them in terms of their importance. This step will prepare you for managing class time and accomplishing the more important learning objectives in case you are pressed for time. Consider the following questions:

- What are the most important concepts, ideas, or skills I want students to be able to grasp and apply?
- Why are they important?
- If I ran out of time, which ones could not be omitted?
- And conversely, which ones could I skip if pressed for time?

3.2.2 Develop the introduction

Develop a creative introduction to the topic to stimulate interest and encourage thinking. You can use a variety of approaches to engage students (e.g., personal anecdote, historical event, thought-provoking dilemma, real-world example, short video clip, practical application, probing question, etc.). Consider the following questions when planning your introduction:

- How will I check whether students know anything about the topic or have any preconceived notions about it?
- What are some commonly held ideas (or possibly misconceptions) about this topic that students might be familiar with or might espouse?
- What will I do to introduce the topic?

3.2.3 Planning teaching-learning activities

Prepare several different ways of explaining the material (real-life examples, analogies, visuals, etc.) to catch the attention of more students and appeal to different learning styles. As you plan your examples and activities, estimate how much time you will spend on each. Build in time for extended explanation or discussion, but also be prepared to move on quickly to different applications or problems, and to identify strategies that check for understanding. These questions would help you design the learning activities you will use:

- What will I do to explain the topic?

- What will I do to illustrate the topic in a different way?
- How can I engage students in the topic?
- What are some relevant real-life examples, analogies, or situations that can help students understand the topic?
- What will students need to do to help them understand the topic better?

3.2.4 assessment strategies

Now that you have explained the topic and illustrated it with different examples, you need to check for student understanding – how will you know that students are learning? Think about specific questions you can ask students in order to check for understanding, write them down, and then paraphrase them so that you are prepared to ask the questions in different ways. Try to predict the answers your questions will generate. Decide on whether you want students to respond orally or in writing. You can ask yourself these questions:

- What questions will I ask students to check for understanding?
- What will I have students do to demonstrate that they are following?
- Going back to my list of learning objectives, what activity can I have students do to check whether each of those has been accomplished?

3.2.5 Develop a conclusion and a preview

Go over the material covered in class by summarizing the main points of the lesson. You can do this in a number of ways: you can state the main points yourself ("Today we talked about…"), you can ask a student to help you summarize them, or you can even ask all students to write down on a piece of paper what they think were the main points of the lesson. You can review the students' answers to gauge their understanding of the topic and then explain anything unclear the following class. Conclude the lesson not only by summarizing the main points, but also by previewing the next lesson. How does the topic relate to the one that's coming? This preview will spur students' interest and help them connect the different ideas within a larger context.

3.2.6 Create a realistic timeline

A realistic timeline will reflect your flexibility and readiness to adapt to the specific classroom environment. Here are some strategies for creating a realistic timeline:

- Estimate how much time each of the activities will take, then plan some extra time for each
- When you prepare your lesson plan, next to each activity indicate how much time you expect it will take
- Plan a few minutes at the end of class to answer any remaining questions and to sum up key points
- Plan an extra activity or discussion question in case you have time left
- Be flexible – be ready to adjust your lesson plan to students' needs and focus on what seems to be more productive rather than sticking to your original plan

3.3 Presenting the Lesson Plan

Letting your students know what they will be learning and doing in class will help keep them more engaged and on track. You can share your lesson plan by writing a brief agenda on the board or telling students explicitly what they will be learning and doing in class. You can outline on the board or on a handout the learning objectives for the class.

Providing a meaningful organization of the class time can help students not only remember better, but also follow your presentation and understand the rationale behind in-class activities. Having a clearly visible agenda (e.g., on the board) will also help you and students stay on track.

3.4 Reflecting on Your Lesson Plan

A lesson plan may not work as well as you had expected due to a number of extraneous circumstances. You should not get discouraged – it happens to even the most experienced teachers. Take a few minutes after each class to reflect on what worked well and why, and what you could have done differently. Identifying successful and less successful organization of class time and activities would make it easier to adjust to the contingencies of the classroom. For additional feedback on planning and managing class time, you can use the following resources: student feedback, peer observation, viewing a videotape of your teaching, and consultation with a staff member.

Activity:
✓ How can we improve the quality of our teaching through lesson planning?

✓	Choose any topic of your choice and develop a lesson plan?

Feedback:
- Provide immediate feedback after every activity
- Inform the student what they did and what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct the students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirm that you have been actively listening – this information allows sharing between two people
- Provide the student with suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. Explain blooms' taxonomy. How learning objectives can be formulated according to Blooms' taxonomy? Discuss with examples.
2. What are the major considerations for lesson preparation?

Summary and transition:
- To be effective, the lesson plan does not have to be an exhaustive document that describes each and every possible classroom scenario. Nor does it have to anticipate each and every student's response or question.
- Instead, it should provide you with a general outline of your teaching goals, learning objectives, and means to accomplish them.
- It is a reminder of what you want to do and how you want to do it.
- A productive lesson is not one in which everything goes exactly as planned, but one in which both students and instructor learn from each other

Unit 04: Types of lesson planning
    4.1 Short term plans
        4.1.1 Daily plans
        4.1.2 Weekly plans
    4.2 Long term plans
        4.2.1 Monthly plans
        4.2.2 Yearly Plans
        4.2.3 Scheme of studies

Introduction
The basics of early childhood education are to respect the life of a child and to promote his/her voluntary activities. However, respecting children's voluntariness does not mean to leave them to play as they like. Teachers should care for children within the objectives and perspectives of education. The curriculum is a holistic educational plan which is formulated with the intention of achieving specific aims throughout a child's life at kindergarten. On the other hand, as is stated below, instruction plans are formulated more concretely in order to achieve the aims stipulated in the curriculum. They show 'when' and 'what kind of activities' children do with the aim of promoting their development and active life. Try hard to understand about children, and especially recognize their interests, attitudes toward their life or play, and relationships with teachers and other children. And so instruction plans should be formulated so that children can have experiences appropriate for their age or development stage. Teachers formulate instruction plans by setting objectives and curriculum content so that the curriculum is put into practice, creating an environment that enables children to achieve the objectives and curriculum content and making sure that teachers' support leads the activities in a favorable direction.

Introductory Activity: Show a video to the students about the concept, ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives
After studying this unit, the student will be able to:
5. Develop short term and long term plans according to the requirement of teaching
6. Develop scheme of studies to manage course contents and activities

PK Activity:
✓ How teachers have to plan for teaching?
✓ You have mostly drafted daily lesson plans to plan daily lectures at this stage but have you ever observed other types of lesson plans covering weekly or monthly planning?

There are two types of instruction plans
4.1 Instruction Plans: Short-Term Plans
.Weekly plan
Daily plans.

4.2 Instruction Plans: Long-Term Plans
yearly plan
monthly plans

Teachers think about and write down the following three aspects, in the form appropriate for the characteristics of each plan:
- Contents of activities: what you hope children will experience.
- Objectives of curriculum content: aspects expected to be developed through the activities.
- Creation of the environment: how to provide an appropriate environment to achieve the objectives of curriculum content.

It should be remembered that instruction plans are merely 'plans'. If teachers stick to those plans but the education has little to do with the realities of the children's lives, they cannot promote proper development. It is important for teachers to be sensitive to the changes in children's interests, attitudes towards their life or play, relationships with teachers or other children, or changes of weather/temperature and then flexibly modify or change plans.

Further Reading: 3 Formulation of an instruction plan (Daily/ Weekly/Monthly /Yearly). Early Childhood Education Handbook Research Center for Child and Adolescent Development and Education Ochanomizu University. Retrieved from:
http://www.ocha.ac.jp/intl/cwed_old/eccd/report/hand_E/2-3e.pdf

4.2.3 How Scheme of Studies be formulated weekly

A scheme of work is "a plan for something". A teacher's scheme of work is therefore his plan of action which should enable him/her to organize teaching activities ahead of time. It is a summarized forecast of work which the teacher considers adequate and appropriate for the class to cover within a given period from those topics which are already set in the syllabus.

well prepared scheme of work should among other things:-

- Give an overview of the total course content.
- Provide for a sequential listing of learning tasks.
- Show a relationship between content and support materials.

447

- Provide a basis for: long range planning, training and evaluation of the course.

A scheme of work can be made to cover one week, one month, one term or even one year, depending on the duration of a given program. Most programs in our educational institutions take between one and four years. Each year is divided into 3 terms with each term lasting 3 months or 13 weeks. In such a case a scheme of work should be made for each term (13 weeks). Ideally schemes of work should be prepared before classes begin.

Further Reading: Handout 10. Scheme of Work Preparation Trainer's Handbook - A 14 days Teaching Methodology Course (GTZ, 190 p.) Retrieved from: http://www.nzdl.org/gsdlmod?e=d-00000-00---off-0fnl2%2E2--00-0----0-10-0---0---0direct-10---4-------0-1l--11-en-50---20-about---00-0-1-00-0--4----0-0-11-10-0utfZz-8-00&cl=CL2.6&d=HASH931fe16befd87926191fd4.7.10.1&x=1

Activity:
- ✓ Ask your students to observe short-term and long-terms lesson plans developed in their institution and develop a sample of short term plan and long-term plan.
- ✓ Observe scheme of studies of various programs offered by your institute and write your reflections about it.
- ✓ Take any course of your choice and develop a sample of scheme of studies.

Feedback:
- Provide immediate feedback after every activity
- Inform the student what they did and what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct the students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirm that you have been actively listening – this information allows sharing between two people
- Provide the student with suggestions, recommendations, and information to correct their performance

---

Unit Exercise

1. What is the difference between short-term and long-term plans?
2. Take any subject and topic of your choice and draw a sample of following types of plans.
   a. weekly plan
   b. Daily plan
   c. Unit plan,
   d. Course plan

Summary and transition:
There are two types of instruction plans:
- long-term instruction plans: yearly and monthly plans
- short-term instruction plans: weekly and daily plans.

A scheme of study is "a plan for something". A teacher's scheme of work is therefore his plan of action which should enable him/her to organize teaching activities ahead of time.

A scheme of work can be made to cover one week, one month, one term or even one year, depending on the duration of a program. Ideally scheme of studies should be prepared before classes begin.

<div style="border: 2px solid black; padding: 10px;">

Module 05: Instructional Technologies

Unit 01 Instructional technology

       2.1 definition and concept of Instructional technology

       2.2 history of instructional technology

       2.3 rational of using instructional technology

Unit 02 Planning, Selecting, and Using Instructional technology

       3.1 Planning of Instructional technology

       3.2 Selection of Instructional technology

       3.3 Uses of Instructional technology

Unit 03 Types/kinds of instructional technology

       4.1 Electronic (Radio, TV, Projectors and Computers)

       4.2 Non electronic (Boards, Charts, Models, Posters, etc.)

       4.3 Print (Books, Journals, Newspapers and Magazines etc.)

       4.4 Social media (Facebook, Tweeter etc.)

</div>

Introduction:

In the classical theory of paradigm shifts (Kuhn 1970) there is a period when new paradigms emerge that challenge traditional and wide spread beliefs and approaches. At the heart of any new paradigm are ideas that challenge accepted assumptions along with emerging technologies that dramatically raise possibilities that could not be imagined within the old paradigm. This would appear to be what is happening as online and blended learning ideas have begun to shift the thinking and practice of educators and leaders in higher education. Collaborative constructivist teaching and learning ideas have come to the fore as the affordances of emerging technologies create design possibilities that make such approaches to learning practical. While new and emerging information and technological tools are a catalyst for new educational paradigms, it is the convergence of the valued idea of collaborative constructivist approaches and new communications technology that has given life to online and blended learning in higher education.

<div style="border: 1px solid black; padding: 5px;">

Further Reading: Garrison, D. R. & Akyol, Z. (2009) Role of instructional technology in the transformation of higher education. Springer Science+Business Media, LLC 2009.   Retrieved from: https://www.researchgate.net/publication/220316444_Role_of_instructional_technology_in_the_transfor mation_of_higher_education/link/57a0e0e108aeef8f311c79ff/download

</div>

<div style="border: 1px solid black; padding: 5px;">

Module Objectives:

After studying this module, the student will be able to:

7.   understand the basic concept and importance of instructional technology and its importance.

8.   distinguish between the electronic, display and print media.

9.   prepare and use of inexpensive aids for teaching

</div>

<div style="border: 1px solid black; padding: 5px;">

Unit 01 Instructional technology

       1.1 Definition and concept of Instructional technology

       1.2 History of instructional technology

       1.3 Rational of using instructional technology

</div>

Introduction

Instructional Technology is a systematic process used to design, manage, and evaluate various ways of presenting various subject matter in order to enhance teaching and learning. It is the process of creating a learning system that caters to an individuals learning style by using technological resources. It is the process of using technological tools to meet learning objectives.

<div style="border: 1px solid black; padding: 5px;">

Introductory Activity: Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

</div>

Unit Objectives:

After studying this unit students will be able to:

1. understand the concept of Instructional technology
2. analyze the development of instructional technology in historical perspective
3. conceptualize the importance and need of using instructional technology

PK Activity:

- Have you ever experienced learning through various teaching aids and technologies in classroom? Which instructional materials/media or A.V aids your teachers mostly use during class? Ask students to share their experience

1.1 Definition and Concept of instructional/educational technology

The term educational technology is often associated with, and encompasses, instructional theory and learning theory. While instructional technology covers the processes and systems of learning and instruction, educational technology includes other systems used in the process of developing human capability. Educational Technology includes, but is not limited to, software, hardware, as well as Internet applications and activities. Educational technology is most simply and comfortably defined as an array of tools that might prove helpful in advancing student learning. Educational Technology relies on a broad definition of the word "technology". Technology can refer to material objects of use to humanity, such as machines or hardware, but it can also encompass broader themes, including systems, methods of organization, and techniques. Some modern tools include but are not limited to overhead projectors, laptop computers, and calculators. Newer tools such as "smart phones" and games (both online and offline) are beginning to draw serious attention for their learning potential. Those who employ educational technologies to explore ideas and communicate meaning are learners or teachers.

According to the Handbook of Human Performance Technology, the word technology for the sister fields of Educational and Human Performance Technology means "applied science." In other words, any valid and reliable process or procedure that is derived from basic research using the "scientific method" is considered a "technology." Educational Technology may be based purely on algorithmic or heuristic processes, but neither necessarily implies physical technology. The word technology comes from the Greek "techne" which means craft or art. Another word, "technique," with the same origin, also may be used when considering the field Educational Technology. So Educational Technology may be extended to include the techniques of the educator.

Further Reading: Definition of Instructional Technology. Retrieved from:
http://arcmit01.uncw.edu/andersonl/Documents/Definition%20of%20Instructional%20Technology.pdf

Instructional technology is a field that is constantly undergoing change. It is a dynamic field that changes within each environment. In 1963the Association for Educational Communications and
Technology (AECT) attempted to define the field as: "Audiovisual communications is the branch of educational theory and practice concerned with the design and use of messages which control the learning process. It undertakes: (a) the study of the unique and relative strengths and weaknesses of both pictorial and nonrepresentational messages which may be employed in the learning process for any reason; and (b) the structuring and systematizing of messages by men and instruments in an educational environment. These undertakings include planning, production, selection, management, and utilization of both components and entire instructional systems. Its practical goal is the efficient utilization of every method and medium of communication which can contribute to the development of the learners' full potential" (Ely, 1963, pp. 18-19)

Further Reading: Definition of the Field of Instructional Technology: History and Evolution of the Definition retrieved from: http://arcmit01.uncw.edu/erg1602/Definition.pdf

1.2 History of Instructional Technology:

The movement towards educational technology began to develop after World War II. Initially the term meant using audiovisual communications media. However, the field of educational technology began to focus on the development of teaching and learning procedures borrowed from behavioural psychology. Today, the field also incorporates cognitive psychology, social psychology, psychometrics, perception psychology and management. Educational technology has under its preview the following aspects:

- Design of instruction
- Production of instructional products and services
- Management of instruction
- Evaluation of instruction

The field is essentially a 20th century movement with the major developments occurring during and immediately after World War II. What began with an emphasis on audiovisual communications media gradually became focused on the systematic development of teaching and learning procedures which were based in behavioral psychology. Currently, major contributing fields are cognitive psychology, social psychology, psychometrics, perception psychology, and management.

Further Reading:
Treat, A. R., Wang, Y., Chadha, R. & Dixon, M. H.(2006) Major Developments in Instructional Technology: During the 20th Century Department of Instructional Systems Technology Indiana University. Retrieved from: http://www.indiana.edu/~idt/shortpapers/documents/ITduring20.html

1.3 Rational of using instructional technology

Today, more than ever, the role of educational technology in teaching is of great importance because of the use of information and communication technologies. With the help of various applications for distance education, the Internet, teachers, and students themselves, they see the advantage of educational technology. Educational technology is a systematic and organized process of applying modern technology to improve the quality of education (efficiency, optimal, true, etc.). It is a systematic way of conceptualizing the execution and evaluation of the educational process, i. e. learning and teaching and help with the application of modern educational teaching techniques. It includes instructional materials, methods and organization of work and relationships, i.e. the behavior of all participants in the educational process. Educational technology has three domains of use:

- Technology as a tutor (computer gives instructions and guides the user),
- Technology as a teaching tool and
- Technology as a learning tool.

Further Reading:
Stošić, L. (2015) The Importance of Educational Technology in Teaching (IJCRSEE) International Journal of Cognitive Research in Science, Engineering and Education Vol. 3, No.1, 2015. https://www.researchgate.net/publication/278848636_The_importance_of_educational_technology_in_t eaching/link/5586fb4208aef58c03a0292b/download

Activity:
- Search any five latest definitions of instructional technology and deliver a presentation.
- Develop a timeline of the history of instructional technology

Feedback:
- Ask learners to recall the concepts.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer

451

- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. Explain the basic concept and importance of instructional technology in teaching and learning process
2. Critically analyze the development of instructional technology in historical perspective
3. Discuss the importance and need of using instructional technology in teaching and learning process

Summary and transition:
- Instructional Technology is a systematic process used to design, manage, and evaluate various ways of presenting various subject matter in order to enhance teaching and learning
- Educational Technology includes, but is not limited to, software, hardware, as well as Internet applications and activities.
- The field is essentially a 20th century movement with the major developments occurring during and immediately after World War II.
- Currently, major contributing fields are cognitive psychology, social psychology, psychometrics, perception psychology, and management.

Unit 02: Planning, Selecting, and Using Instructional technology
2.1 Planning of Instructional technology
2.2 Selection of Instructional technology
2.3 Uses of Instructional technology

Introduction:
The 1990s began an increasing emphasis on teaching with technology, in particular a push for fully online courses. Now more than a decade into the twenty-first century, however, we are still trying to figure out not only which technologies to use but how, when, and why to use them in the classroom.

Further Reading:
Mitchell, R. G. (2011) Planning for Instructional Technology in the Classroom. New Directions for Community Colleges, no. 154, Summer 2011 © 2011 Wiley Periodicals, Inc. Published online in Wiley Online Library (wileyonlinelibrary.com) • DOI: 10.1002/cc.445 Retrieved from: https://onlinelibrary.wiley.com/doi/pdf/10.1002/cc.445

Introductory Activity: Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

Unit Objectives:
After studying this unit students will be able to:
4. Plan of Instructional technology for teaching and learning
5. Select of Instructional technology for teaching students
6. Use Instructional technology to facilitate teaching and learning process and students learning

PK Activity:
If you are going to deliver a lesson by using various technologies how you will plan for it? Ask students to make a planning checklist and discuss.

2.1 Planning Visual Media
Following points need to be considered during selection of instructional technologies
- What are the objectives of the session?

452

- What methods will facilitate these objectives?
- Who is the audience?
- What does the learner currently know about this subject?
- What are the purposes of the visuals?
- How do visuals reinforce the information
- How will you evaluate the session's effectiveness including visuals?

Various models can also be consulted for planning instructional media:
ASSURE model
- Analyze your learners
- State your objective(s)
- Select and design your media
- Utilize the media
- Require a learner response
- Evaluate the effect of the media

The ADDIE Model
- Analysis – in this phase you simply think through what you want to do.
- Design- you create a blueprint for your course on paper.
- Develop – develop any remaining content and begin to build the course.
- Implement- in this phase you begin instruction.
- Evaluate – in this phase you will evaluate your course design by looking how well your audience achieved the stated learning outcomes

2.2 Selection of instructional media
There are plenty of models for media selection. Romiszowski (1988) provides a good example of a systems approach to instructional design and media selection. Reiser and Gagne (1983) discussed ten models of media selection and identified a number of common characteristics of such theoretical models. There are several problems, though, with applying most models to the use of technology in teaching. First, most concentrate primarily in matching a particular medium to a particular, fairly short, instructional event, such as reading a map. In such models, the teaching or learning process is fragmented into basic elements of activity (for example, understanding the symbols on a map) against which a particular medium is selected.

The usual method is to adopt an algorithmic, reductionist approach to decision making, requiring many different media for even a small amount of teaching (for example, a map uses symbols, therefore graphics are needed to represent each symbol and text or audio are required to provide an explanation of each symbol). In reality, it is not practical for a teacher to go through all the individual activities in a single lesson and make this kind of analysis. Also, in such models the rules or criteria for matching a medium to a task are not usually spelled out. It is intuitive that a graphic will be needed to represent a symbol on a map, and there is no theoretical basis to explain why text might be better than audio (or vice versa) for explanation of the symbol. Furthermore, these models rarely deal with non-instructional, practical issues, such as costs and organizational requirements.

> **Further Reading:** Bates, A. W., & Poole. G. (2003). A framework for selecting and using technology. In Effectil'e teaching with technology in higher education: Foundations/or success (pp. 75-105). San Francisco: John Wiley & Sons, Inc. retrieved from: http://www.linqed.net/media/3164/2003_Bates_Poole_Sections_framework_selecting_and_using_techn ology.pdf

Instructional media cannot teach by themselves, they need skillful teaching to make them effective.
Selecting the materials involves following considerations:
- appropriateness and effectiveness
- availability
- appeal
- technical quality

- cost
- Learning outcomes
- Instructional Strategies
- Types of Technology Tool
- Tool Advantages
- Tool Disadvantages

Reading:
http://www.aect.org/pdf/proceedings13/2013i/13_16.pdf

2.3 Use of instructional media

The use of information and communication technology (ICT) in schools has increased dramatically in recent years (Orlando, 2014). This has been driven by the recognition that students need to be skilled in the use of these technologies in order to participate effectively in an increasingly digital world (Buabeng-Andoh, 2012; De Bortoli, Buckley, Underwood, O'Grady & Gebhardt, 2013); as well as a growing awareness of the benefits of digital technology for learning (Dwyer, 2007); and policies and programs aimed at increasing students' access to and use of ICT (Dandolo Partners, 2013; Moyle, 2010), such as the government-funded Digital Education Revolution (DER) reform package (2008–13) and school 'Bring Your Own Device (BYOD) programs'.

Further Reading: Vassallo, S., and Warren, D. (2018) Use of technology in the classroom LSAC Annual Statistical Report 2017, Australian Institute of Family Studies.
https://www.researchgate.net/publication/329718398_Use_of_technology_in_the_classroom/link/5c181 54792851c39ebf52376/download

Activity: Select any topic and class, design a lesson and develop a checklist of planning, selecting and using instructional technology according to ADDIE and ASSURE models

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. What are the criteria of planning and selecting appropriate instructional media for effective classroom teaching? Discuss
2. How teachers can effectively use Instructional technology to facilitate teaching and learning process and students learning

Summary and transition:
- Instructional media cannot teach by themselves, they need skillful teaching to make them effective.
- There are plenty of models for media selection
- Selecting the materials involves appropriateness and effectiveness, availability, appeal, technical quality and cost of the material
- Use of instructional technology improves student motivation, attitude, and interest in learning and help to prepare students for the workforce

- Instructional technology facilitates to address the needs of low performing, at-risk, and learning disabled students

Unit 03 Types/kinds of instructional technology
4.1 Electronic (Radio, TV, Projectors and Computers)
4.2 Non electronic (Boards, Charts, Models, Posters, etc.)
4.3 Print (Books, Journals, Newspapers and Magazines etc.)
4.4 Social media (Facebook, Tweeter etc.)

Introduction

Different types of educational experiences exist - from hands on apprenticeships to role-playing, from demonstrations to reading printed text. Some educators believe that different experiences are more or less effective for achieving different types of instructional outcomes. For example, text with pictures is not as effective as live demonstrations for teaching motor skills. Instructors who are considering the use of media should ask themselves, "How do I expect the media or type of learning activity to make learning more effective?"

- Types of Instructional Media
- Why Use Media in Instruction?
- Media Used to Enhance Presentations
- General Presentation Guidelines
- Instructional Strategies Involving Media
- Resources on the Use of Media

Introductory Activity: Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

Unit Objectives:
After studying this unit students will be able to:
9.   Identify the types of instructional technology
10. Differentiate the uses of various instructional technologies according to the teaching learning situation
11. Prepare basic visual aids for teaching
12. Evaluate the effectives of using various instructional technologies in teaching and learning process

4.1 Electronic
- Audio Aids:
    - Radio
    - Phonograph
    - Tape recorders
    - Audio cassettes
    - Audio CDS
    - CD Players
    - Speakers and headsets
- Audio visual aids
    - Motion pictures
    - Television
    - Videotapes
    - VCR
    - DVDs
    - Computers

4.2 Non electronic Visual Aids
- Chalkboard
- felt boards and flannel boards
- Still Pictures
    - o   Non-projected

455

- Photographs
- illustrations
- Projected Pictures
  - Slides
  - Filmstrips
  - opaque projections
  - overhead projections
  - Transparencies
- Graphic Materials
  - Charts
  - Tables
  - Graphs
  - Maps and globes
  - Posters
  - Drawings
  - Photographs
- Diagrams
- Tables
  - Word tables
  - Numeric data tables
- Charts
  - Organization charts
  - Flow charts
  - Pie charts
- Graphs
  - Bar graphs
  - Line graphs
- Objects
  - specimen
  - real objects
  - models

4.3 Printed material
- Textbook
- Supplemental Materials
  - Workbooks
  - Duplicated outlines
  - teacher-prepared study guide
  - reference books
  - pamphlets
  - magazine articles
  - newspapers

4.4 Social media (Face book, Tweeter etc.)
The rapid growth of social media, mainly due to technological factors such as increased broadband availability, the improvement of software tools, and the development of more powerful computers and mobile devices, has been phenomenal. This type of media has actually become ubiquitous and part and parcel of the daily lives of millions of people around the globe and has a tremendous impact upon every facet of our personal and professional lives. Given that a large number of internet users are teachers and students, social media seem to have greatly influenced the way we teach and learn. Social media encompass a wide range of tools that integrate technology, social interaction and content creation. These include social networks, blogs, micro-blogs, wikis, bookmarking, media sharing and RSS.

Exhibits
1. school- made displays
2. bulletin boards
3. museums

Edgar Dale's "Cone of Experience"

Dale's Cone of Experience is a model that incorporates several theories related to instructional design and learning processes. During the 1960s, Edgar Dale theorized that learners retain more information by what they "do" as opposed to what is "heard", "read" or "observed". His research led to the development of the Cone of Experience. Today, this "learning by doing" has become known as "experiential learning" or "action learning".
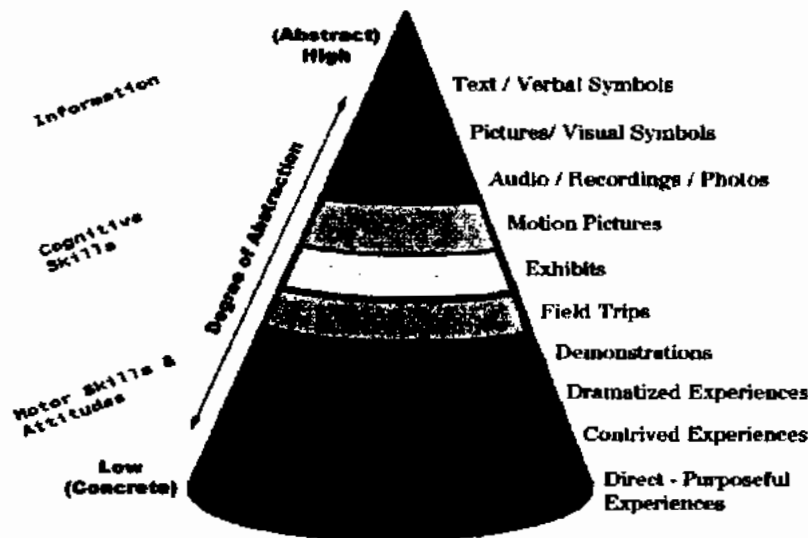
Graphic courtesy of Edward L. Counts, Jr.

The diagram shows how Edgar Dale's "Cone of Experience" (1969) - organized learning experiences according to the degree of concreteness each possesses. At the bottom is handson experience. As you ascend the cone, concrete experience begins to drop out, with stimuli becoming more abstract; the stimuli require more skill on the part of the learners to interpret the messages they carry. You can see why lectures, even illustrated lectures, are considered to be some of the most abstract types of presentations. For certain types of learning (such as changing attitudes or teaching motor skills), experiences at the bottom of the cone are more appropriate than those at the top. Learning experiences at the bottom of the cone tend to hold student attention longer and involve active student participation. Media at the top of the cone are said to be more passive but are suitable for transmitting large amounts of information quickly. Which is best depends upon your purposes and circumstances. While the Web is becoming popular for distributing other types of mediated messages, it is not always practical, and other types of media are more appropriate.

Reading:
https://distance.fsu.edu/docs/instruction_at_fsu/Chptr9.pdf

Activity:
✓ Design a lesson by applying Dale cone of learning.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise
1. How teachers can prepare and use inexpensive aids for teaching? Discuss
2. Differentiate the uses of various instructional technologies according to the teaching learning situation with practical examples
3. How teachers can evaluate the effectives of using various instructional technologies in teaching and learning process

Summary and transition:
- Instructional media cannot teach by themselves, they need skillful teaching to make them effective.
- There are plenty of models for media selection
- Selecting the materials involves appropriateness and effectiveness, availability, appeal, technical quality and cost of the material
- Use of instructional technology improves student motivation, attitude, and interest in learning and help to prepare students for the workforce
- Instructional technology facilitates to address the needs of low performing, at-risk, and learning disabled students

> **Module 06: Classroom Management**
> **Unit 1 Concept of Classroom management**
> 1.1 Classroom management
> 1.2 Classroom organization
> 1.3 Teacher as a manager
> **Unit 2 Positive class-room environment**
> 2.1 Classroom seating arrangement
> 2.2 Classroom Climate
> 2.3 Classroom decoration
> 2.4 Classroom discipline
> **Unit 3 Classroom management styles**
> 3.1 Authoritarian style
> 3.2 Authoritative style
> 3.3 Indifferent style
> 3.4 Indulgent/Laissez – Faire
> **Unit 4 Managing difficult behaviors**
> 4.1 What is behavior
> 4.2 Behavior modification techniques

Introduction:

Classroom management refers to the wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a class. When classroom-management strategies are executed effectively, teachers minimize the behaviors that impede learning for both individual students and groups of students, while maximizing the behaviors that facilitate or enhance learning. Generally speaking, effective teachers tend to display strong classroom-management skills, while the hallmark of the inexperienced or less effective teacher is a disorderly classroom filled with students who are not working or paying attention.

> **Further Reading:** Classroom Management. The Glossary of Education Reform (2014) retrieved from:
> https://www.edglossary.org/classroom-management/

> **Module objectives**
> After studying this unit, the student will be able to:
> 8. understand the basic concept of management.
> 9. distinguish between the term management and classroom management.
> 10. Apply the class-room management techniques to develope positive classroom environmnt
> 11. Describe the importance of classroom decoration to establish effective classroom climate

> **Unit 1 Concept of Classroom management**
> 1.1 Classroom management
> 1.2 Classroom organization
> 1.3 Teacher as a manager

Introduction

Classroom management is the process by which teachers and schools create and maintain appropriate behavior of students in classroom settings. The purpose of implementing classroom management strategies is to enhance prosocial behavior and increase student academic engagement (Emmer & Sabornie, 2015; Everston & Weinstein, 2006). Effective classroom management principles work across almost all subject areas and grade levels (Brophy, 2006; Lewis, et al., 2006).

Unit objectives
After studying this unit, the student will be able to:
- Conceptualize the concept of classroom management
- Compare classroom management and organization
- Develop skills as a classroom manager and organizer

Introductory Activity: Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

PK Activity:
- What is your idea about management?
- What is your idea about classroom management?
- Think about your classroom situation and reflect how your teachers manage your classrooms.

1.1 Classroom Management
Management focuses on students' conduct and behavior disciplinary rules, routine, procedures strategies etc. It is a process of coordinating work activities so that they completed efficiently and effectively with and through other people. Following functions are involved in management:
1. Planning: defining goals, establishing overall strategies, develop a comprehensive plan to achieve those objectives and coordinate activities
2. Organizing: Determining what needs to be done, how it will be done, ad who is to do it
3. Leading: directing and motivating all involved parties, and resolving conflicts
4. Controlling: monitoring the goals to ensure that they are achieved as planned

1.2 Classroom Organization
Classroom Organization focuses on the physical environment. Effective teachers organize a safe classroom environment (Educational Review Office, 1998). They strategically place furniture, learning centers, and materials in order to optimize student learning and reduce distractions.
Classroom organization is important for teachers to do their work well. It consists of:
1. Classroom routine
2. Classroom layout
3. Decoration and wall display
4. Special jobs for children
5. Classroom cleaning
6. Behaviour - good class habits for teachers and children

Further Reading:
- Classroom Organization. Vanuatu Primary School Head Teachers' Manual Retrieved from: https://moet.gov.vu/docs/handbooks/Classroom%20Organisation_10.pdf
- Handbook for Qualities of Effective Teachers by James H. Stronge, Pamela D. Tucker and Jennifer L. Hindman Retrieved from: http://www.ascd.org/publications/books/104135/chapters/Classroom-Management-and-Organization.aspx

1.3 Teacher as a manager
Teachers play various roles in a typical classroom, but surely one of the most important is that of classroom manager. Effective teaching and learning cannot take place in a poorly managed classroom. Effective

teachers appear to be effective with students of all achievement levels regardless of the levels of heterogeneity in their classes. If the teacher is ineffective, students under that teacher's tutelage, will achieve inadequate progress academically, regardless of how similar or different they are regarding their academic achievement.

Further Reading: Evertson C. M., Emmer, E. T., and Worsham, M. E. (2006) *Classroom Management for Elementary Teachers*, Seventh Edition, Pearson Education, Boston, Retrieved from: Classroom Management Guide. The Critical Role of Classroom Management. University of Northern Colorado.https://www.unco.edu/cebs/teacher-education/undergraduate-programs/classroom_management.aspx

Activity:
- List your ideas about the classroom management vs classroom organization
- Develop a classroom management and organization plan.

Feedback:
- Ask learners to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. Compare the concepts of classroom management and organization with examples.
2. Which skills are required for a good classroom manager and organizer? Discuss with examples.

Summary and transition:

Management focuses on students' conduct and behavior disciplinary rules, routine, procedures strategies etc. It is a process of coordinating work activities so that they completed efficiently and effectively with and through other people.

Classroom Organization focuses on the physical environment. Effective teachers organize a safe classroom environment (Educational Review Office, 1998). They strategically place furniture, learning centers, and materials in order to optimize student learning and reduce distractions.

Teachers play various roles in a typical classroom, but surely one of the most important is that of classroom manager. Effective teaching and learning cannot take place in a poorly managed classroom.

Unit 2: Positive class-room environment
2.1 Classroom seating arrangement
2.2 Classroom Climate
2.3 Classroom decoration
2.4 Classroom discipline

Introduction

Classroom Management is about procedures becoming routines. Management can be enhanced when procedures are explained to students, modeled for students, practiced by students, and reinforced by practicing again and again. Procedures, that are learned, establish routines and routines give structure to instruction. Implementation of the following strategies leads to a positive, productive learning environment.

- Establish a well-organized and structured classroom environment that promotes concentration, study, and learning
- Create an environment where students feel free and/or safe to make mistakes
- Design a friendly, accepting atmosphere where students and teachers treat each other with respect and mutual support
- Arrange the classroom furniture to allow the teacher quick access to each student
- Maintain the best air flow to keep students comfortable and alert
- Play soft music to create a calm, relaxed pace, and tone for the classroom when appropriate
- Use clarity when giving directions and deliver instruction in an organized manner to avoid confusion as confusion leads to problems and problems lead to misbehavior
- Establish communication with parents for sharing information, developing interest, soliciting help and cooperation, and creating accountability
- Get to know students as soon as possible and use their names when addressing them
- Stand at or near the entrance to the classroom and greet students upon entry
- Teach and practice housekeeping procedures (e.g., turning in assignments, homework procedures, restroom protocol, sharpening pencils, trash disposal)
- Teach expectations in a formal manner through modeling, role-playing, and repeated practice beginning on the first day of school
- State expected behaviors clearly by defining what the behaviors should look like and sound like
- Post rules and/or expectations using visual and written prompts and refer to them frequently
- Maintain a visual schedule and refer to the schedule often
- Provide verbal and nonverbal signals to remind students of rules and expectations at the beginning of a lesson or activity
- Use positive statements to reinforce desired behavior (e.g., "Great job working with your partner and completing the task on time.")
- Give sincere praise often
- Use gentle reminders to address inappropriate behavior
- Use a calm, firm voice when redirecting a student
- Utilize humor as opposed to reaction to de-escalate potential problems
- Avoid sarcasm, criticism, threats, and arguments to prevent students from feeling trapped
- Refrain from taking misbehavior personally which could impair good judgment
- Conference with a student privately when conversing about misbehavior
- Engage in active supervision by interacting with students while walking around the room and amongst the students
- Teach students self-management skills and support those who tend to struggle
- Use signals to gain or redirect attention of students (e.g., clapping pattern, playing music, raising hand)
- Assign peer partners to provide student support as needed
- Prepare students in advance on how to work in groups or with partners by explaining the expectations/procedures of the assigned task and individual roles within the group
- Alternate between active and passive activities to promote a high level of student engagement
- Scan room frequently, remain cognizant of what students are doing at all times, and provide specific feedback
- Have efficient transition procedures in place
- Remind students of upcoming transitions or of any changes in the schedule
- Compliment students verbally for compliance with expectations

462

Further Reading:
- Evertson C. M., Emmer, E. T., and Worsham, M. E. (2006) *Classroom Management for Elementary Teachers*, Seventh Edition, Pearson Education, Boston
- http://ceed.umn.edu/wp-content/uploads/2017/05/Positive-Classroom-Environment-and-StudentTeacher-Rapport.pdf

Unit objectives
After studying this unit, the student will be able to:
- identify variables of effective classroom environment
- develop positive classroom climate in class
- Conceptualize the importance of classroom decoration
- Develop rules and regulations to maintain classroom discipline.

Introductory Activity: Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

PK Activity:
- What is your idea about classroom environment?
- Think about your classroom situation and reflect what type of classroom environment teachers create for your class?

2.1 Classroom seating arrangement

As Fred Jones, a noted classroom management experts explains: "A good classroom seating arrangement is the cheapest form of classroom management. It's discipline for free." Many experienced teachers recommend assigned seating for students to facilitate discipline and instruction. They argue that students left to their own devices will always choose a seat that places the teacher at the greatest disadvantage. Best practices suggest a few common-sense rules to guide classroom arrangements.

- Students should be seated where their attention is directed toward the teacher.
- High traffic areas should be free from congestion
- Students should be able to clearly see chalk board, screens, and teacher.
- Students should be seated facing the front of the room and away from the windows.
- Classroom arrangements should be flexible to accommodate a variety of teaching activities
- Place the teacher's desk in a low-traffic area or near the door if there is a need to control in-andout student traffic.
- Organize students in circles if interaction by the students is sought.
- Organize students in rows or a straight-sided U shape ( ) for teacher-led instruction.
- Provide for quiet independent work areas (e.g., beanbag chairs, books, headphones).
- Provide for small-group work centers and/or reward areas
- Plan for easy access to materials by the teacher and the students.
- Plan for a smooth traffic flow to enable students to move around without disrupting others.

Further Reading:
https://www.sensepublishers.com/media/2531-a-guide-to-promoting-positive-classroom-environment.pdf

2.2 Classroom Climate

Amborse *et. al.* (2010) define classroom climate as "the intellectual, social, emotional, and physical environments in which our students learn. Climate is determined by a constellation of interacting factors that include faculty-student interaction, the tone instructors set, instances of stereotyping or tokenism, the course

463

demographics (for example, relative size of racial and other social groups enrolled in the course), student-student interaction, and the range of perspectives represented in the course content and materials".

Why is classroom climate important?
Classroom climate is affected not only by blatant instances of inequality directed towards a person or group of people, but also by smaller, more subtle "micro-inequities" that can accumulate to have significant negative impacts on learning (Hall, 1982).
Incivilities that are not addressed properly not only negatively impact learning within the course in which it is experienced, but may also negatively influence a student's success at an institution (Hirschy & Braxton, 2004).

What factors influence classroom climate?
The following is borrowed heavily from Ambrose *et. al.* (2010, p. 173-179).
- **Stereotypes** cause alienation and marginalization among those who are the target of unfair generalizations. In fact, just the threat of stereotypes, what Steele & Aronson (1995) tokened "stereotype threat," can impact learning negatively. Students who have experienced stereotypes or expect to be viewed or judged in a certain way may encounter tensions and cognitive disturbances that interfere with learning.
- **The tone** of a class environment is influenced strongly by the instructor. Studies show that students approach faculty who express encouragement more so than faculty who come off as punitive. Tone can be set by instructors through their interactions with students and through other modes of communication including syllabus.
- **Student-student interactions** during and outside of class affect the overall climate. However, the ways in which instructors and those in authority deal with negative interactions has more of an impact on student learning.
- **Faculty-student interactions** also play a role. Students who felt that their instructor was approachable, had concern for minority student issues and treated students as individuals and with respect reported a better course climate (Astin, 1993).
- **Content** includes the course materials, examples and metaphors, case studies and project assignments used to illustrate the ideas being taught. Content that includes a variety of perspectives or is representative of multiple views is more conducive to a positive climate.

> **Further Reading:**
> - Helping Teachers Learn The Secrets Of Successful Classroom Management. (1994) Prentice Hall
> - http://www.dlsu.edu.ph/conferences/dlsu_research_congress/2014/_pdf/proceedings/LLI-I-003-FT.pdf

Promoting a Positive Classroom Climate:
A proactive approach to developing a positive classroom climate requires careful attention to (1) enhancing the quality of life in the classroom for students and staff, (2) pursuing a curriculum that promotes riot only academic, but also social, and emotional learning, (3) enabling teachers to be effective with a wide range of students, and (4) fostering intrinsic motivation for classroom learning and teaching. With respect to all this, the literature advocates:
- a welcoming, caring, and hopeful atmosphere;
- social support mechanisms for students and staff,
- an array of options for pursuing goals;
- meaningful participation by students and staff in decision Making;
- transforming a big, classroom into a set of smaller units that maximize intrinsic motivation for learning and are not based on ability or problem-oriented grouping-,
- providing instruction and responding to problems in a personalized way;
- use of a variety of strategies for preventing and addressing problems as soon as they arise;

- a healthy and attractive physical environment that is conducive to learning and teaching.

Further Reading: delman, H. S. & Taylor, L. (in press). Classroom climate. In S. W. Lee, P. A. Lowe, & E Robinson (Eds.),Encyclopedia of School Psychology. Thousand Oaks, CA: Sage. Retrieved from: **https://www.isbe.net/documents/clsrm-climate.pdf**

2.3 Classroom Decoration

The first thing you notice when walking into a classroom – especially an elementary classroom – is how it looks and how it is set up. Although it may not seem very important, the design of a classroom is crucial to a student's education. The design of the classroom affects student behavior and work ethic.

Further Reading:
- Thomsen, S. (2014) The Importance of Classroom Design. Journal on Best Teaching Practices. http://teachingonpurpose.org/wp-content/uploads/2015/03/Thomsen-S.-2014.-The-Importance-of-Classroom-Design.pdf
- Classroom Design and Routines Completely Kindergarten - Kindergarten Curriculum Guide - Interim Edition. Retrieved from: https://www.gov.nl.ca/eecd/files/k12_curriculum_guides_completely_kinder_6.-section-2-classroom-design-and-routines-final.pdf

2.4 Classroom Discipline

Classroom discipline is a complex issue and a key concern for teachers, school administrators, students and parents. The issue also attracts significant attention from the public and from the media. Researchers in fields such as psychology, economics, school administration and sociology have provided numerous explanatory models of classroom discipline and behavior.

Further Reading:
Lopes, J., & Oliveira, C. (2017). Classroom discipline: Theory and practice. In J. P. Bakken (Ed.), Classrooms: Academic content and behavior strategy instruction for students with and without disabilities (Vol. 2,pp. 231-253). New York: Nova Science Publishers. Retrieved from: https://www.researchgate.net/publication/319178957_Classroom_Discipline_Theory_and_Practice/link/59dcc8920f7e9b146004b3ae/download

Activity:
- Visit any school, select any grade and develop a seating arrangement plan, classroom decoration plan and classroom discipline plan accordingly.

Feedback:
- Ask students to recall the concepts.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:

1. How teachers can apply the class-room management techniques to develope positive classroom climate. Discuss
2. Highlight the role of classroom decoration and discipline to establish effective classroom climate.

Summary and transition:

"A good classroom seating arrangement is the cheapest form of classroom management. It's discipline for free."

Classroom climate is "the intellectual, social, emotional, and physical environments in which our students learn.

The design of a classroom is crucial to a student's education. The design of the classroom affects student behavior and work ethic.

Classroom discipline is a complex issue and a key concern for teachers, school administrators, students and parents. Researchers in fields such as psychology, economics, school administration and sociology have provided numerous explanatory models of classroom discipline and behavior.

Unit 3 Classroom management styles
3.1 Authoritarian style
3.2 Authoritative style
3.3 Indifferent style
3.4 Indulgent/Laissez – Faire

Introduction
Effective classroom management is the major concern and pre-requisite to successful classroom teaching. At the same time, it is also considered as the most fundamental and difficult task the teacher performs (Cooper, 2003). Classroom management is one aspect of teaching that is very scary on the part of many educators. In fact, in the words of Winning (1998), entering a classroom full of many faces is a pretty scary experience. Once the bell rings, the teacher may start to panic no matter how prepared he/she is. However, as soon as one builds an effective classroom environment and acquires a style in classroom management that is functional or that really works, a teacher begins to feel a bit comfortable.

Introductory Activity: Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

Unit objectives
After studying this unit, the student will be able to:
*   Explain the types of classroom management
*   Distinguish between different management styles
*   Apply the various management styles in classroom situation
*   Create active classroom management strategies

PK Activity:
*   Recall your teaching learning experience throughout the years and share your experiences about various management styles of your teachers.

3.1 Authoritarian style
Authoritative style may encourage independence, warm, and nurturing. This style is considered as the best form of classroom management and is most clearly associated with appropriate student behavior.

466

Authoritative style of classroom management in the hands of an expert teacher can produce students who will be socially competent and responsible.

3.2 Authoritative style
Authoritarian style is characterized by numerous behavior regulations, is punitive and restrictive. Here, students have no say in their management or explanation. The teacher using this style may possess a character that is cold and even punishing. Therefore, an authoritarian classroom management style produces students who are ineffective at social interaction and are somewhat interactive.

3.3 Indifferent style
Permissive/Indifferent is one in which teachers show lack of involvement in the classroom. This involves an environment that is non-punitive and the teacher has few demands on the student and appears generally uninterested. Using this management style, the teacher does not impose on the students. Often, he or she feels that class preparation is not worth the effort. Hence, the students instead enjoy a lot of freedom

3.4 Indulgent/Laissez – Faire
is a style of classroom management that present an environment that has no demands on students of any short, and the learners are actively supported in their effort to seek their own needs using reasonable means.

Further Reading: Department of Special Education, Indiana University, Retrieved from:
http://www.pent.ca.gov/pos/cl/es/classroommanagementstyle.pdf

---

Activity:
1. What sort of classroom management style will you exhibit once you begin teaching?
2. Which style is most consistent with your personality?
3. Conduct a survey on at least 10 school teachers and identify their classroom management styles
4. Organize a role play to reflect various classroom management styles.

Feedback:
- Ask students to recall the concepts.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

---

Unit Exercise:
- Draw a comparison among various classroom management styles with examples.
- Which management style is best in your opinion and why?
- Recommend classroom management strategies for each management style.

Summary and transition:
There are various classroom management styles that teacher may have:
Authoritative style may encourage independence, warm, and nurturing. This style is considered as the best form of classroom management and is most clearly associated with appropriate student behavior.

Authoritarian style is characterized by numerous behavior regulations, is punitive and restrictive.

Permissive/Indifferent is one in which teachers show lack of involvement in the classroom. This involves an environment that is non-punitive and the teacher has few demands on the student and appears generally uninterested.

Indulgent/Laissez – Faire is a style of classroom management that present an environment that has no demands on students of any short, and the learners are actively supported in their effort to seek their own needs using reasonable means.

Unit 4: Managing difficult behaviors
4.1 What is behavior
4.2 Behavior modification techniques

Introduction:
When teachers have children with special needs in class, early identification of their problems and arrangement for referral is only the first step. Teachers also need to manage the children's learning, emotional and behavioural problems in the classroom in order to help them adapt to school life and learn more easily. To handle these issues effectively, teachers must understand the basic behavioural principles and techniques. This chapter will introduce the basic behaviour theory, ways to analyse behaviour, and how to modify children's behaviour

---

Introductory Activity: Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

Unit objectives
After studying this unit, the student will be able to:
- conceptualize the concept of behavior
- apply behavior modification techniques
- design behavior modification activities for specific purposes

---

PK Activity:
- Provide at least one definition of behaviour
- Think about a moment and enlist the behavior problems you have ever observed in students.
- Share your experience about any incident occurred bacause of behaviour problems of students in class and how teacher dealt with that situation?

4.1 What is behavior?
Behaviour can be defined as the way in which an individual behaves or acts. It is the way an individual conducts herself or himself. You should see behaviour in reference to a phenomenon, an object or person. It is can be seen in reference to society norms, or the way one treats others or handles objects. Behaviour, therefore, is the way an individual acts toward people, society or objects. This can be either bad or good. It can be normal or abnormal according to society norms. Society will always try to correct bad behaviour. It will always try to bring back to normal an abnormal behaviour.

4.1.1 Root Causes of Behaviour Differences
The following are the root causes of behaviour differences:
1. Individual differences
2. Differences in family patterns
3. impairment/disabilities
4. Environmental factors
5. Psychological factors

468

4.2 Behavior Modification techniques
Positive Reinforcement
This is applied where there is a need to promote a given desirable behaviour. Say you want to encourage a student to keep tidy books. You would watch for the target behaviour, and reward it with praise or a prize.

Extinction or Ignore Technique
This is applied in situations where a given student behaviour (usually self- defeating) is best eliminated. The undesired behaviour is simply ignored rather than punished or reinforced. One particular pupil in your class may often seek notice from you by calling out "Sir, Sir," when he wants to be attended to instead of putting up his hand. Calling out to you is distracting, especially if all pupils were to do it at the same time. You could easily ignore such a pupil, until he puts up his or her hand. Drawing the student's attention to the strategy may increase its effectiveness, as will consistency in its application.

The Modeling Technique
You could use this technique to help your pupils learn some new behaviours. The pupil is made to observe a model (usually someone she admires or an authority) perform the desired behaviour or talk against an undesired behaviour. A smart pupil in an upper class can, for example, be a model for pupils in lower classes. By often observing him/her, other pupils may learn to become smart. With the technique, you can also use a modelling exercise. You can assist your pupil to cope with a particular behaviour situation through role play or exercises. For example, you could use "disciplined pupil", as the desirable behaviour. You may then proceed to have your pupil imagine that she is a disciplined pupil and then she goes ahead to act as she believes that person would, like a role in a play. Later, after the activity, you could ask her how she felt and follow this up with a dialogue.

The Punishment Technique
This is used when it becomes necessary to apply an aversive stimulus to extinguish a given undesirable behaviour. When you see the many techniques available for modifying behaviour, you may become aware that this technique has been over utilised. Also, schools have been known to use good, honest work as "punishment," leading to stigmatisation in students' minds. Examples of this may include slashing grass or digging in the school garden.

Systematic Desensitization Technique
This technique is very effective when dealing with anxiety and other fear- related problems. The individual is given small doses of whatever is feared until a relaxation response is built up. For example, a student who fears to speak in class may first practice speaking one-on-one with the teacher. When she gets comfortable with that, she may be given an opportunity to speak in a setting with the teacher and two classmates. After growing comfortable there, she may try getting involved in a small discussion group, and so on until herfear is mastered and she gains confidence to speak in class.

The Technique of Over-correction
This technique is used when a mild punishment is to be administered for purposes of reducing very disruptive behaviours in clients. As Achebe (cited in Nwoye, 1990) has explained, it requires the culprit to restore the environment he has disrupted or damaged to a better condition than existed before his disruptive behaviour took place. This is effective when a student writes on a wall or carves a school desk. Scrubbing, painting or sanding the damaged property may provide effective behavioural change for the future

The Time-out Technique
Time-out is used to control the occurrence of undesirable behaviour in pupils by the exercise of withdrawal of privilege in the face of the occurrence of the undesirable behaviour. A student who disrupts his classmates in the library, for example, will probably do so because he is somehow reinforced by doing so. Losing library privileges or having to sit alone for a period of time while others are together may help to eliminate the problem behaviour.

The Technique of Negative

Reinforcement Negative reinforcement is used to increase the occurrence of a desirable behaviour by removing obstacles against its continued occurrence. A bed-wetter is often fneled by late-night drinks. Eliminating after dinner drinks and perhaps instituting a late-night wakening for toileting may help achieve dry bed

The Response Cost

Technique This technique is used to eliminate undesirable behaviour by making the culprit forfeit something valuable to him when he misbehaves. When a student fails to eat mess food, he may lose access to canteen privileges.

The Shaping Technique

Shaping is used to develop a desirable complex human behaviour. This is related to the example above on systematic desensitisation. Success in small steps are linked together to form a more major behaviour change. A dirty student may first be taught daily bathing, then after consistent behaviour change is attained there, hair combing may be addressed, then shirt-tail tucking, laundry care, etc.

Assertiveness Training

Assertiveness training is usually applied to help pupils control their excessive shyness and other fear-related problems that impede their ability to live fully as persons. Assertiveness training is a widely used behavioural technique. It is based on a combination of modelling rehearsal and operant reinforcement approaches. Its purpose is to teach people how to stand up for themselves without being aggressive. To a considerable extent, exploitation depends on the compliant behaviour of the exploitee. You can carry out assertiveness training with individuals or with groups. It is relevant to a wide range of interpersonal problems. You can use it to both increase assertive skills and to reduce aggressiveness in favor of assertiveness

Further Reading:
Guez, W., Allen, J. (2000) Module 4. Behaviour Modification. UNESCO

Activity:
✓ develop various behavior modification strategies for class
✓ Conduct a role play to show any problem and strategy to solve it

Feedback:
- Ask students to recall the concepts.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Inform the student they did what he or she were supposed to do
- inform the student the accuracy of their performance or response
- Direct students in the right direction to find the correct answer but does not provide the correct answer
- Provide information (new, different, additions, suggestions) to the students and confirm that you have been actively listening – this information allows sharing between two people
- Provide suggestions, recommendations, and information to correct their performance

Unit Exercise:
1. Explain behavior and root causes of behavior differences with examples?
2. Discuss various behavior modification techniques with practical examples.

Summary and transition:
Behaviour can be defined as the way in which an individual behaves or acts. It is the way an individual conducts herself or himself. Behaviour, therefore, is the way an individual acts toward people, society or

objects. This can be either bad or good. It can be normal or abnormal according to society norms. Society will always try to correct bad behaviour. It will always try to bring back to normal an abnormal behaviour.

The following are the root causes of behaviour differences:
1. Individual differences
2. Differences in family patterns
3. impairment/disabilities
4. Environmental factors
5. Psychological factors

Following are the behavior modification techniques that teachers may use to address behavior problems.
- Positive Reinforcement
- Extinction or Ignore Technique
- The Modeling Technique
- The Punishment Technique
- Systematic Desensitization Technique
- The Technique of Over-correction
- The Time-out Technique
- The Technique of Negative
- The Response Cost
- The Shaping Technique
- Assertiveness Training

Module 07: Reflective Practices
Unit 1 Meaning and nature of Reflective Practices
1.1 Definitions of reflective practices
1.2 Scope of reflective practices
Unit 2 Process of Reflection
2.1 Reflection as a process
2.2 The reflection cycle
Unit 3 Major techniques and strategies
3.1 Critical incident analysis
3.2 Reflective learning Journals
3.3 Peer coaching
3.3 Action research
3.4 Portfolios as a source of reflection
3.5 Skills for reflection
3.6 Systematic reflection throughout the teaching-learning process

Introduction

Teaching is very demanding work. It requires a lot of energy, stamina and fortitude. Among all the physical activity however, it is important to remain focused on what may be identified as the more 'intellectual' aspects of the teaching profession. This is significant for several reasons. Arguably the most important of these is your obligation as a beginning teacher or an aspiring teacher to make increasingly well-informed decisions in the context of your everyday practice.

Further Reading:
Sellars, M. (2013) Reflective Practice for Teachers. SAGE Publications. Retrieved from:
https://uk.sagepub.com/sites/default/files/upm-binaries/59229_Sellars.pdf

Module objectives
After studying this unit, the student will be able to:

11. Understand meaning and nature of Reflective Practices
12. Describe the process of Reflection
13. Apply Major techniques and strategies of reflection
14. Demonstrate various skills for reflection
15. Evaluate systematic reflection throughout the teaching-learning process

Unit 1 Meaning and nature of Reflective Practices
1.1 Definitions of reflective practices
1.2 Scope of reflective practices

Introduction

Reflective Practice is the foundation of professional development; it makes meaning from experience and transforms insights into practical strategies for personal growth and organizational impact. It involves integrating activities into daily life on a routine basis which raise awareness, prompt critical analysis and aid self-management and decision-making. It means: Learning to pay attention, listening to ourselves, coming face to face with our assumptions, noticing patterns, changing what we see and Changing the way we see.

Further Reading: Grace Owen and Alison Fletcher. CIPD. Retrieved from:
https://www.cipd.co.uk/Images/reflective practice guide_tcm1812524.pdf

Introductory Activity: Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

7.1 Meaning and nature of Reflective Practices
Definitions:

Reflection is very broadly able to be defined as the deliberate, purposeful, meta-cognitive thinking and/or action in which educators engage in order to improve their professional practice. Different theories, models and levels of reflection have most commonly focused on differentiating the major elements of this construct:

• The conditions, situations or circumstances that prompt engagement in the reflective process

• The process itself, different types of reflection, different concepts or opinions on how this is undertaken

• the content of the reflection, what exactly needs to be analyzed, examined, discussed, challenged in the reflective process and with what perspectives or ideologies

• The product of the reflection, improved understanding of professional practice, action taken as a result of the reflective thinking.

The brief overview of understandings of reflection in educational practice that follows illustrates some of these differences as proposed by various writers in this field.

Further Reading: Reflective practice for Teachers. Chapter 1. Retrieved from:
https://uk.sagepub.com/sites/default/files/upm-binaries/59229_Sellars.pdf

1.2 Scope of reflective practices

- Reflective practice helps create confident teachers
- Reflective practice makes sure you are responsible for yourself and your students
- Reflective practice encourages innovation
- Reflective practice encourages engagement
- Reflective practice benefits all

Further Reading: Getting started with Reflective Practice. Cambridge International Education Teaching and Learning Team. Retrieved from: **https://www.cambridge-community.org.uk/professional-development/gswrp/index.html**

Activity:
List your ideas about the benefits of becoming a reflective practitioner.

Feedback:
- Recall the concept of reflection.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response

- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
1. Discuss various definitions of Reflective Practices and write your own definition of reflective practices
2. Why it is important to be a reflective practitioner? Discuss with examples.
3. Analyze the importance and scope of reflective practices in professional development of teachers.

Summary and transition:

Reflective Practice is the foundation of professional development; it makes meaning from experience and transforms insights into practical strategies for personal growth and organizational impact.

Reflection is very broadly able to be defined as the deliberate, purposeful, meta-cognitive thinking and/or action in which educators engage in order to improve their professional practice.

Different theories, models and levels of reflection have most commonly focused on differentiating the major elements of this construct.

Unit 2 Process of Reflection
2.1 Reflection as a process
2.2 The reflection cycle

Introduction:
Reflective teaching means looking at what you do in the classroom, thinking about why you do it, and thinking about if it works - a process of self-observation and self-evaluation. By collecting information about what goes on in our classroom, and by analyzing and evaluating this information, we identify and explore our own practices and underlying beliefs. This may then lead to changes and improvements in our teaching. Reflective teaching is therefore a means of professional development which begins in our classroom.

Further Reading: Tice, J. (2004) Reflective teaching: Exploring our own classroom. British Council. Retrieved from: https://www.teachingenglish.org.uk/article/reflective-teaching-exploring-our-own-classroom-practice

Introductory Activity: Show a video to the students about the concept, ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives:
After studying this unit students will be able to:
1. Explain reflection as a process.
2. Draw a concept map reflecting the process of Reflection.
3. Apply reflective cycle.

PK Activity:
- What is reflection?
- Who needs to reflect?

- Is it important for me?
- How does it help me?
- Do I think reflection is important for teachers? Why?
- How do I know that what I am doing is working and making a difference in my students learning?
- What is the evidence of what worked and what didn't work in my teaching?

2.1 Reflection as a Process

Using a Reflective Practice Framework In learning environments and teaching contexts, teachers may encounter situations or episodes where they need to pause, think and make intelligent decisions. Stephen Brookfield (1999) introduces four lenses through which teachers can view these teaching and learning episodes and reflect on their implications. These lenses are: (1) autobiographies as teachers and learners, (2) students' eyes, (3) colleagues' experiences, and (4) the literature on teaching and learning. The first lens involves putting our autobiographical self in the mirror to understand students' experiences through self-reflection. This can be done by drawing on our own experiences and understanding. This process can also alert us of the assumptions we may have made along the way. The second lens is to see ourselves as students see us, and draw on students' feedback to inform our reflections. This reflective process makes us aware of the invisible power relationships within learning environments that may affect students' learning experiences. The third lens enables us to observe our practice critically from a colleague's perspective. Finally, the fourth lens is research on teaching. It can provide us with insights into other people's practices, through reading literature, for instance. We find various related aspects of the things we have been doing in our own teaching in other people's situations. In other words, they may be named "in different ways [but they are] generic aspects of what we thought were idiosyncratic events and processes" (Brookfield, 1999, p. 30).

Further Reading:
Zalipour,A. (2015) Reflective Practice Teaching Development Unit, Wāhanga Whakapakari Ako. The University of Waikato. Retrieved from:
https://www.waikato.ac.nz/__data/assets/pdf_file/0006/360861/Reflective-Practice-June-2015.pdf

2.2 The Reflection Cycle:

Reflecting is a cyclical process, where recording ones thoughts (reflecting) "leads to improvement and/or insight" (RMIT, 2006). Improvement could mean progress, development, growth, maturity, enhancement, or any number of words which could imply change. In education, we want students to change for the better, to grow while learning and to mature into knowledgeable adults. Recording what has happened, reflecting on processes and analyzing to improve deeper learning all can lead to new dimensions of students' inner selves
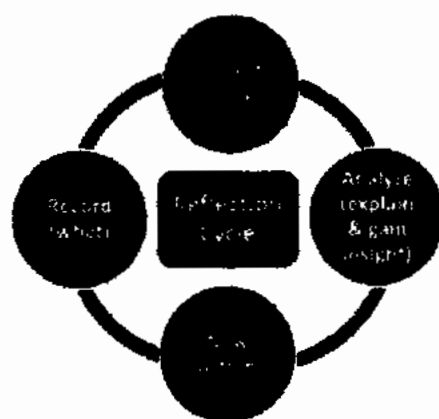
Further Reading:
Reflective Journals and Learning Logs Northern Illinois University Faculty Development and Instructional Design Center **Retrieved from:** https://dokumen.tips/documents/reflective-journals-and-learning-logs-your-future-our-situation-for.html

Activity: Think about any situation and write your reflection keeping in view reflection cycle.

Feedback:
- Recall the concept of reflection.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
1. Explain reflection as a process.
2. How teachers can use a reflective practice framework? Discuss with reference to the application of reflective cycle.

Summary and transition:

Reflective teaching means looking at what you do in the classroom, thinking about why you do it, and thinking about if it works - a process of self-observation and self-evaluation.

Using a Reflective Practice Framework In learning environments and teaching contexts, teachers may encounter situations or episodes where they need to pause, think and make intelligent decisions.

Reflecting is a cyclical process, where recording ones thoughts (reflecting) "leads to improvement and/or insight" (RMIT, 2006). Improvement could mean progress, development, growth, maturity, enhancement, or any number of words which could imply change.

Unit 3 Major techniques and strategies
3.1 Critical incident analysis
3.2 Reflective learning Journals
3.3 Peer coaching
3.3 Action research
3.4 Portfolios as a source of reflection
3.5 Skills for reflection
3.6 Systematic reflection throughout the teaching-learning process

Introduction

There are many ways to start reflective practices. You may begin a process of reflection in response to a particular problem that has arisen with one or your classes, or simply as a way of finding out more about your teaching. You may decide to focus on a particular class of students, or to look at a feature of your teaching - for example how you deal with incidents of misbehaviour or how you can encourage your students to speak more English in class. The first step is to gather information about what happens in the class. Here are some different ways of doing this.

> **Further Reading:** Tice, J. (2004) Reflective teaching: Exploring our own classroom. British Council. Retrieved from: https://www.teachingenglish.org.uk/article/reflective-teaching-exploring-our-own-classroom-practice

> **Introductory Activity:** Show a video to the students and ask them to watch carefully and discuss what they have learned from this.

> **Unit Objectives:**
> After studying this unit students will be able to:
> 13. Apply Major techniques and strategies of reflection
> 14. Demonstrate various skills for reflection
> 15. Evaluate systematic reflection throughout the teaching-learning process

> **PK Activity:**
> * Do I think reflection is important for teachers? Why?
> * How do I know that what I am doing is working and making a difference in my students learning?
> * What is the evidence of what worked and what didn't work in my teaching?

Major techniques and strategies:

There are several modes and frameworks for reflective practice used for the enhancement of students' learning experience and also professional development.

3.1 Critical incident analysis

Why use critical reflection? Analysing a critical incident may help you to:

* "reflect-on-action" (ie past experience),
* "reflect-in-action" (ie as an incident happens), and
* "reflect-for-action" (ie actions you may wish to take in future experiences)

Often "reflection" and "critical reflection" are used inter-changeably in the literature. However, critical reflection denotes another level of reflection beyond what you might or might not cover in other forms of reflection (eg. diary, journal). Sometimes action is just "too hot" for us to consciously reflect-in-action (as the incident happens) (eg. Eraut, 1994). This is why a critical reflection framework may be better suited as it requires reflection in relation to past and future action. A default use of this technique and tool, particularly in "health", is as a way of reflecting on "what was perceived to go wrong". While this is a valid purpose, the scope of this framework has broader applications – namely as an appreciative form of inquiry. This framework of reflection starts from a basis of what has worked well and why. Critical reflection is an extension of "critical thinking". It asks us to think about our practice and ideas and then it challenges us to step-back and examine our thinking by asking probing questions. It asks us to not only delve into the past and look at the present but importantly it asks us to speculate about the future and act. What theory underpins this form of reflection? Critical incident reflection sits well within the action research field or it can "stand-alone" as a learning method. While there is little agreement in the literature about what is reflective practice there does seem to be agreement that critical reflection can be taught to adults. John Flanagan, who founded the American Institutes for Research in 1946, introduced critical incident reflection. He set out a 20 year plan to improve the effectiveness of organisations and their leaders. His strategy: • To formulate problems in general terms so that they could apply findings to a broad class of issues; • To emphasise new research methods to be of central importance; • To develop "the critical incident technique" to identify contributing factors to the success or failure in specific situations.

477

3.2 Reflective Learning Journals

Learning journals are written records, which students create as they think about the concepts they have learned, the critical incidents involved in their learning and the interactions they have had with other students or tutors (Thorpe 2004). According to Luidens (1997, page 141), 'writing is a manifestation of thinking', and because students need to manipulate and transform their knowledge before they can present it in a written form, learning journals are suggested to have the ability to facilitate new understandings (Yinger et al 1981). In addition, reflective journal writing can also enable students to critically review the processes of their own learning and behaviours, and to change their learning strategies as and when needed (Gleaves et al 2008). The literature reports a positive association between journal keeping and learners' cognitive skills (McCrindle and Cristensen 1995; Stephien et al 1998). For example, in a study by McCrindle and Christensen (1995), forty undergraduates in a first-year biology course were randomly assigned to a learning journal (experimental) group or a control group. The results showed that students in the experimental group used more cognitive strategies during a learning task compared to those in the control group. In addition, students who kept learning journals showed more sophisticated conceptions of learning and greater awareness of cognitive strategies. They also performed significantly better on the final examination for the course compared to students who had not used learning journals. Learning journals are widely adopted in practice in many institutions, albeit mostly on a non-compulsory basis. For instance, the University of Portsmouth provides a reflective journal template on their website, as well as links to reflective writing guides. Furthermore, many other universities provide useful information to support students to develop reflective writing skills (University of Bradford 2015; University of Manchester 2015; University of Reading 2015). It is useful to note that many degree courses with The Open University have requirements where student learning journals are mandatory as part of assessment submission. Entries are not marked only non-submission leads to loss of marks. In spite of the advantages of journal writing as presented above, some studies have also shown that students can experience a number of challenges in keeping a reflective journal. Some examples include a loss of enthusiasm for the task over time, frustration and uncertainty about what to write, and the solitary nature of writing (Bain et al 1999 and Kerka 1996). Moreover, in some cases students might simply document concrete observations of their experiences, without demonstrating any critical reflection (Kerka 1996). These studies suggest that academics will sometimes need to provide additional support to students while they are writing learning journals. They could, for instance, provide guidelines regarding content and format, suggest a theme for reflection, and give clear explanations of the purpose for the reflective exercise (Woodward 1998). In addition, academic staff could also provide students with feedback and encouragement throughout the process in order to facilitate further reflection (Dye 2005).

It is suggested that students capture all formal and informal events which will prove useful when the time comes to return to the reflective journal or learning log for review. Students should focus on the areas which pose the most problems or difficulty in addition to those which are less problematic. Key to reflective journals and learning logs is to see progression over a period of time and to "gain a sense of achievement" (Dalhousie University, n.d.).

"Write, record

        Describe the situation (the course, the context)

        Who was involved with the situation?

        What did they have to do with the situation?

        Reflect, think about What are your reactions?

        What are your feelings?

        What are the good and the bad aspects of the situation?

        What you have learned?

Analyze, explain, gain insight

        What was really going on?

        What sense can you make of the situation?

Can you integrate theory into the experience/situation?

Can you demonstrate an improved awareness and self-development because of the situation?

Conclusions

What can be concluded in a general and specific sense from this situation/experience and the analyses you have undertaken?

Personal action plan

What are you going to do differently in this type of situation next time?

What steps are you going to take on the basis of what you have learned?"

Further Reading:

Reflective Journals and Learning Logs Northern Illinois University Faculty Development and Instructional Design Center Retrieved from: https://dokumen.tips/documents/reflective-journals-and-learning-logs-your-future-our-situation-for.html

3.3 Peer coaching

Peer review is considered to be another important tool for developing critical self-reflection skills in students (Dochy et al 1999). Encouraging students to give each other regular feedback in group meetings helps students become familiar with reflective practices (Moon 1999 and Boud 1999). In peer review, students reflect on their own and others' performance of group tasks. Reviewing the performance of their peers (strengths, weaknesses and areas for improvement) builds the students understanding of the principles of effective group processes and allows them to think about their own performance or approaches (Moon 1999). Research has shown that students who engage in such self-monitoring exercises where they evaluate each other's performance (rather than rely soley on teachers for feedback) become better at self-regulated learning (Butler 2002; Alvi and Gillies 2015). As Moon (1999) explains, 'working with others can facilitate learners to reflect and can deepen and broaden the quality of the reflection so long as all the learners are engaged in the process' (page172). Although peer assessment can be used as one tool to facilitate critical reflection, we need to be aware that students in the transition stage might lack experience in such methods, so peer assessment is probably best introduced as a formative, rather than summative device (Booth 2001, page 501). As too many new types of assessment may lead to resistance, peer assessment might be more likely to gain acceptance once students have become more comfortable with the notion of reflective learning (Booth 2001). The role of academic staff is also important here, as they would need to offer students significant support as they adjust to peer assessment

Further Reading: Cheng, M. (2015) Transition Skills and Strategies: Critical Self-reflection. Retrieved from: http://www.enhancementthemes.ac.uk/docs/publications/transition-skills-and-strategies---critical-self-reflection.pdf?sfvrsn=8

3.4 Action research

Reflective practice can be more formally encouraged and directed as action research (Kember & Kelly, 1993). Action research involves systematically changing your teaching using 'on the ground' evidence that suggests the changes you make are in the right direction and enhancing student learning (Biggs & Tang, 2007). The target of action research is the teacher, not the change that's being implemented. In action research the term 'reflection' is considered misleading. Transformative reflection (Brockbank & McGill, 2000) suggests that teaching is being altered as a result of the reflection and is deemed more accurate. Engaging in action research to improve teaching practice however involves a more explicit theory of teaching (Biggs & Tang, 2007). While many teachers have an implicit theory of teaching there is a need for a more consciously worked-out theory that generates answers to teaching problems. This helps to rephrases the unhelpful and not very useful 'there's something wrong with my teaching' to the more manageable and approachable 'students are only regurgitating what I give to them in class'. The latter also brings it back to the teaching, not the students, and allows the problem to framed in a way that that can be addressed by the teacher.

3.5 Portfolios as a source of reflection

Student portfolios represents a powerful reflective tool, as they can help students keep track of their development (Zubizarreta 2008). A student portfolio is defined as a collection of student work that illustrates the student's efforts, progress, or achievement in given areas (Arter and Spandel 1992). A number of universities that have adopted the use of learning portfolios. The University of New South Wales (2015), for example, have developed the UNSW Student Portfolios Site, where students can record their experiences and achievements relevant to a number of graduate attributes, such as communication, teamwork and problem solving. An exercise on reflection on what has already been achieved can enable students to plan how they will go about developing further desired attributes. Similarly, the University of Glasgow (2015) have developed the Graduate Skills Programme (GSP), where students build an electronic portfolio illustrating the skills they have developed in their university years. Students are encouraged to write about four different aspects of their university experience:

(1) academic skills related to aspects such as writing a dissertation or attending academic skills workshops;
(2) extra-curricular activities related to aspects such as studying abroad or being part of a student society or club;
(3) jobs and careers, where networking activities with employers at career fairs can be discussed and/or the creation of a professional LinkedIn profile; and
(4) work-related learning, where students can discuss their summer internships and placements. Students can choose to complete either element of their e-portfolio (or all), articulate the skills they have developed and reflect on their future career objectives.

3.6 Skills for reflection

There are various methods to encourage reflection through wiring or conversations, individually or in pair or group reflection, or a combination of these. The way that people capture their reflections is largely dependent on:

- their own learning style
- their discipline – whether they are in a predominantly written-oriented, performanceoriented or oral discipline; and
- what resources they happen to have at hand at the time

For practical reasons, most people capture their reflections in written forms such as diaries, post-it notes on lesson plans, journals, portfolio materials, poetry, sometimes short stories, novels or books. However, some capture reflections in dance, some in drama, some in song. Scholars have reminded of the quality of journal writing for reflection on teaching, and how reflective they actually are. Research indicates that reflective journals mostly have the form of reports, or descriptive writing (Hume, 2009; Maloney & Campbell-Evans, 2002). Writing journals is the most popular form of reflection among teachers. Moon (1999) devotes one complete chapter to the use of journals for reflection. Writing journals should be sustained in the course of time and on-off type of writing does not ensure that learning has occurred from the reflective process. Moon suggests both unstructured and structured forms of journal writing. Unstructured forms include:

- 'free wring and reflecting' (chronological but not involved everyday);
- recording thoughts and refection of an ongoing event or issue; and
- 'double-entry journals' where one part of the journal is for recoding of the event or what happened, and on the other side we write our reflection on "the written account of the experience" (Moon, 1999, p. 194).

Further Reading:
Zalipour,A. (2015) Reflective Practice Teaching Development Unit, Wāhanga Whakapakari Ako. The University of Waikato. Retrieved from:
https://www.waikato.ac.nz/__data/assets/pdf_file/0006/360861/Reflective-Practice-June-2015.pdf

Recording Lessons:

Recording your lessons can be an especially interesting technique since it will give you an opportunity to see and hear yourself from another perspective. You may do things or have certain tendencies in class that you not aware of. Recording your lesson is a good way to critically analyze your teaching performance and class presence. You can make either a video an audio recording. Audio recording is easier and is less distracting. It is also sufficient if you're only concerned about your speech tendencies. You may want to consider analyzing an audio recording if you want to answer some of the following questions:

- How much do I talk?
- How quickly do I talk?
- How loudly do I talk?
- Do I speak clearly?
- How much do students talk?

Video recording may be distracting to both you and your students, but it is useful for showing you your behavioural tendencies while teaching. You may want to consider analyzing a video recording if you want to answer the following questions:

- How do I come across to my students while I teach?
- Where do I face when I teach?
- Do I focus too much on one area of the class or on certain students?
- Do I have any nervous tendencies or habits?

You may think you know the answer to all these questions, but people are often surprised when they hear or see a recording of themselves.

Further Reading: Experiential Learning &Reflective Teaching (2014) Faculty Development Academy. Faculty of Engineering, McMaster Engineering University. Retrieved from:
http://www.eng.mcmaster.ca/fda/documents/ReflectiveTeachingAndExperientialLearningReference.pdf

3.7 Systematic reflection throughout the teaching-learning process

Teaching is very demanding work. It requires a lot of energy, stamina and fortitude. Among all the physical activity however, it is important to remain focused on what may be identified as the more 'intellectual' aspects of the teaching profession. This is significant for several reasons. Arguably the most important of these is your obligation as a beginning teacher or an aspiring teacher to make increasingly well-informed decisions in the context of your everyday practice. This is because teaching is a profession in which demanding situations arise on a daily basis. Frequently there are no right or wrong answers, no procedures to follow, no time or opportunity to consult with supervising staff or colleagues. In some cases you may have the possibility of discussing with and receiving advice about incidents or concerns from appropriate others. Often, however, as a certified teacher (or even as a student teacher), you may simply be advised or expected to use your professional judgement. This may be a reasonable expectation, as it allows you to develop your skills in relation to decision making and problem solving in your specific educational context. However, it does assume that you are well-informed or have some experience of the reflective process. It assumes that you have a framework within which to consider your options and determine any possible action.

Robins et al. (2003) describe reflective practice as a tool that allows teachers, student teachers and teaching assistants to understand themselves, their personal philosophies and the dynamics of their classroom more deeply. While acknowledging the critics who argue that there is little evidence that reflection actually changes behaviour, they propose that the process of engaging in reflection not only provides a personal resource that can be accessed in other similar contexts, but is also a tool that empowers individuals who use it. This is because engagement with the process of focused thinking supports self knowledge and understanding (White, 2004; Wieringa, 2011). The capacity to engage with your professional work in this manner is not always easy. One reason is that classrooms are busy, fast-moving work environments within which pupils of diverse

characteristics are engaging in an extremely important undertaking: that of learning new knowledge, skills and strategies. Another is that any framework or other tool to support your professional development is only as beneficial as the user is proficient. In order to develop the skills and competencies of an expert teacher, you need to engage in reflection. Reflective practice, over time, allows you to become skilful in making informed judgements and professional decisions, and is empowering (Robins et al., 2003). Authentic engagement in reflection supports your efforts to become contemplative, to improve your professional competencies and to identify your personal strengths and relative limitations as a teacher. It is because of its potential to impact positively on individual practice that reflection is arguably the most important of the many professional attributes that characterise successful teachers at every stage of their careers (White, 2004)

Further Reading:
Sellars, M. (2013) Reflective Practice for Teachers. SAGE Publications. Retrieved from:
https://uk.sagepub.com/sites/default/files/upm-binaries/59229_Sellars.pdf

Becoming a critically reflective teacher:
Whilst understandings and practice of reflection may show some commonality across a range of disciplines and contexts, the addition of the qualifier critical to reflection often signifies a deeper consideration and focus upon:

- recognizing and appreciating difference and diversity from a number of angles (for example race, ethnicity, gender, class, culture, religion, disability, age) and how these factors impact on learning and teaching
- challenging and dealing with the taken for granted assumptions about teaching, learning, learners, and the learning environment
- identifying and negotiating how power operates in an always contested learning and teaching context
- nurturing, facilitating and enabling a learning and teaching environment which challenges students to think critically and morally about a variety of issues
- initiating socially engaged lifelong and transformative learning

Further Reading:
https://sydney.edu.au/education_social_work/groupwork/docs/Reflection.pdf

Activities:
- Think of any teaching learning situation and apply a Critical incident technique.
- Develop a Reflective learning Journal and write your daily reflections in it.
- Apply the technique of Peer coaching. (*Divide students in groups (five to six each) and provide a task to each group. Ask them to reflect on their own and others' performance of group tasks. The objective of this activity is to reviewing the performance of your peers in terms of strengths, weaknesses and areas for improvement).*
- Identify any instructional problem of the class and plan an instructional solution through Action research technique.
- Develop a semester portfolio.
- Prepare a presentation on any topic of your choice and record your lesson. Play your recording in class and evaluate yourself in terms of the set criteria of effective presentation skills. You may also ask your peers to evaluate your presentation in terms of strengths, weaknesses and areas for improvement

Feedback:
- The major objective of each activity is to apply the techniques of reflective practice.
- The activities can be assigned one by one after teaching the related skill of reflection.
- Portfolio and journal writing activity should be assigned at the start of the semester.
- Recall the concept of reflection.
- Any situation can be taken from your professional or personal life.

- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity.
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise
1. How teachers can apply major techniques and strategies of reflection? Discuss with examples
2. Critically analyze systematic process of reflection throughout the teaching-learning process.
3. "Becoming a critically reflective teacher". Write an article on this topic with reference to your personal reflections and experiences during class.

Summary and transition:
- There are several modes and frameworks for reflective practice used for the enhancement of students' learning experience and also professional development.
- Critical incident analysis
- Reflective learning Journals
- Peer coaching
- Action research
- Portfolios as a source of reflection
- Skills for reflection
- Recording Lessons
- Systematic reflection throughout the teaching-learning process
- Becoming a critically reflective teacher

Module Introduction

The skills associated with stepping back and pausing to look, listen and reflect, are closely related to those concerned with critical thinking which also requires you to 'unpack' whatever you are focusing on, not simply accept what you read or hear at face value. Through this process you will probably identify things you would not otherwise notice. Moon (2004: 181) notes similarities between being reflective and using an imaginary instrument called a 'pensieve' (Rowling, 2000: 518) in Harry Potter and the Goblet of Fire: 'One simply siphons the excess thoughts from one's mind, pours them into the basin, and examines them at one's leisure. It becomes easier to spot patterns and links, you understand, when they are in this form.' (Rowling, 2000: 518) The key to reflecting is spotting the patterns and links in thought which emerge as a result of your experiences in life and in learning. Sometimes this is difficult for learners because the focus is on you and this might not feel comfortable – especially in an academic context where you are usually encouraged to depersonalize your work – particularly your essays and reports. Remember, you try to avoid saying 'I' in essays? So, when writing reflectively, you need to find a way to be both academic and also personal and that is not always easy. You may be both referencing academic theory and, in the same piece of writing, describing an exciting learning experience you had during a seminar. Becoming reflective is, in part about feeling comfortable with this dual process. The great benefit of including reflection in your learning is that, by understanding why you do something in a particular way and recognizing how you feel about it, you can spot where your strengths and weaknesses lie. This gives you the chance to build on your strengths and develop strategies to minimize your weaknesses.

Further Reading: Reflection' Learning Development, Plymouth University (2010)
http://www.learnhigher.ac.uk/wp-content/uploads/Reflection1.pdf

Module Objectives
After studying this unit, the student will be able to:
7. Understand models of reflective practices specifically Schon's Model, Gibbs's Model, Kolb model and Johns Ten "Cs" model
8. Differentiate and compare different models of reflective practices.
9. Apply models of reflective practices according to classroom situations.

Unit 1 Schon's Model
1.1 Introduction
1.2 Components of the model

1.3 Application of the model

1.1 Introduction:

Donald A. Schon is among our generation's most influential philosophers of design and design education, yet remains uncelebrated in both philosophy *and* design education. This paradox dissolves when we consider Schon's specific contribution. He was, by his own account, a *displaced* philosopher working in (among other places) a management consulting firm, a governmental agency, a non-profit center for social development, and finally a university department of urban planning. He used his marginal position in the design professions to reframe professional practice generally. Schon spoke *from* philosophy and design *to* professional practice, conceiving design to be its unifying core. From his philosophy of design he projected a new model for teaching and learning in the professions, and a new conception of the research university.

Introductory Activity: Show a video to the students about the concept of effective teaching and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives
After studying this unit, the student will be able to:
5. Conceptualize Schon's model of reflection
6. Differentiate and compare Schon's model of reflection from other models
7. Apply Schon's model of reflection in classroom situations

PK Activity:
✓ What is reflection?
✓ Who needs to reflect?
✓ Is it important for me?
✓ How does it help me?
✓ Do I think reflection is important for teachers? Why?

1.1 Components of the Model

When we reflect, we consider deeply something which we might not otherwise have given much thought to. This helps us to learn. Reflection is concerned with consciously looking at and thinking about our experiences, actions, feelings and responses and then interpreting or analysing them in order to learn from them (Boud et al., 1994; Atkins and Murphy, 1994). Typically we do this by asking ourselves questions about what we did, how we did it and what we learnt from doing it. Schön (1991) distinguishes between reflection-on-action and reflection-in-action in the following way:

1.1 Reflection-in-action is concerned with practicing critically. So, a physiotherapy student working with a client on an exercise program is making decisions about the suitability of particular exercises, which exercise to do next and judging the success of each exercise at the same time as they are conducting the activity.
1.2 Reflection-on-action on the other hand, occurs after the activity has taken place when you are thinking about what you (and others) did, judging how successful you were and whether any changes to what you did could have resulted in different outcomes. This is usually the type of reflection which you are asked to write about as part of your studies. Reflecting on academic or professional practice in this way may make your personal beliefs, expectations and biases more evident to you. This understanding of yourself should help you to carry out your studies more successfully as it makes you aware of the assumptions that you might make automatically or uncritically as a result of your view of the world.

485

1.3 Application of the Model

Reflection-in-action is 'action present';which Schön (1983) describes as reflecting on the incident whilst it can still benefit that situation rather than reflecting on how you would do things differently in the future. This is a useful tool to use in disciplines where the professional has to react to an event at the time it occurs–rather than having the luxury of being able to think about what happened and make changes at a later time. This process is described by Schön (1983, p.68) as 'When someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on the categories or established theory and technique, but constructs a new theory of the unique case'.

Basically, surprising incidents occur because in a new situation people use knowing-in-action (knowledge that you have gained in other/similar situations) that are inappropriate for the current (unique) situation (Schön, 1983). Thus to overcome this, rather than using preconceived ideas about what should be done in a particular situation; the person reflecting decides what works best at that time, for that unique event/incident. Alternatively, reflection-on-action involves reflecting on how practice can be developed (changed) after the event '

We reflect on action, thinking back on what we have done in order to discover how our knowing-in-action may have contributed to an unexpected outcome' (Schön, 1983, p. 26).

Essentially, we reflect after the event on how our knowledge of previous similar events may have led to the unexpected incident and what we need to change for the future. Below is a guide for how to reflect-on-action:

Step 1: choose an incident. This could be something that you experienced in a placement or a component of your academic skills, which you feel has not been resolved or that you were not happy with the outcome.

Step 2: think about what the situation was like before your intervention and what it was like afterwards. If this was a positive experience that went well –write down what made the situation effective. If you are not happy with the experience, note what action you took and then what action you would have preferred to have done.

Step 3: consider the thinking process that you used to bridge the gap between the 'before and after'. For example, what were you thinking about in relation to your knowing-in-action and why it wasn't working well in the new situation? What should you have actually been thinking? At this point draw on academic literature to help you make sense of the situation.

Step 4: summarize the whole situation. What are the key points from your reflection-on-action? What have you learnt that developed your knowing-in-action? What would you do different

Activity: Think about any situation/incident and write reflection 'in' and 'on' action according to the Schon model of reflection.

Feedback:
* Recall the concept of reflection.
* Recall the components of the model.
* Any situation can be taken from your professional or personal life.
* Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
* Provide immediate feedback after every activity
* Informs the student they did what he or she were supposed to do
* informs the student the accuracy of their performance or response
* Directs students in the right direction to find the correct answer but does not provide the correct answer

- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
1. Explain Schon's model of reflection.
2. Draw a critical comparison of schon's model of reflection from other models.
3. Think about any classroom situations and apply Schon's model of reflection.
4. Are there any aspects of this model that might have helped you determine a course of action while on professional experience?
5. Do you think that engaging with professional experiences using this process has the potential to support improved professional practice for you?

Summary and transition:
Donald A. Schon is among our generation's most influential philosophers of design and design education. He spoke *from* philosophy and design *to* professional practice, conceiving design to be its unifying core. From his philosophy of design he projected a new model for teaching and learning in the professions, and a new conception of the research university.

Reflection-in-action is 'action present'; which Schön (1983) describes as reflecting on the incident whilst it can still benefit that situation rather than reflecting on how you would do things differently in the future.

Reflection-on-action on the other hand, occurs after the activity has taken place when you are thinking about what you (and others) did, judging how successful you were and whether any changes to what you did could have resulted in different outcomes.

Unit 2 Gibbs's Model
2.1 Introduction
2.2 Components of the model
2.3 Application of the model

2.1 Introduction
Gibbs' Reflective Cycle was developed by Graham Gibbs in 1988 to give structure to learning from experiences. It offers a framework for examining experiences, and given its cyclic nature lends itself particularly well to repeated experiences, allowing you to learn and plan from things that either went well or didn't go well...

Further Reading:
Gibbs G (1988). Learning by Doing: A guide to teaching and learning methods. Further Education Unit. Oxford Polytechnic: Oxford.
Gibbs' reflective cycle (2019). *Reflection Toolkit.* The University of Edinburgh. website:
https://www.ed.ac.uk/reflection/reflectors-toolkit/reflecting-on-experience/gibbs-reflective-cycle

Introductory Activity: Show a video to the students about the concept of effective teaching and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives
After studying this unit, the student will be able to:
7. Conceptualize Gibbs's Model of reflection.
8. Differentiate and compare Gibbs's Model of reflection from other models.

487

9.	Apply Gibbs's Model of reflection in classroom situations.

PK Activity:
- ✓ What is reflection?
- ✓ Who needs to reflect?
- ✓ Is it important for me?
- ✓ How does it help me?
- ✓ Do I think reflection is important for teachers? Why?

2.2 Gibbs's Model

Gibbs' reflective cycle Gibbs' reflective cycle is a popular model for reflection. The model includes 6 stages of reflection and is presented below as cited in Dye (2011, p. 230).
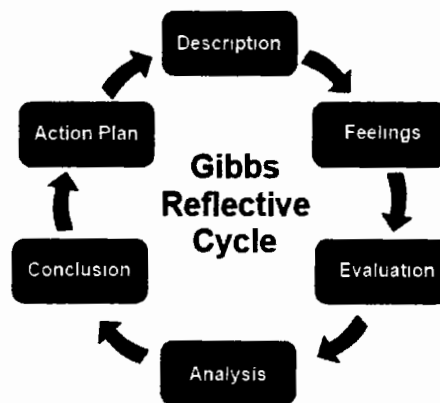
Description:

In this section, you need to explain what you are reflecting on to your reader. Perhaps include background information, such as what it is you're reflecting on and tell the reader who was involved. It's important to remember to keep the information provided relevant and to-the-point. Don't waffle on about details that aren't required – if you do this, you're just using up valuable words that you'll get minimal marks for.

Feelings:

Discuss your feelings and thoughts about the experience. Consider questions such as: How did you feel at the time? What did you think at the time? What did you think about the incident afterwards? You can discuss your emotions honestly, but make sure to remember at all times that this is an academic piece of writing, so avoid 'chatty' text.

Evaluation:

For your evaluation, discuss how well you think things went. Perhaps think about: How did you react to the situation, and how did other people react? What was good and what was bad about the experience? If you are writing about a difficult incident, did you feel that the situation was resolved afterwards? Why/why not? This section is a good place to include the theory and the work of other authors – remember it is important to include references in reflective writing.

Analysis:

In your analysis, consider what might have helped or hindered the event. You also have the opportunity here to compare your experience with the literature you have read. This section is very important, particularly for higher level writing. Many students receive poor marks for reflective assignments for not bringing the theory and experience together.

Conclusion:

In your conclusion, it is important to acknowledge: whether you could have done anything else; what you have learned from the experience; consider whether you could you have responded in a different way. If you are talking about a positive experience…discuss whether you would do the same again to ensure a positive outcome. Also consider if there is anything you could change to improve things even further. If the incident was negative…tell your reader how you could have avoided it happening and also how you could make sure it doesn't happen again.

Action plan:
Action plans sum up anything you need to know and do to improve for next time. Perhaps you feel that you need to learn about something or attend some training. Could you ask your tutor or placement supervisor for some advice? What can you do which means you will be better equipped to cope with a similar event?

Further Reading:
Gibbs' reflective cycle (2016) Academic Services & Retention Team. University of Cumbria. Website:
https://my.cumbria.ac.uk/media/ReflectiveCycleGibbs.pdf

2.3 Application of the Model:
This model is a good way to work through an experience. This can be either a stand-alone experience or a situation you go through frequently, for example meetings with a team you have to collaborate with. Gibbs originally advocated its use in repeated situations, but the stages and principles apply equally well for single experiences too. If done with a stand-alone experience, the action plan may become more general and look at how you can apply your conclusions in the future.

Further Reading:
Gibbs G (1988). Learning by Doing: A guide to teaching and learning methods. Further Education Unit. Oxford Polytechnic: Oxford.
Gibbs' reflective cycle (2019). *Reflection Toolkit.* The University of Edinburgh. website:
https://www.ed.ac.uk/reflection/reflectors-toolkit/reflecting-on-experience/gibbs-reflective-cycle

Activity: Think about any situation/incident and write reflection your reflections according to the Gibbs's model of reflection.

Feedback:
- Recall the concept of reflection.
- Recall the components of the model.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
1. Explain Gibbs's model of reflection.
2. Draw a critical comparison of Gibbs's model of reflection from other models.
3. Think about any classroom situations and apply Gibbs's model of reflection.

4.	Are there any aspects of this model that might have helped you determine a course of action while on professional experience?
5.	Do you think that engaging with professional experiences using this process has the potential to support improved professional practice for you?

Summary and transition:
Gibbs' Reflective Cycle was developed by Graham Gibbs in 1988 to give structure to learning from experiences. It offers a framework for examining experiences, and given its cyclic nature lends itself particularly well to repeated experiences, allowing you to learn and plan from things that either went well or didn't go well.

It covers 6 stages:

- **Description** of the experience
- **Feelings** and thoughts about the experience
- **Evaluation** of the experience, both good and bad
- **Analysis** to make sense of the situation
- **Conclusion** about what you learned and what you could have done differently
- **Action plan** for how you would deal with similar situations in the future, or general changes you might find appropriate.

Unit 3 Kolb model
3.1 Introduction
3.2 Components of the model
3.3 Application of the model

3.1 Introduction

In 1984, David A. Kolb, published a ground breaking book entitled Experiential Learning: experience as the source of learning and development (Englewood Cliffs, Prentice Hall, 1984). This book essentially exposed the principle that a person would learn through discovery and experience. The reason the theory is called "experiential" is its intellectual origins are taken from the experiential work of Lewin, Piaget, Dewey, Freire and James, forming a unique perspective on learning and development.

Experiential Learning Theory (ELT) provides a holistic model of the learning process and is a multi-linear model of adult development, both of which are consistent with what we know about how we naturally learn, grow, and develop. The theory is called "Experiential Learning" to emphasize the central role that experience plays in the learning process.

Further Reading: David Kolb. University of Leicester. Retrieved from:
https://www2.le.ac.uk/departments/doctoralcollege/training/eresources/teaching/theories/kolb

Introductory Activity: Show a video to the students about the concept of effective teaching and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives
After studying this unit, the student will be able to:
7. Conceptualize Kolb Model of reflection
8. Differentiate and compare Kolb Model of reflection from other models
9. Apply Kolb Model of reflection in classroom situations

3.2 Componentes of the Kolb Model

"Experiential learning theory defines learning as the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience"

Kolb's experiential learning theory is represented as a four stage cyclical process of learning. These stages are: concrete experience, reflective observation, abstract conceptualization and active experimentation.
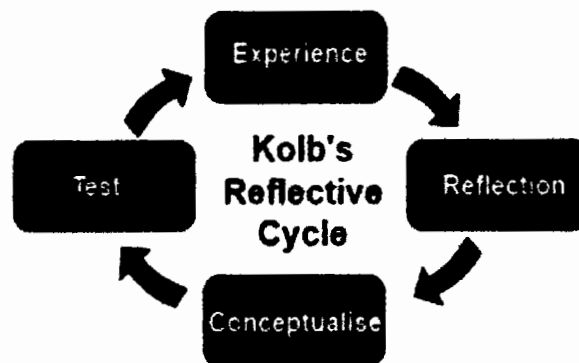
Concrete Experience: This is the first step of the experiential learning process. Concrete Experience sees the learner involved in a new experience or situation. This also includes a reinterpretation of an existing experience.

Reflective Observation: The second step of Kolb's theory, reflective observation, involves systematic reflection on the new experience. This is an analytical step in which the learner consciously thinks about what they have just experienced. A particularly important aspect of this step is the realization of inconsistencies between experience and understanding.

Abstract Conceptualization: The learner delves deeper into their thinking about the subject. In this step, the learner constructs a new idea, or modifies an existing concept to explain their observations.

Active Experimentation: The final step of the process involves using these new theories to solve problems and make decisions. By applying their newly-conceived understanding of the world around them, they are demonstrating their newfound knowledge. The process enters a new cycle when the learner uses this experimentation

In essence, effective experiential learning occurs when: 1) The learner has a concrete experience 2) The learner reflects upon their new experience 3) The learner analyzes their reflections and observations and creates their own conclusions 4) The learner uses these conclusions to test future situations After the fourth step, the process repeats itself on new experiences. For effective experiential learning to take place, the whole cycle must be completed, in the order described.
(McLeod,2010)

3.3 Application of the Model

Following activities can be conducted in classroom that support different aspects of the learning cycle:

Concrete experience	Reflective observations	Abstract conceptualization	Active experimentation
readings	logs	• lecture	projects
examples	journals	• papers	fieldwork
fieldwork	discussion	• projects	homework
laboratories	brainstorming	• analogies	laboratory
problem sets	thought questions	• model building	case study
trigger films	rhetorical questions		simulations
observations			
simulations/games			
text reading			

Activity: Think about any situation/incident and write reflection your reflections according to the Kolb's model of reflection.

Feedback:
- Recall the concept of reflection.
- Recall the components of the model.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity
- Informs the student they did what he or she were supposed to do
- informs the student the accuracy of their performance or response
- Directs students in the right direction to find the correct answer but does not provide the correct answer
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people
- Provides the student with suggestions, recommendations, and information for them to correct their performance

Unit Exercise:
1. Explain Kolb's model of reflection.
2. Draw a critical comparison of Kolb's model of reflection from other models.
3. Think about any classroom situations and apply Kolb's model of reflection.
4. Are there any aspects of this model that might have helped you determine a course of action while on professional experience?
5. Do you think that engaging with professional experiences using this process has the potential to support improved professional practice for you?

Summary and transition:

In 1984, David A. Kolb, published a ground breaking book entitled Experiential Learning: experience as the source of learning and development.

Experiential Learning Theory (ELT) provides a holistic model of the learning process and is a multi-linear model of adult development, both of which are consistent with what we know about how we naturally learn, grow, and develop. The theory is called "Experiential Learning" to emphasize the central role that experience plays in the learning process.

Kolb's experiential learning theory is represented as a four stage cyclical process of learning. These stages are: concrete experience, reflective observation, abstract conceptualization and active experimentation.

In essence, effective experiential learning occurs when: 1) The learner has a concrete experience 2) The learner reflects upon their new experience 3) The learner analyzes their reflections and observations and creates their own conclusions 4) The learner uses these conclusions to test future situations After the fourth step, the process repeats itself on new experiences. For effective experiential learning to take place, the whole cycle must be completed, in the order described. (McLeod, 2010)

Unit 4 Johns Ten "Cs" model
4.1 Introduction
4.2 Components of the model
4.3 Application of the model

4.1 Introduction
Reflective practice is something more than thoughtful practice. It is that form of practice which seeks to problematise many situations of professional performance so that they can become potential learning situations and so the practitioners can continue to learn, grow and develop in and through their practice. Johns, C (2000) describes reflection as a window through which we can view and focus our selves within the context of our own lived experience in ways that enable us to confront, understand and work towards resolving the contradictions within our practice between what is desirable and actual practice.

Further Reading: https://johndabell.com/2018/07/30/the-10-cs-of-reflection/

Introductory Activity: Show a video to the students about the concept of effective teaching and ask students to watch the video carefully and discuss what they have learned from this.

Unit Objectives
After studying this unit, the student will be able to:
5. Conceptualize Johns Ten "Cs" Model of reflection
6. Differentiate and compare Johns Ten "Cs" Model of reflection from other models
7. Apply Johns Ten "Cs" Model of reflection in classroom situations

PK Activity:
- What is reflection?
- Who needs to reflect?
- Is it important for me?
- How does it help me?
- Do I think reflection is important for teachers? Why?

4.2 Johns Ten "Cs" model
As a guide to its essential nature, reflection can be viewed as ten C's of reflection. Johns.C (2000b)

- Commitment – believing that self and practice matter; accepting responsibility for self; the openness, curiosity and willingness to challenge normative ways of responding to situations.
- Contradiction – exposing and understanding the contradiction between what is desirable and actual practice.
- Conflict – harnessing the energy of conflict within contradiction to become empowered to take appropriate action.
- Challenge and Support – confronting the practitioner's normative attitudes, beliefs and actions in ways that do not threaten the practitioner.
- Catharsis – working through negative feelings.
- Creation – moving beyond self to see and understand new ways of viewing and responding to practice.
- Connection – connecting new insight within the real world of practice; appreciating the temporality over reality.
- Caring – realizing desirable practice as everyday reality.
- Congruence - reflection as a mirror for caring.
- Constructing Personal Knowing in practice – weaving personal knowing with relevant extant theory in constructing knowledge.

4.3 Application of the Model

This model helps us to be self-aware so we can be conscious of our beliefs, values, qualities, strengths and limitations. It is a useful model because it enables us to

- Keep an open mind about what, and how we do things.
- Be awares of what, why and how we do things.
- Question what, why and how we do things.
- Ask what, why and how other people do things.
- Generate choices, options and possibilities.
- Compare and contrast results.
- Seek to understand underlying mechanisms and rationales.
- View our activities and results from various perspectives.
- Ask "What if …..?"
- Seek feedback and other people's ideas and viewpoints.
- Analyse, synthesise and test.
- Search for, identify and resolve problems.

Being reflective is something we should be doing daily if only for a few minutes. Kolb (1984) sees that to reflect effectively on your experience, you should actively set aside part of your working day to reflect and analyse.

Further Reading: Dabell, J. (2018) The 10 Cs of Reflection. Retrieved from: https://johndabell.com/2018/07/30/the-10-cs-of-reflection/

Activity: Write reflections according to the Johns Ten "Cs" model of reflection.

Feedback:
- Recall the concept of reflection.
- Recall the components of the model.
- Any situation can be taken from your professional or personal life.
- Suggest students to try "Smart Art" and "shapes: in MS Word to draw graphical organizers
- Provide immediate feedback after every activity.
- Informs the student they did what he or she were supposed to do.
- informs the student the accuracy of their performance or response.

- Directs students in the right direction to find the correct answer but does not provide the correct answer.
- Provides information (new, different, additions, suggestions) to a student and confirms that you have been actively listening – this information allows sharing between two people.
- Provides the student with suggestions, recommendations, and information for them to correct their performance.

Unit Exercise:
1. Explain Johns Ten "Cs" model of reflection.
2. Draw a critical comparison of Johns Ten "Cs" model of reflection from other models.
3. Think about any classroom situations and apply Johns Ten "Cs" model of reflection.
4. Are there any aspects of this model that might have helped you determine a course of action while on professional experience?
5. Do you think that engaging with professional experiences using this process has the potential to support improved professional practice for you?

Summary and transition: Johns, C (2000) describes reflection as a window through which we can view and focus our selves within the context of our own lived experience in ways that enable us to confront, understand and work towards resolving the contradictions within our practice between what is desirable and actual practice.

This model helps us to be self-aware so we can be conscious of our beliefs, values, qualities, strengths and limitations.