EFFECT OF SYSTEMATIC TRAINING ON TEACHERS' PERFORMANCE: AN EXPERIMENTAL STUDY

Researcher:

Iftikhar Ahmad

Reg. No.92-FSS/PHDEDU/S-12

Supervisor:

Prof. Dr. N.B. Jumani

Co-Supervisor:

Dr. Shamsa Aziz

Department of Education

Faculty of Social Sciences

INTERNATIONAL ISLAMIC UNIVERSITY

ISLAMABAD
2020

EFFECT OF SYSTEMATIC TRAINING ON TEACHERS' PERFORMANCE: AN EXPERIMENTAL STUDY

Iftikhar Ahmad

Reg. No.92-FSS/PHDEDU/S-12

submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in

Education at the faculty of Social Science International Islamic University, Islamabad.

Signature: _____

Co-supervisor: Dr. Shamsa Aziz

Signature: _____

Supervisor: Prof. Dr. N.B. Jumani

Forwarding Sheet

This thesis entitled "Effect of systematic training on teachers' performance: an experimental study" presented by Iftikhar Ahmad Reg. No. 92-FSS/PHDEDU/S12 in partial fulfillment of the requirements of a Ph.D. degree in Education, has been completed under my guidance and supervision. I am satisfied with the quality of student's research work and allow him to submit his thesis for further process as per IIUI rules and regulations.

Signature: _____

Supervisor: Prof. Dr. N. B. Jumani

Date: _____

Signature: _____

Co-supervisor: Dr. Shamsa Aziz

بسم الله الرحمن الرحيم

Dedication

This thesis is dedicated to my parents for their parental love.

Approval Sheet

Effect of Systematic Training on Teachers' Performance:
An Experimental Study

By

Iftikhar Ahmad

Reg. No. 92-FSS/PHDEDU/S12

is hereby accepted by the department of Education, Faculty of Social Sciences, INTERNATIONAL ISLAMIC UNIVERSITY, ISLAMABAD, in partial fulfillment of the requirement for the doctor of philosophy degree in Education.

Supervisor: _____

(Prof. Dr. N. B. Jumani)

Co-Supervisor _____

(Dr. Shamsa Aziz)

Internal Examiner: _____

(Dr. Azhar Mahmood)

External Examiner: _____

(Prof. Dr. Nasir Mahmood)

External Examiner: _____

Dated: 08-07-2020   (Prof. Dr. Manzoor Hussain Arif)

_____   _____

Chairman,   Dean,
Department of Education,   Faculty of Social Sciences,
International Islamic University,   International Islamic University,
Islamabad.   Islamabad.

Acknowledgements

Abstract

This experimental study was conducted to determine the effect of systematic training carried out in a step by step procedure on the teachers' performance. In this regard, estimated Potential for Improving Performance (PIP) of trainees was also determined. One of the main objectives of this study was to measure the experimental effect of systematic training in terms of marks improved as a result of systematic training. Potential for improving performance was computed as a need analysis tool to estimate the effect of systematic training. It was taken as a conceptual tool which can set the priority of conducing training among different groups of trainees. Pretest and posttest were conducted in order to determine the effect of systematic training. Although research literature is full of teachers' training but systematic training is still rare, especially in Pakistan. It was a true experimental study that focused on academic performance of secondary school teachers (SSTs) in District Rajanpur. The list of all male secondary school teachers (SSTs) in district Rajanpur was obtained. Sixty SSTs were selected through the simple random method. Treatment and control groups were equated on the basis of pretest scores. The experimental group was provided with the treatment of systematic training whereas the control group was not provided with any treatment. First, the required performance gap between trainer and trainees was measured through pretest then the training was conducted to fill this performance gap as mentioned in Human Performance Model (Aziz, 2013) by the International Society of Performance Improvement. After preparing the lesson plans, need based training was conducted through the lecture method, followed by discussions for a period of six weeks. Potential for improving performance (PIP) of all experimental subjects was computed with the help of the Second Leisurely Theorem by Gilbert (1996). A medium large magnitude (.626) of effect size was determined by Cohen's ES. In linear regression analysis, R Square was .523 to explain a portion of the posttest scores by the PIP. Results revealed that computing the potential for improving performance of teachers is a useful need analysis tool. It may be used to set the priority of conducting training among different groups of teachers. Such type of systematic training can be helpful to improve teachers' performance by using only the necessary money, time, and effort. As per the findings and conclusions of this study, it is recommended that the systematic training may be adopted more frequently in educational institutions. It may increase the performance of teachers by increasing their accomplishment and reducing the resources to be spent on their training. It is a need based training. Potential for improving performance (PIP) may be adopted as a conceptual tool for need analysis of training.

Table of Contents

List of Tables

List of Figures

Abbreviations

Abbreviation	Definition
ANOVA	Analysis of Variance
ASTD	American Society for Training and Development
CG	Control Group
df	Degree of Freedom
EC	Europe Commission
EG	Experimental Group
EMIS	Education Management Information System
ES	Effect Size
ET	Embedded Training
H0	Null Hypothesis
Ha	Alternative Hypothesis
HPI	Human Performance Improvement
HPT	Human Performance Technology
ID	Instructional Design
IER	Institute of Education and Research
KSAs	Knowledge, Skills and Abilities
M.C.Qs'	Multiple Choice Questions
O1	Observation One
O2	Observation Two
P	Page
p	Probability
PIP	Potential for Improving Performance
r	Estimate of the Pearson Product-Moment Correlation Coefficient
SAT	Systematic Approach to Training

SD	Standard Deviation
Sec	Section
Sig.	Significance
SRM	Simple Radom Method
SST	Secondary School Teacher
Std. Error	Standard Error
t test	A Statistical Test based on the Student's t Distribution

List of Appendices

CHAPTER 1
INTRODUCTION

A systematic training is based on a human performance system that has at least these five elements i.e. input, output, environment, feedback and outcome. Input, output yields quantitative results; feedback, outcomes yields qualitative results. It is a step by step training having a logical sequence. It is purposefully planned. Human performance technology has created the human performance model to enhance the performance of employees in which first step is to create gap between the actual level of performance and required level of performance. This systematic training was derived from the human performance technology; therefore, a pretest was conducted and the teacher who got the best marks was declared as exemplary teachers to adopt the gap between exemplary and other teachers. Here the performance was taken as the ration between accomplishment and costly behaviour. Gilbert's behavioral engineering model (1996) states six factors which contribute in performance. Three factors are environmental and remaining three belongs to the repertory of behavior of trainee teachers. Five factors out of six were almost same because all teachers were selected from the same school education department governing under the same rules and the almost similar kind of performing tools. Knowledge and skills of teachers were taken as independent variable which was manipulated by delivering systematic training to the trainees and effect of the systematic training was determined by improving marks in the posttest scores of experimental group who received systematic training. t test was applied between the posttest scores of the control group

and experimental group to check whether the difference between the experimental group and the control group was by chance or it was more than the chance occurrence.

This investigation was an experimental study, which was conducted to determine the effect of systematic training (carried out using the step by step procedures) on a sample of teachers'. The experimental study focused on the performance of secondary school teachers (SSTs) at District Rajanpur. The candidate undertook a pretest and post-test with both the experimental group and the control group, in order to determine the effect of systematic training. Potential for improving performance (PIP) of teachers was also determined.

In systematic training, first a performance gap is created between trainer and trainees as it is stated in human performance mode by International Society of Performance Improvement. Only to do work is not performance, when a teacher/worker does something as per given standards he / she is accomplishing. Then the resources spent on that accomplishment are calculated. The performance is a ratio of accomplishment to the costly behaviour. As per Gilbert's Behavioral Engineering Model there are six factors which influence performance. All the teachers were taken from the same organization so five factors were same. Knowledge and skills of teachers were enhanced through systematic training and its effect was determined on teachers' achievement was found in this training. The exemplary performers had better knowledge and skills due to which he was declared trainer. He shifted his knowledge and skills to the other trainers up to his own level. Two groups the experimental group and control group was equated after taking pretest. Experimental group was provided training which control group received no training. Then the effect size of training was determined through statistical tests which was .62.

Human competence is a function of worthy performance (W), which is a function of the ratio of valuable accomplishments (A) to costly behavior (B) (Gilbert, 1996). He stated this theorem to define and understand the system of human performance. It tells us that what is performance and what is not a performance. Systematic training is a subsystem to help out the performance system. Without the broader view of the performance system, systematic training cannot be understood properly Human performance model is a generic model of human performance technology which can be used by any organization to improve performance. Both the theorem and human performance model are the product of human performance technology that is they were used in this study.

Practitioners were making use of systematic and systemic approaches of training during the Fifties and Sixties, while they observed that only training could not solve all performance problems. Nickols (2005) argued that sometimes only training might be insufficient and unnecessary to achieve desired level of performance. It was needed to think outside the box. Systematic thinking and instructional technology helped them to introduce the field of human performance technology. "The field of human performance technology, which emerged from its parent field of instructional technology, is based on the realization that instruction is not a cost-effective solution to all performance problems" (Chyung, 2008, p. 5). Therefore, a performance based systematic view of training was adopted.

In performance based systems, all knowledge, skills and attitudes of the universe are nothing without performance. Gilbert (1996) stated that performance is the outcome of behavior. And in the performance context, behavior has six components. Three components of behavior are environmental: data, instruments, and incentives. The other three components rest with the performer: knowledge, capacity,

and motives. Training is considered the most economical solution of performance problems if it is low due to lack of necessary knowledge, skill, and ability needed for the job. Training and development solve the performance problems in the most economical and systematic manner. In this investigation, teachers' training was derived from the leisurely theorems of Gilbert, and human performance technology is called systematic training. Most of the training programs in Pakistan are not conducted keeping in view the background of the human performance system. They do not fill the gap between theories and practice properly while systematic training focuses on measurement of performance by utilizing the available opportunities to improve the performance level. Measuring human performance is a tough task. Having many needs, motivations to set objectives. Human activities are directed towards achieving the goals and objectives. Achieving the goals or objectives require doing something: performance of some actions, sequence of steps, some behaviours or procedures are processed. Precisely, two kinds of objectives were involved: one, the outcome of a process or a task. An objective of this kind of results; two, training sees whether the things are done to achieve desired results. Thus the first objective measures the results and the second is an objective of the performance that leads other results – "a performance objective". Here, the master trainer serves as the exemplary performer being the trainer; he tries to improve the performance of trainees up to his / her level.

As a pretest posttest control group design experimental study, it contributes a comprehensive knowledge and understanding of the systematic training. It is measured in quantitative terms and explains how much portion of obtaining marks can be explained by computing their potential for improving performance. This systematic training equally developed the conceptual tool to determine the teachers' potential for

improving performance. Potential for improving performance (PIP) may be used as a need analysis for training. In this study, the need based training was designed, developed and implemented. For the purpose, current level of trainees' performance was assessed and the required level of trainees' performance was fixed as per the level of exemplary performer. In this way the purpose of this training was to improve the performance of teachers up to the exemplary level. Estimated PIP based on pretest was assessed to fill the identified gap. Thereafter, potential for improving performance (PIP) of trainees was determined. Human performance improvement model, the performance standards by International society for performance improvement, the work of Thomas Gilbert for performance improvement, human performance system and systematic approach were the guiding stars for this training. Gilbert's first leisurely theorem defines competence. It also tells the basic function of worthy performance. It helps to improve the performance of employees/ teachers. Human performance technology has given us 10 standards to improve performance. Human performance model is a cyclic process to measure and improve the performance of employees/teachers. As this training was essentially based on Gilbert (1996) theorems, so the concept of performance and its measurement were taken from "Human Competence: Engineering worthy performance" Systematic training is a major shift from the behavioral centered approach to performance based approach. Human performance technology has prepared the following 10 standards to improve the performance of employees.

1.1   Introduction of Human Performance Technology

Instructional Technology is a major contributor of Human Performance Technology. Other subjects such as learning psychology, analytical systems, human capital, cognitive engineering, information technology, and feedback systems are also

included. "Human performance technology is the study and ethical practice of improving productivity in organizations by designing and developing effective interventions that are result-oriented, comprehensive, and systematic" (Pershing, Stolovitch, & Keeps, 2006a, p.6).

1.2 Standards of Human Performance Technology

Human Performance Technology identifies human performance barriers systematically and then provides the solution in a systematic and holistic way. It has ten specific standards which differentiate it from other disciplines. Key concepts of these standards are as under:

1.2.1 Focus on Outcome

Human performance technology focuses on end results. The participants are allowed to ask frequent questions, confirmations and reconfirmations in such a way that people share their visions and goals. Such types of job procedures are helpful to enhance productivity, efficiency and quality of work. It checks how much knowledge, skills and motivation is required for the job and whether the teachers are equipped-with such knowledge and skills. Human performance technology finds out a performance gap as an opportunity to improve performance. Present level of performance helps to plan need based interventions. The gap to fill the required level of performance is taken as the result of interventions introduced. Cyclic process continues to fill the identified performance gap. In this way, systematic interventions improve performance of teachers in an economical manner. Parents (as clients) can assess what is being provided more than others in academic achievement of their children as learners (primary clients). In this research study, marks obtained are as academic achievement,

Enhanced knowledge, skills, and capabilities of the workforce proved to be a good source of competitive advantage in an international market (McKinsey, 2006). If the teachers are lacking the necessary knowledge and skills, then the systematic training is suggested in order to improve their performance up to the exemplary level of performance. Here 'exemplary' refers to the targeted/ high standard learning based on higher order learning.

1.2.2 Take a System View

Taking a systems view is essential, because education like business is a very complex system that affects the overall performance of those who work within it. It may be noted that technical theorems and strategic structures in education have generally been borrowed from business, military and strategic planning, as a measure of efficiency, scalability and stability of the product or performance based learning.

It is important to differentiate the systematic method from a process model. The process model consists of inputs and outputs with feedback loops. A systematic approach implies interconnected complicated or simple functions which can be the outcome of all components together. Take a system view identifies the subsystem which come close in a logical manner to make an organization (ISPI, 2012). The effectiveness of every unit depends on how it fits into the whole and the effectiveness of the complete as nicely depends on the manner each unit features. A systematic approach considers the bigger surroundings that affect performance as a whole. The environment includes inputs, expectations, constraints, and consequences. The system worth is the quality that makes training more beneficial for trainees.

1.2.3 Add Value

This is an assessment that students and their parents (as primary clients) ask an organization (educational institution) to make. Parents are offered a technique that

allows them to understand the results of their selections, appropriate measures, perceive limitations, and tradeoffs.

Human performance era calls for a focal point on intermediate desires medium of instruction along with immediate improving performance, Its success is measured within the enhancements of preferred enterprise consequences (such as sales, profitability, and market proportion). Thus, in economic terms and higher ordered learning, leading to higher educational achievement universality and employability in educational attainment and prosperity. Alignment of the performance of teachers for the schools outcome is vital. Expert practitioners add value to facilitate their customers by producing higher quality and products (ISPI, 2012). Measurement of results at each of those stages serves important purposes. Firstly, it communicates the significance. Secondly, it assesses the amount of performance improvement.

1.2.4 Partnership

Performance improvement professionals and experts always work in partnerships with clients (primary and secondary) and other skilled persons. Their collaborative work takes all the stakeholders (all groups: parents, community and society at large) and clients' (teachers and parents) opinion in decision making. They give value to the opinions of specialists in their relevant areas. Work in partnership also gives the sense of ownership and belongingness.

Practitioners of human performance technology collaborate with all stakeholders (ISPI, 2012). In a collaborative work, goals are shared to precede the next process. Implementation strategies and responsibilities are also shared with all the stakeholders. In this way, interactive knowledge, skills and abilities are respected, shared and close relationships are established by the learners (as primary clients) colleagues and educational management (as secondary clients).

1.2.5 Be Systematic in the Assessment of the Need or Opportunity

Analysis of performance is an element that is executed in the beginning of the project. Analysis of needs and opportunities in the prevailing situations, internal and external pressures are carried out in a systematic manner. Competent practitioners conduct need analysis to determine the current level of performance and required level of performance (ISPI, 2012). This analysis determines deficiencies and performance gaps that are to be addressed. This process generates a statement which tells about the current state, the desired or required state in the future and the rationale of different actions and non-actions.

1.2.6 Cause Analysis

Analysis of work and the workplace is carried out systematically in order to identify the variables that limit performance. The cause - analysis determines the reason why the gap exists between required performance and existing level of performance. Some causes might be very obvious and some might be due the lack of knowledge and expertise of teachers. The outcome statement clearly states that why the required level of performance is not achieved.

Analysis is conducted to look for the underlying causes (ISPI, 2012). Analysis of job identifies the specific duties and tasks which teachers have to perform. It also identifies the level of knowledge, skills and abilities required to perform the duties of teaching. It measures the performance of teachers in the perspective of their objectives. It also analyses the variables/factors that are necessary for a successful performer/teacher.

1.2.7 Design

Design of the solution of identified barriers in performance and problems used to be systematic. Design further identifies all the key attributes of solution. The output describes the features, attributes and necessary elements of the solution. The

practitioners of human performance technology design solutions and the plan to apply them (ISPI, 2012). It also tells us about the resources required for the solution. Thus the design determines the framework for action based performance.

1.2.8 Development

There should be systematic development of solution and all its elements. Development includes improvement or creations of some or all elements of the solution. An individual or a group can develop the solution process. The training can be developed by changing tools, redesigning the workplace, reorganizing the process or redefining the objectives of training. Solution to the problems is also implemented systematically. Competent practitioners develop some or all the solutions being the member of development team (ISPI, 2012). Change in behaviour is also expected to produce better tangible results. This specific standard is about helping the clients, adopting new behaviours and using appropriate tools.

1.2.9 Implementation

Designing an implementation phase of starting newly designed systematic training is crucial. First, it is tried out on a small scaled number of teachers to make sure it achieves the stated outcomes. The old and the new training might go parallel for some time if the new training has not different material to be delivered.

The techniques of change management support to replace the old training with new one. Trainees concerns are addressed by answering their critical questions. New training is implemented to improve the performance of employees / trainees.

1.2.10 Evaluate

Teachers should be systematic in the evaluation of results and processes as is described in Human Performance Model by the International Society for Performance Improvement. Evaluation process finds out the overall effectiveness and proficiency;

what was carried out, how it was executed or carried out, the level to which the proposed solution creates the required results. It compares the cost energy and time to the benefit achieved. This performance standard is about identifying and availing of the opportunities. It is a continuous process to collect data, analyse it and to identify needs, options and results.

Human performance technology (HPT) addresses performance problems by adopting a systematic way. The same is also validated by Piskurich (2002) "HPT is a systematic because it consistently follows a process for articulating business goals, diagnosing problems, recommending and implementing solutions and evaluating interventions" (p4). The systematic ways suggested by Sanders and Ruggles (2000) are also in-line with the other theories about Human Performance Model.

1.3 Rationale of the Study

Literature is full of the research that determined the effect of training on academic performance, but the concept of systematic training of teachers is still less utilized in Pakistan, particularly. In most of the educational studies, usually perceived measurement of teachers is carried out. The present study did not use indicators, and questionnaire which is common in educational research. The systematic training suggests need based and most economical training of teachers which is the need of the time, particularly in Pakistan. This study also comes close to the theory and practice of systematic training from performance point of view. In the school education department, many types of training are being conducted like school leadership development training program (SLDP), induction training, promotion linked training (PLT), early childhood education (ECE), Punjab education and English language initiative (PEELI) but their impact factor has never been determined. They are not performance based trainings. That is why the need for a systematic training was felt.

Another important motive behind this study was to properly understand the effect of systematic training in secondary school teachers of Rajanpur.

1.4   Statement of the Problem

More specific issues include: the generally poor quality of teachers with lack of observation of standards for recruitment, evaluation of performance and teaching practices (Punjab School Education Sector Plan, 2013). In Pakistan, usually traditional modes of teacher training are followed. The innovative methods like systematic training are not tried out in research which lead to the poor quality in teaching. This study, therefore, aimed at exploring the effect of systematic training on secondary school teachers' academic performance through an experimental investigation in district Rajanpur. Academic performance of teachers and a clear way of measuring money, effort and time spent on the training were to determine.

1.5   Objectives of the Study

In the perspective of academic performance-based attainment of teachers, this study aimed at:

   i.   To find out the effect of systematic training on learning performance of teachers in their job-related tasks.

   ii.   To compute teachers' potential for improving performance (PIP) and to set up the linear regression equation for predicting their posttest achievement.

1.6   Research Questions

The following questions were addressed:
1. Do the Secondary School Teachers (SSTs) trained through systematic training and the untrained ones tend to score differently on the posttest?

2. Does the higher Potential for Improving Performance (PIP) of teachers cause the higher posttest scores?

2.7Hypotheses

1. Research hypothesis: H_a: $\mu_i > \mu_j$ (The trained teachers' mean score was more than the teachers' who did not receive training).

   Null hypothesis: H_0: $\mu_i \leq \mu_j$ (The trained teachers' mean score was equal to or less than the teachers' who did not receive training).

2. Research hypothesis: H_a: $\beta_{pip,m} \neq 0$ (The Teachers' regression coefficient of PIP and posttest score was not equal to zero).

   Null hypothesis: H_0: $\beta_{pip,m} = 0$ (The teachers' regression coefficient of PIP and posttest score was equal to zero).

The participant of training who performed the best in pretest was trainer/exemplary performer in this training. It was the knowledge, skills and health of the best performer which made him the exemplary. All other teachers' performance related variables were kept constant by adopting "pretest posttest control group design" during the training. The exemplary performer transferred his knowledge and skills to the trainees in order to enhance their performance like him. "In general, the smaller the PIP, the less possibility there is to improve performance and more difficult it is to reduce the PIP to 1.0." (Gilbert, 1996, p. 31). The lower performer had a more performance gap than the higher ones.

1.8 Significance of the Study

Most studies about training only focused on the relationship between training and performance. This study explained the portion of learning performance based on PIP of teachers as well. The study was conducted to set up the linear regression equation in order to estimate their posttest scores. It will contribute to compute the potential for improving performance (PIP) which is a conceptual tool to predict posttest scores even before conducting the training.

The literature on the use of human performance models to improve the training process performance of trainees in Pakistan is not sufficient. This study may lead to develop a systematic training which may improve the performance of secondary school teachers at Rajanpur by using only necessary time, effort and money. They can measure the benefits and the cost of training in terms of time, effort and money in a better way.

In order to improve the performance, Gilbert has designed a model to improve the performance of employees. The Six Boxes in Gilbert's model provide the clear and comprehensive picture that where resources and energy should be spent to prevent educational managers training techniques and strategies that are not effective. In this way Head Teachers, District Education Officers and Secondary School Teachers can take benefit of this study. Some significant features and uses include:

This study provided empirical data to understand the increase of productivity (increase in learning performance) through systematic training. Managers of different institutes may like to use the results of this study to identify potential-opportunities of conducing training. The study can be helpful in saving unnecessary resources for training. It can promote the use of systematic training to solve the performance problems of society. The university departments of education and Qaid-e-Azam academy for educational development Punjab and the country at large can offer a course content in this area to enrich training programs for prospective teachers INSETS. Equally, HEC Punjab curriculum and text boards can use the concepts, structures and innovative domains to build up the instructional material for teachers. The results of this experiment may add further evidence in building up the model in a theoretical framework.

1.9 Delimitations of the Study

This study was focused on learning performance of teachers for job-related tasks, variables which are recommended by Human Performance Technology and Gilbert (1996) to improve their performance. It was conducted in a controlled environment for the purpose of academic research. The selected content from "Human Performance Technology: Engineering Worthy Performance by Gilbert (1996) was delivered as the treatment whose effect on teachers' training was measured. This study took obtained marks instead of real performance at the work place which may had better measurement like number of unit products.

1.10 Operational Definitions of the Terms for this study

In this study the following terms are taken in the meaning as under for this study.

Human resource management is the way organizations manage their staff and help them to develop to execute organizations' missions and goals successfully.

Human resource development is the integration of individual, career and organization development roles in order to achieve maximum productivity.

Training is a type of activity which is planned, and systematic which results in enhanced level of skill, knowledge and competency that are necessary to perform work effectively (Betcherman, 1992).

Development is a broad ongoing multi-faceted set of activities aimed at bringing someone or an organization up to another threshold of performance, often to perform some job or a new role in the future.

Employee performance is defined as the outcome or contribution of employees to make them attain goals while performance may be used to define what an

organization has accomplished with respect to the process, results, relevance and success. It is the achievement of specific tasks measured against predetermined or identified standards of accuracy, completeness, cost and speed. Employee performance can be manifested in improvement in production, ease in using the new technology, and highly motivated workers.

Engineering: The control of human behaviour and performance.

Human: the individuals and groups who make up our organizations.

Performance: activities and measurable outcomes.

Technology: a systematic and systemic approach to solve practical problems.

Rummler and Brache's (1992) definitions established in research were adopted, as given below:

Knowledge: essential knowledge and facts to performing a job or task.

Skills: abilities to do things associated with successful job performance.

Attitudes: feeling about performance that is voiced to other people.

Abilities: present capabilities to behave in certain ways.

Job Context: the environment of the job, including supervisor(s), equipment and tools to be used, customers, and co-workers.

Oxford Advance Learners Dictionary (Ed. 9th) defines the following terms and uses read as such:

Repertory: the work that can be done in a short time.

Intervention: to become involved in a situation in order to improve it.

Systematic: The systematic (adjective) means to do something using step-by-step procedures or consulting a system.

Systemic: It is narrower in definition and can be defined as wide or very deeply engrained in the system. It usually describes a general behaviour, habits or processes that are very difficult to reverse due to the reason that they are built into a human system.

Systematic training: A step by step training having a logical sequence. In this study it is derived from human performance technology.

Accomplishment: Something that has been achieved successfully as per specified standards.

CHAPTER 2
REVIEW OF RELATED LITERATURE

The major purpose of this literature review was to survey previous research studies in the context of human performance technology on "effect of systematic training on teachers' performance: an experimental study". This helped the researcher to collect the relevant data for primary resources. The previous research work on teachers' training served the following three purposes. Firstly, it helped to construct the test for data collection. Secondly, it helped to limit literature review. Finally, it helped to develop the critical thinking throughout the study. The secondary data sources provided the necessary background knowledge and understanding, helpful to fulfill the objectives of the present study. As the present research focuses on the improvement of performance of teachers through systematic training, based on human performance technology, it gives only the background of variables which are suggested by International Society of Performance Improvement and Thomas Gilbert. This formed the specific intention of literature review. The relevant research work was found in the literature of a number of academic domains, including instructional technology, education planning and management, human performance technology, training and development, systematic training etc. Human performance technology integrates workable things from all these disciplines.

2.1   Systematic Training
The systematic approach of training improves the variables that are used for a successful job performance. "With the growing complexity and size of factories, expanding markets that exerted a strong demand for an increase in the volume of production, and a rising engineering profession, there emerged a new and pressing concern to systematize the administration, control, coordination, and planning of

factory work"(Zuboff, 1988, p. 41). A systematic training consists of a system of training. Human performance system has at least these five elements i.e. input, output, environment, feedback and outcome. Input, output may be in numbers while feedback and outcomes yields qualitative results. It is a step by step training having a logical sequence. It is purposefully planned. It creates a system-worth which distinguishes from the other trainings. In a systematic training, firstly we understand the prevailing system of performance and then we introduce a systematic intervention to improve the performance of teachers/trainees. Systematic training increases productivity in economical ways. It tries to decrease the amount of time, effort and money. It develops knowledge and skills of individuals that are needed to perform the job. McCord (1976) argued that a number of instructions were developed after the World War I. These included; assessing schooling needs; forming groups for training; organizing activities, creating short intervals and developing a feeling of loyalty in non-public interest in the process of training.

Human performance technology decreases the cost of training by removing misalignment between training material and workplace activities. Odiome (1996) advanced a theory of human performance technology in late 1970s. The theory states that every performance problem cannot be resolved by training; the training can solve the performance related problems which are due to lack of knowledge and skills. Simply knowledge and skills are not sufficient to yield high performance. If users are not using good quality of equipment needed for the specific job requirement like computers, they may lack motivation. Thus motivation is an important ingredient.

Instructional designers speedily adopted the concept of human performance technology proposed by Gilbert. By 1989, the National Society for Performance and Instruction deployed many instructional designers to enhance and enrich human

performance technology concept. The American Society for Training and Development which serves in workplace learning also adopted the Human Performance Technology. Performance technology and performance improvement are twin terms that are used interchangeably. The professionals have been providing services in the workplace learning and improving knowledge and skills with the ultimate aim of improving their performance. Both play a profound role.

2.2   The Behaviour – Great Cult

Human behaviour is unstable. A teacher is a human being. His performance is at variance. Therefore, many teachers always do not perform up to the given level. This type of complex behaviour sometimes is called "activity trap". "I have elevated this "trap" to the higher status of a cult" (Odiome, as cited Gilbert, 1996, p. 7). Here the focus is on controlling behaviour. In such approach, teachers are not usually judged by their performance rather by their behaviour. In easy words, behaviour represents their attitude, punctuality and hard work while in performance domain, we need their performance. The outcome of behaviour is performance which is eventually required. Behaviour itself is not our goal. It is a mean, not an end in itself. Therefore, we should judge our teachers by their profound performance, not simply by their behaviour.

Gilbert (1996) has divided behaviour into three major sub cults. First, an amount of energy is in the form of hard work, self-denial and sacrifice; second, knowledge based theories, skills and information, and lastly, motivation estimating willingness and eagerness, and positive attitudes of workers. In the real world, both behaviour and potential of behavior cannot be measured easily. And as per our operational definition of the performance, the things that are not measureable cannot

20

be called performance. Therefore, behaviour may or may not be an early stage of performance.

Gilbert (1996) argues that the "work" is most powerful part of the behaviour , which concentrates on the amount of energy spent. Lazy people generally are ignored. The sub cult of work was raised to its apex in the Nixon administration, when Sunday work was instituted, the swimming pools were converted into press rooms, even the 50-mile run was viewed as separate activity from individual's official labour work. After Nixon, the Ford organization needed to make diligent work and penance the national approach. After that, President Carter appears to be committed to hard work.

The Gilbert (1996) says that he can collect a number of incidents in which people were fired that they were not doing hard work while nobody calculated their accomplishment. In a number of cases, people were promoted and awarded due to the reason that they gave more energy and time to their jobs. You are interested in your work if you come on time and look busy, you are considered a hard worker. However, this type of attitude can be translated into unpleasant business in some cases. And mostly such behaviour breads wastefulness, incompetence and laziness. We should always reward people for their profound performance, not simply for their hard work. As sometimes people look busy but yielding nothing

2.3   Human Performance System

Mainly organizations, irrespective of whether they are learning professionals, or not, are human performance systems. Moreover, all of them are dominated by employer-supported training. Miller & Osinski (2002) describe that designing and development of a training program has five phases in a sequence: needs assessment, instructional objectives, design, implementation and evaluation. They felt the need to

21

look outside the box. The need for systematic training was felt in the case of performances of teachers where it was found low due to their lack of knowledge and skills.

Everything in this world cannot be taken as a system. Human performance system has at least these five elements (i) input (ii) output (iii) environment (iv) outcome, and (v) feedback. It measures the performance of each and every element. Human performance system shares the strengths and non-overlap weaknesses of its teachers. It connects all teachers in a way that they support and facilitate each other. Feedback loops play a very supportive role to minimize the uncertainty in human performance.

Performance is a measurable outcome of an activity resulting in worth wideness. When a painter paints something as per given standards, when a driver covers some distance with required safety; they accomplish something which is the necessary condition of performance. "Human competence is a function of worthy performance (W), which is a function of the ratio of valuable accomplishments (A) to the costly behavior (B)" (Gilbert, 1996, p.18). It is called first leisurely theorem of Gilbert. The following main points emerge from this theorem.

- The true value of human competence lies in the value of accomplishment while reducing the amount of time, money and effort.

- Great pieces of work, knowledge and motivation may be considered as unworthy performance without at-least equal accomplishment.

- In the presence of costly human behaviour, even great accomplishments are not worthy performance.

Human performance model addresses the root causes of performance problems by identifying and analyzing it systematically at an organizational level, it

provides a foundation to identify, analyse and create performance gap. Many root causes of human performance problems have been identified which can be addressed by a number of management solutions (Rothwell, 2015). Once a root cause has been identified, an appropriate solution may be selected. It helps to design and develop cost-effective and workable solution to fill the gap. It measures results continually in a cyclic process and each cycle decreases the performance gap between trainer and trainees; process and product and quantity and quality.

The most sustained performers in the context of a particular accomplishment are the exemplary performer. The exemplary performer is not necessarily a hard worker, adequately qualified and highly motivated one. Both the individual potential as well as group potential for improving performance can be quantified by identifying exemplary performer. Gilbert (1996) states that the exemplary performers do things more easily than others do them.

All organizations consist of systems and subsystems. But everything around us is not a system. Every human system has some enabling elements and steering elements. Wittkuhn (2004) describes that there are at least five elements in a system: input, output, outcomes, feedback and the environment. There is a dense interaction between the elements of a system. By changing the way of interaction among different elements of a training system, the learning outcome can be changed. Training has a systematic and systemic approach. Training improves not only knowledge and skills of teachers, but also their motivation level. "Systematic approaches are analogous to the act of touching a spider web: touching a single strand of a spider web makes the whole web vibrate" (Rothwell, as in Chyung, 2008, p. 11).

SUPPORT
• Workflow logical?
• Instructions clear?
• Processes managed?
• Tools and systems adequate?
• Environment clean, safe, and supportive?

PERFORMANCE SPECIFICATIONS
• Do they exist?
• Aligned to business drivers?
• Do employees know?
• Are they attainable?
• Do they drive assessment and development?

CONSEQUENCES
• Aligned to specifications?
• Meaningful?
• Fair?
• Consistently applied?
• Timely?

INPUT → PERFORMER → OUTPUT

CAPACITY
• Physically capable?
• Mentally capable?
• Emotionally capable?

SKILLS & KNOWLEDGE
• Are skills periodically assessed?
• Are skills continually developed?
• Do employees know how to do their job?
• Do employees know WHY their job is important?
• Do employees know where to get job-related info?

FEEDBACK
• Do performers receive feedback?
• Expressed in terms of specifications?
• Relevant?
• Accurate?
• Timely?
• Specific?
• Easy to understand?
• Actionable?

Figure 1 Human Performance System **(Rothwell, 2008)**

These are six variables that affect the performance of a performer. If the input is not up to the required standard, the performer will have to do more work. The performer should possess required skills and knowledge for a specific job. How much the performer is supported by his organization level, work group level and individual level? The targets and performance specifications are always clearly measurable. The performer should know how these performance specifications are attainable. The consequences of performance should be contingent upon performance of teachers. The teachers should know what they will have if they meet the performance standards. On the other hand, salaries, incentives, acknowledgment recognition given without proper measurement can produce even worse effect on performance. The management converts external feedback into their expectations that they have from their teachers. The external and internal feedback should be specific, relevant, timely, easy to understand, and actionable.

2.4   Performance Gap

As stated earlier, systematic training focuses on measurement and analyses the performance gap even before starting a training program in the world. All organizations (Training Institutions) have their vision, mission, values, goals, strategies and critical issues to measure their desired / required level of performance. Then by evaluating the real environment of an organization shows us the actual level of performance of a particular educational institute. There is performance gap between desired workforce performance and actual state of workforce performance (Chyung, 2008). The difference in actual and desired level of performance creates a performance gap that is to be filled by selecting the suitable interventions after a careful need analysis. It is a way of human performance measurement given in Human Performance Model.

2.5   Cause Analysis

Cause analysis in the human performance model is based on Behavioral Engineering Model of Gilbert (1996). Performance analysis yields valuable information about the organizational environment. Gilbert's Behavior Engineering Model /cause analysis explains us the direct and indirect causes of this performance gap. This performance analysis is based on six variables that are rooted either in the environmental support or individual performance.

Table 1 Gilbert's Behavior Engineering Model

	Information	Instrumentation	Motivation	
Environmental Supports	1. data	2. Instruments	3. Incentives	Rooted in environment

Person's Repertory of Behavior	4. Knowledge	5. Capacity	6. Motives	Rooted in individual performance

(Gilbert, 1996)

Many factors can influence the training transfer rate. For example, if the training material is not clear as per the requirement of specific performance, it is unlikely to improve the performance up to required level. Content validity is a prime condition of training package. In another case, if performers are compensated and recognized for applying the skills or tasks that are not aligned with those which were delivered in training, then they are not very likely to change their behaviors (Luthans & Youssef, 2007). There has been a significant size of literature that deals with the causes of historically poor performers. There are several factors that influence the transfer rate of training. They change with the change in situation and context of performance. Effectiveness can be measured in the form of accomplishment (Etzioni, 1960). In this way, historically low performance can be linked to internal merit of teachers' skills, abilities and attitudes, external variables also affect the training transfer rate. But the literature of training does not give us any consistent theme. In some cases, low transfer may be the result of low motivation, attitudes, and self-efficacy (Cheng & Ho, 1998). In other situations it may be due to inappropriate support and reinforcement by the supervisors.

2.6   Potential for Improving Performance (PIP)

Potential for improving performance is taken as an opportunity to enhance our performance. The second leisurely theorem of Gilbert states that the "typical competence is inversely proportional to the potential for improving (the PIP), which is the ratio of exemplary performance to typical performance. The ratio, to be

26

meaningful, must be stated for an identifiable accomplishment, because there is no general quality of competence" (Gilbert, 1996, p.30).

In a systematic training, exemplary performer performs more than others due to his or her knowledge and skills, if all other performance variables such as the use of technology, leadership, etc are kept constant. The performance of trainee teachers can be enhanced to an exemplary level by shifting exemplary performer's knowledge and skills to them. Performance gap created in this systematic training (like Human Performance Model) is helpful in measuring the performance. It estimates how much gap is there and how much benefit can be obtained to fill this gap. It is a way of measuring teachers' performance. "The lower the PIP of any person or group, the more competitive that person or group is" (Gilbert, 1996, p. 30).

2.7   Exemplary Performer

"I shall define exemplary performance as the most sustained worthy performance that we can reasonably expect to attain. This need not be the performance of historically the best performer" (Gilbert, 1996, p. 40). Human resources are ultimately able to make any dynamic and progressive organization. Competent teachers can enhance the productivity by their innovative ideas. They can think statistically and can reduce the mistakes by collecting right data, making right analysis, interpreting the data messages properly. The management identifies the teachers' internal knowledge and capabilities that add value. In order to select an exemplary performer, we follow the human performance model. According to the model, there would always be a performance gap between trainees and exemplary performer.

2.8   Systematic Training

Everything around us is a part of a broader system. Therefore, a system is not a generic property of anything or any human being. It is a way to make a system and subsystems internally linked to each other. They share their strengths and non-overlap weakness. Wittkuhn (2004) argues that the performance of human beings working in a system is always better. When we apply a systematic thinking, the most important is the interaction of different elements of a system. Performance can be enhanced by changing the way of interaction at work place. A human system has measurements, internal and external loops of feedback. Uncertainty in human performance can be minimized by measuring performance and continuous feedback. Management has clear expectations from their teachers. The teachers are already told how their performance is measured and why. Management translates the feedback into their expectations that they have from their teachers. In an ideal human performance system, customer's feedback, management expectations and teachers' performance are aligned. The systematic training improves the measurement of performance of teachers at each and every step. This is purely a technical training to improve the performance of teachers.

2.9   Delivery of Systematic Training

After knowing the needs of teachers, the content material can be designed and developed. Then the training material can be delivered as per the requirement of contents. Delivery of training is an important aspect of training. Instructional methods mostly used are explained in the following figure:

Instructional Methods				
Presentation	Demonstration	Tutorial	Discussion	Drill and Practice

Flow of information/Material	Practical	Interactive	Exchanging views, experiences	Doing
Oral explanation	Hands on activity	Workshops	Seminars	Acting
Use of aids, illustrations	Explanation by doing	Apprenticeship	Buzz activity	Practicing
P&E media		Mentoring	Working in groups	Handling
Media		Coaching	Assures clarity of concepts, contents structures	Lab activity
Exemplification.				Language material
				Lab work, science, math, …………… ……………

Figure 2 Instructional Methods

Presentation is a one way flow of information / training material. It is oral and typical, but can be reinforced by visual aids, lectures, oral presentations, video clips; radio and television programs. More expertise is required to demonstrate rather than only presenting. It includes a teacher demo in class. Several possible questions and doubts of trainees are addressed in the process of demonstration and dissemination. Tutorial is a two way interaction between tutor and learners. In tutorial workshops, learners also get control of the flow of training programs. Apprenticeship, mentoring and coaching are included in tutorial examples. In discussion, teacher and learners exchange their views. Discussion is a deep understanding process and is capable of identifying even new aspects of learning. Seminars, Buzz groups are included in discussions. Discussions are usually very effective in the sense that trainees make their concepts clearer as per their own demands in this way. In drill and practice method, learners practice their acquired concepts and skills time and again to improve their clarity. Memorization, language labs are the examples of drill, practice and delivery of training contents.

2.10 Aims, Objectives and Outcomes of Training

The principal question from trainees should not be "what are the things that you did do to obtain your training" but rather "what you are able to do now that you have obtained from your training" This is a performance based, market oriented and classroom based learning and consumer based approach. It is more flexible in the matter of lifelong learning, informal and non-traditional learning and other forms of learning experiences.

Traditionally, training modules and programs were designed on the basis of the content of the course. Teachers were to decide on the content of teaching planning and assessment. The approach was based on the teachers' input and an assessment that how much study material trainees had assimilated. The course content would be delivered in a series of lectures. This teaching approach has been called teacher-centered approach. According to Gosling & Moon (2001), it may be difficult that what the trainees have to be able to do to pass the training program.

Later on, a shift from the "teacher centered" to a "student centered" approach was observed in international trends. This approach focuses on the trainees' performance. The instructional objectives were developed carefully to define learning outcomes more precisely. Kennedy (2006) argues that the learning outcomes of a training program are the estimates about what a trainee/learner is expected to know, understand and / or be able to demonstrate after successful completion of a training program. The aim of training program is based on general statements of teaching instruction. It indicates what the teacher is expected to cover. Aims usually refer to the teacher's point of view to indicate the direction and general content of training. The objectives of a training module are usually more specific statements of intended teaching. They cover one specific area of intended learning outcomes.

2.11 Learning Outcomes and Competencies

Competence is not clearly defined in the literature. Some individuals take a narrow view and associate competence just with skills acquired by training. (Kennedy, 2006). The work of Benjamin Bloom (1913 – 1999) was found very important to write learning outcomes. Bloom being a gifted teacher carried out research on taxonomies of learning. He believed that teachers should meet these objectives of learning by describing lessons and tasks. He identified three domains of learning – Cognitive, Affective and Psycho-motor. He founded an order of complexity within each of these domains. He did most of the work in cognitive domain where he made classification of the thinking process of just recalling and remembering facts up to doing analysis and evaluation. His book namely "Taxonomy of Educational Objectives: Handbook 1" is being widely used in preparing the curriculum and evaluation material. His taxonomy gives a framework to the learners to move towards more complex levels of understanding. Bloom arranged cognitive domain in the following six successive levels in a particular order, from easy to difficult. Bloom's original and revised taxonomy is explained in the following figure:
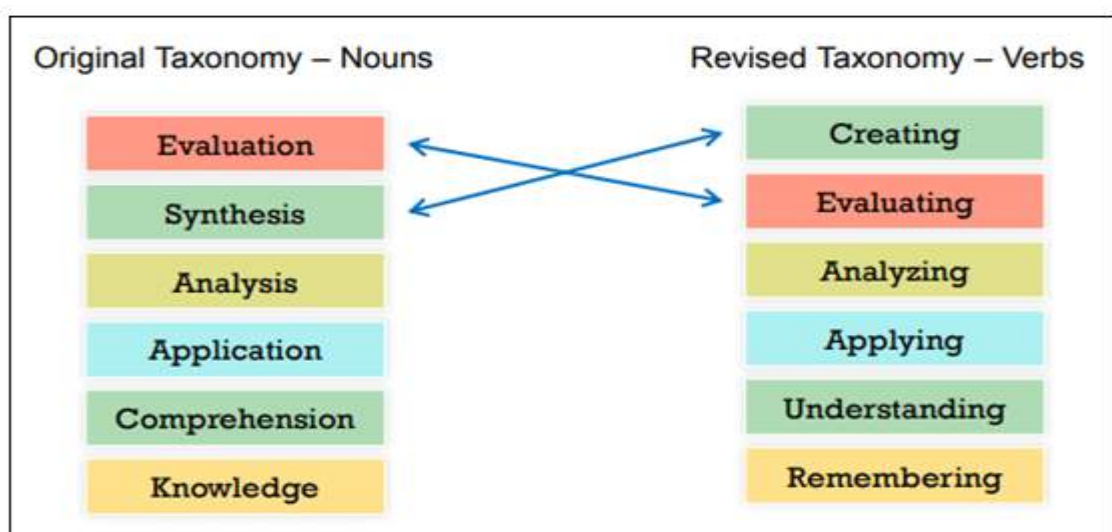
Figure 3 Revised Bloom's Taxonomy
(An Overview of the Revised Bloom's Taxonomy - Applying it to E-Learning, 2019)

2.12 Learning Outcomes in the Affective Domain

Bloom's taxonomy is famous for cognitive domain which is widely used in the curriculum. Bloom and his Co-workers also did research on the "affective domain". The emotional components of learning are addressed under this domain. These emotional components range from simple willingness to receive information to summation of ideas, beliefs and attitudes.
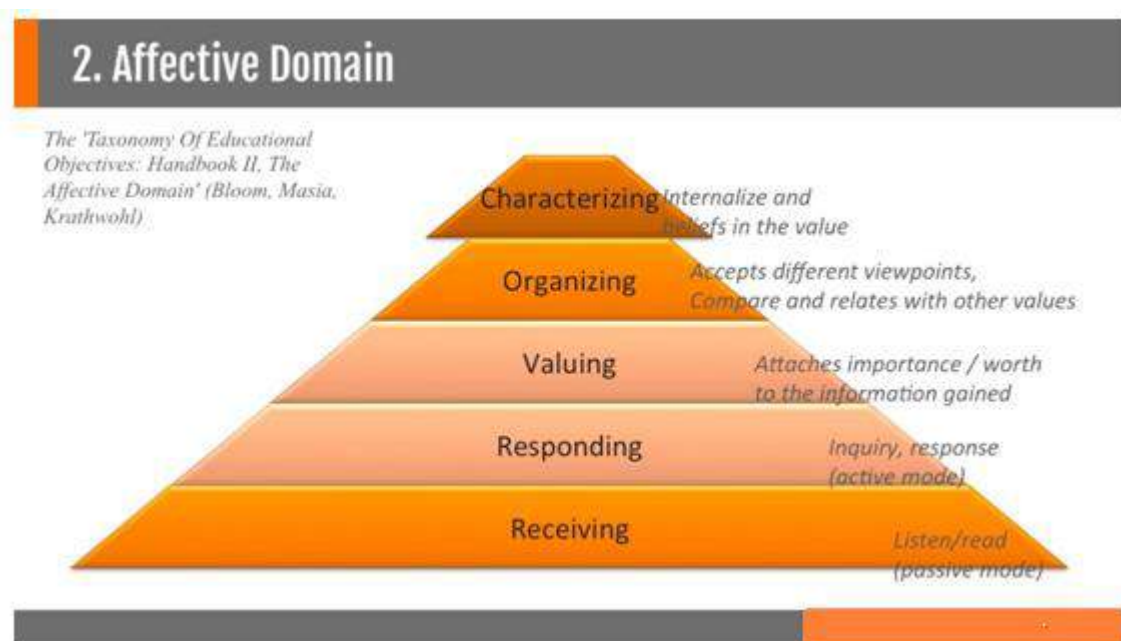
Figure 4 Affective Domain

(What is Bloom's Affective Domain - PIQC: Lec 20 of 125 by Dr. Kamran Moosa, 2017)

Bloom and his colleagues divided emotional learning in the following five major categories:

2.12.1 Receiving

It is a willingness to receive information. The individual shows his / her agreement and commitment to serve, listen to others compatibility, and show sensitivity to social issues and problems.

2.12.2 Responding

It is the individual activity participating in learning. Individuals show interest in the subject. They agree to give a presentation, take active part in class discussions, and feel good by helping others.

2.12.3 Valuing

This ranges from simple acceptance level to commitment level. For example, an individual likes the democratic system instead of an authoritative government.

2.12.4 Organization

The individuals having different values resolve their conflicts between them and internalize the common values. They know the value of balance between rights and responsibilities in a democratic society. They hold themselves responsible for their own behaviours. Learners accept professional ethical standards, moderate their behaviour to a value system.

2.11.5 Characterizations

This is the stage where the individual adopts a value system in terms of his / her belief, ideas and attitude which distinguish him / her from others. On the basis of their value system, others can predict one's behaviour. An individual is confident to perform individually, displays a professional commitment to the ethic values and practice, shows individual, social and emotional judgment. Such individuals also maintain good health habits. The major categories of affective domain are as under.

2.13 Learning Outcomes in the Psychomotor Domain

The psychomotor domain is the Co-ordination of brain and muscle activity whose outcomes are physical skills. The study of literature reveals the fact that this domain is comparatively less developed than cognitive and effective domains.

Psychomotor domain can be implemented in areas like laboratory science subjects, health and art, physical education, drama, etc. Bloom and his team observed lack of experience in teaching and promoting these skills. A number of authors have suggested different versions of taxonomies to explain the skill development and co-ordination. For example, Dave in 1970 proposed a hierarchy of five levels.
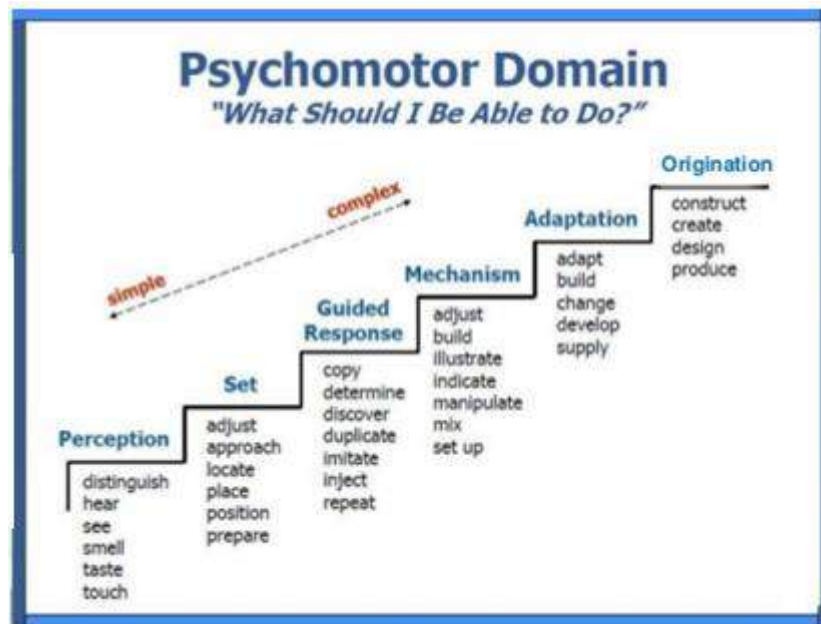
Figure 5 Psychomotor Domain (Psychomotor Domain of Learning, 2013)

Observance and copying of the behaviour of another person is called imitation. This is considered the first step in learning a complex skill. It is the ability to perform certain actions and skills by following instructions. This is the ability to carry out a task error free in the absence of an original source. The attained skills' proficiency leads smooth and accurate job performance.

2.14 Evaluation of Training Programs (Kirkpatrick)

A comprehensive systematic evaluation of training programs was offered by Kirkpatrick (1975). He came with the idea of four levels of training programs

(i) Reaction (ii) Learning (iii) Behaviour (iv) Results. As a father of four levels of education, he explains his model can be helpful due to these three reasons:

1. To know the reasons that can improve future programs.

2. It helps to decide whether the training program should be or should not be continued.

3. It gives justification of training programs.

Fundamental principles of Kirkpatrick evaluation include:

1. The end is the beginning. He found this concept that effective training evaluation begins before the program start.

2. Trainees must begin with desired results that determine what behaviour is needed for the accomplishment.

3. Then the trainees determine the nature of attitude, knowledge and skills so needed for effecting behavioral changes.

4. Finally, presenting the program availing the participants to learn more and react to the program. Thus relearn-ability and a teach-ability form the key concepts.

The important points of this model are explained in the following figure:

Characteristics Kirkpatrick Levels of Evaluation

Reactions	Learning	Behaviour	Results
Assessing learning experiences Ensuring learner's motivation in training & interest	Measures the knowledge required skills improved, attitude changes Outcomes measures as targeted goals	Measures the transfer of training as new ways Focuses on application & behavioral changes	Criterion based factors; Q & QL Focuses on improved performance

Component based reactions; instruction, topic presentation and styles	Focus on learning objectives

Figure 6 Kirkpatrick's Four Levels of Learning Evaluation

2.13.1 Results of the Organization

How much has training increased productivity, quality or decreased costs? It is a systematic way to measure the effectiveness of training programs from four levels. It also helps to increase the systematic effect of both the long term and short term. In some, Kirkpatrick (1996a) describes that "trainers must begin with desired results and then determine what behaviour is needed to accomplish them … four levels of evaluation are considered in reverse. First, we evaluate reaction. Then we evaluate learning, behavior, and results" (Kirkpatrick, as in Chyung, 2008, p. 66).

The following four levels of Kirkpatric evaluation are aligned with organizational goals:

Organizational goals	Kirkpatic Evaluation
Organizational goals	Reaction
Performance objectives	Behavior
Instructional objectives	Learning
Motivational objectives	Reaction

The first step in evaluation is to determine what you should measure and how will you measure it. He classifies four types of measurement scales (i) A nominal (ii) An ordinal (iii) An interval scale and (iv) A ratio scale.

2.15   Learning, Behaviour and Performance

Instructional technology is the parent department of Human Performance Technology. Learning can occur by reading newspapers, listening to radio or watching television. Intentionally planning of different learning objectives and activities that facilitate learning is called instruction "a set of events that affect learners in such a way that learning is facilitated" (Tomei, 2008, p. 503). In other words, learning can occur by non-instructional methods. Learning of new knowledge might be less than the requirement of performance. But new knowledge changes behaviour that is the mean of performance. The outcome of behaviour leads training programs towards performance which creates the difference between cost and value. The worthy performance is called accomplishment which can be increased through training. Behaviour is an individual activity which may or may not produce performance. Worthwhile performance is measured by the ratio of valuable accomplishment to the costly behaviour. Accomplishment is relatively the more qualifying term in a human performance system.

2.16   Training as an Intervention

Now a days, training has become a common intervention to improve performance in organizations. In the case where the performance problem is analysed due to lack of knowledge, skill or ability, the training and development is suggested as a common solution. Systematic training means to select an intervention to improve performance. "The critical commonality among all training interventions is the fact that employees are asked to learn and master the desired outcomes prior to applying the information to their work" (Nguyen & Klein, 2008, p. 95) Organizations depend on conducting systematic training to improve the ability of their employees/teachers, which is beneficial in overall organizational context. Although human behavior

cannot be engineered, yet human performance can be engineered. Spitzer (1999) has described the following three basic theories about performance:

1.   Performance does not improve itself.

2.   Once deteriorated, overall performance becomes increasingly resistant to development.

3.   Overall performance will only stay improved if there is continuing support of the performance development system.

The systematic approach to training (SAT) of teachers with a performance based system evaluates the requirements of performance. Surgue & Rivera (2005) argued that a study was conducted by the American Society for Training and Development (ASTD) in 2005 in which it was found that teachers at top companies had spent an average of 39.31 hours in training. The work done in all environmental factors and individual factors is analysed systematically. Systematic training is suggested in the case when the low performance is not due to other factors i.e. poor management, defective design etc, but it is due to insufficient knowledge, skill or information. Aims of training and performance requirements are brought in line. Thinking about activity and outcome of activity tells us that the word effect is more associated with performance and outcome of activity than with learning achievement. Measurement of academic learning performance is usually measured from marks obtained. It indicates the cause and effect relationship to know the effect of potential for improving performance with learning achievement which is not fully justified here, but to remain in educational and academic domain, this variable is taken as dependent variable in this study. To tackle with this problem, the test is prepared to measure the outcome of training which is necessary to implement this training knowledge. Performance is not an activity of learning itself; it is the outcome of

knowledge, attitude and skills (KAS), it leads us towards performance. If anybody carried out a great job but with costly behavior, time, effort and money, it leads him/her towards inefficiency.

Human performance technology emerged from instructional technology in 1960 - 1970 when it was realized that only instruction is not the solution for all human performance problems. Besides training and development, other interventions were equally considered as the solution of performance problems. This was the time when thoughtful people shifted their thinking from behavior based measurement to performance based measurement.

From ⟶	To
Behavior-	Performance
focused	focused
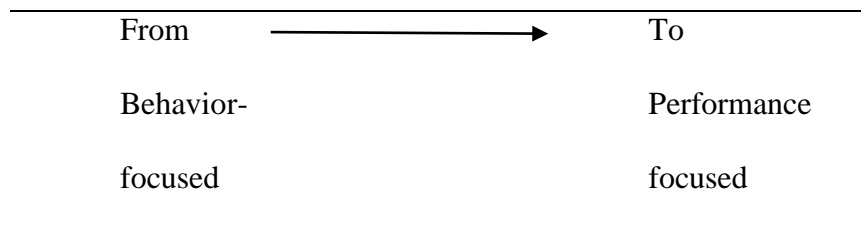
Figure 7 Behaviour to Performance

2.17 System and Systematic Approach

"As in most engineering situations, one of the first steps in engineering, human performance is to conduct a thorough analysis of the performance, which is often referred to as a front-end-analysis" (Harless, 1995, p.95). Front-end-analysis finds out the causes for performance problem whereas cause-analysis focuses on intervention selection, design, implementation, management, and evaluations. "Front end-analysis is a problem solving approach to human performance – a series of analysis and decision-making steps that lead to plans for overcoming deficiencies in human performance. It is all the smart questions that a manager, educator, trainer, and consultant should ask before deciding what specific solution to develop for a performance problem" (Harless, 1973, p. 231). Harless (1973) composed the following 13 major "smart questions" to be inquired during a front end analysis:

1. Do you have a problem?

2. Do you have a performance problem?

3. What is performance problem?

4. Should we allocate resources to solve it?

5. What are the possible causes of the problem?

6. What kind of evidence bears on each possibility?

7. What is the probable cause?

8. What kind of general solution is suggested?

9. What are the alternatives (subclasses) of solutions?

10. What are the cost, effect, and development times of each solution?

11. What constraints are being faced?

12. What are the general goals?

Organizations consist of systems and subsystems which needs a holistic view of performance factors. Systemic means performance is the result of a dense interaction of different elements of a system that cannot be separated. As Social science and human performance technology are relatively more subjective therefore, different professionals define Human Performance Technology differently.

Gilbert, the father of human performance technology, was a behaviorist who gained experience to do the work in Skinner's laboratories. He developed mathematical models / theorems to engineer human performance. He gives a very clear logic based system along with direct measurements of human performance which:

1. Explains the meaning of worthy performance.

2.   Creates a gap between exemplary performance and typical performance by measuring their potential for improving performance in their working contexts.

3.   Develops a systematic flow of performance to diagnose deficiencies and their causes to evaluate the valuable accomplishment.

Gilbert (1996, p. 18) states that "human competence is a function of worthy performance (W), which is a function of the ratio of valuable accomplishments (A) to costly behavior (B)". He expresses it symbolically with the following equation:

$W = A/B$

2.18   Performance Models

According to Wile (1996), human performance technology took years for its evolution; a number of models were designed and developed by different experts. These models show advancement in this field. Each model further developed and enhanced the preceding ones. More than five models are accepted in this field.

2.19   Gilbert Model

Gilbert is considered the founder of human performance technology. He suggested that managers are responsible for immediate causes of lack of performance. "Using the behavior engineering model to analyse alternative ways to achieve accomplishments more efficiently by looking at (i) environmental methods, (ii) peoples' programs and management actions" (Gilbert, 1978, p. 35), he offered a performance matrix. He is of the view that environmental causes of performance are not related to the performer. These are the performance causes about which managers can take action.

2.20 Joe Harless Model

Wile (1996, p. 31), offered Accomplishment Based Curriculum Development (ABCD) that invites people attention towards its process. Joe Harless focusses on teacher recruitment. He acknowledged in 2010 that the selection of the right person for the right job is very important in the human performance system.

2.21 Spitzer Model

Spitzer (2007) argues that there are a number of factors that contribute in human performance. He formed criterion bases factors /variables or attributes: capacity, expectations, skills and knowledge, incentives, task and job design, resources and tools, and feedback

Spitzer (1999) reviewed the earlier models, and considered the concept of Harless for job aids. He elaborated that the job design indicates what tasks are needed to be performed and assign the job roles. He also considered feedback as an important factor in performance.

2.22 Mager Model

Mager, as cited in Wile (1996, p. 31), designed and offered a checklist entitled "Why people don't do what they're expected to do". This check list was a tool to help managers to explain the reasons for poor performance. A wide range of explanation is needed: processing skill to perform the task, prior information to achieve desired level of performance, authority to perform timely information in the process of performance, sources and accessibility of information, availability of equipments, conducive environment at workplaces to design performance, hierarchy of organizational structure, push and pull factors, punishment for wrong performance; the nonexistence of measuring performance.

Mager (1992) adds some overlooked factors in earlier models. Workers could not perform well without having its authority. Making instant decisions and taking timely actions are necessary. He also focuses on the importance of feedback. Managers need to measure teachers' performance against given standards and communicate it to other people. They need to recognize better performers. The documentation refers to the coding and saving of important information. Jobs-aids act as a performance tool in Human Performance Technology (HPT).

2.23 Rossett Model

Rossett (2004) proposed a model titled as "causes of performance problems". A set of causes, she identified: lack of knowledge and skills; inappropriate incentives, wrong environmental support, and lack of motivation. According to Rossett (1992), inherent factors of performance include skills, or knowledge and motivation while the environment and incentives are active as outside influences. She divided the Gilbert's model (1978) into incentives and motivation for management purpose.

2.24 Information

Data can be manipulated to convert it into information. People should not be confused between data and information. It is called "stimulus error". People commit this error when they confuse with stimulus and its source. The stimulus has its response. A data can create a problem in its understanding, but information is always clear and understandable. Training is an attempt to create a relatively permanent change in people's accomplishment. Data become information after getting through it systematically. However, the quality of raw data determines the quality of information.

2.24.1 Kinds of Information

Information can be classified in different ways, but human performance technology makes it simpler and narrower in two ways where data help performance. It is like a milestone standing along the road which confirms our direction and tells us about remaining distance as well. It enables us to check our performance at any level and adjust ourselves according to the requirement. "A bit of the data can direct us what to do next, or it can confirm that we have been acting correctly, or it can do both" (Gilbert, 1996, p.177). There are at least two ways to improve performance: one, clarity, timeliness and relevance of data designed can be made to inform people and two, teachers' ability can be improved to use the collected data properly. Inadequate data can be the major cause of the problems. Although both feedback and information can be improved in usual causes, yet feedback has more potential.

2.24.2 Principles of Information

The information system extends its full support for performance. According to Gilbert (1996) it can be categorized into the following eight subcategories,

1) Identify expected accomplishments, roles and responsibilities, and mission or vision

2) Specify requirements, for each item and explain the relationship between accomplishment and its requirements.

3) Imperative assessment need of measuring performance and the reason for it.

4) Set exemplary standards in a measurable form.

5) Identify a teacher (exemplary performer) and ensure the resources to let out exemplary performer.

6)   Set up stepwise feedback system for necessary perforating with inbuilt reward and punishment.

7)   Strong administrative system.

8)   Integrate elements of poor performance for taking specific corrective measures.

Information has comparatively great potential to improve performance. It is very helpful in day-to-day management of performance. However, as per behavioral engineering model, information can be improved by two ways:

"Training is an attempt to create a permanent change in people's repertories— most often, in their ability to process difficult data" (Gilbert, 1996, p. 175). Simple and clear data can enhance the understanding of teachers without long trainings sessions. Teachers can do a job better if we clearly inform them what to do, and how well they have been doing it. A little clarity of the data along with training about the use of data is capable to get cheaper and better end results. In case if training is taken as the central solution for enhancing performance, data clarity and redesigning can make the training simpler and easier. Information can be obtained by manipulating data. As a stimulus always evokes a response, similarly information always gets through a teacher.

Organizations try to create permanent change in people's repertories by training and improving their ability to process difficult data. It is an alternative to work with data by making it simpler and clearer. More than half the problems of human performance and competence can be traced to inadequate data. Thus the data become easier which needs less training for its understanding. Clarity of the data is combined with the little treatment of training. Data can be manipulated to convert it

into information. Confusion of data and information is like a stimulus error. It occurs when we confuse with stimulus and its source. Information should be clear and in proper order before establishing orderly events.

2.24.3 Effects of Information

Although the principles of information are very simple, yet they need extensive care for their implementation to improve performance. These principles improve performance step by step and usually are capable to enhance performance up to six times higher. Teachers usually do not know how to perform and they do not know when they are performing well. In a school, instruction can be improved by establishing exemplary standards. All teachers should follow those standards.

More than half of the performance related problems can be found in inadequate data. "The problems of engineering human competence by improving information therefore center around these two functions: direction and confirmation" (Gilbert, 1996, p.177). Ideal information systems are rare. Teachers, managers, trainers, and trainees have not usually proper information about what they are performing. This may be a potential reason for poor performance system.

2.25 Incentives

People do what they are awarded for. They avoid doing what they are punished for. Why people do what they are, neither rewarded for nor punished? In spite of underlying common sense, decision makers have been ignoring the organizational life. Some managers believe that people prefer their individual benefits over organizational benefits because their individual benefit is different from organizational benefit. An incentive precedes performance and tries to produce expected results. A reward system tries to follow performance and reinforce the

results. In many ways, incentives and rewards resemble with feedback system. Feedback system is developed from continuous loop of internal and external feedback. The teachers' appraisal system is usually linked with their reward and incentive system. If teachers value the reward and incentive system, they try to make their end-results as per expectations. According to Gilbert (1996) an organization's incentive and reward system is helpful in some ways: making the rewards system specific and clear, making clear the existing range of rewards, shortening the time of award of incentives and rewards, making the measurement more accurate on the basis of rewards and incentives, addressing the questions about the fairness of rewards system, checking how the teachers give value to the prevailing reward or incentives, checking whether teachers are rewarded or punished for their behaviour and performance and addressing the mismatching of rewards on the basis of their quantity, quality and value of rewards.

Gilbert (1978) reveals that the incentives can be used wrongly and have strong potential for misuse at the workplace. Rewards consisting of money can motivate teachers at the workplace as money is considered to be the best motivator. Under a behavioral system, incentives keep teachers at the right track. Haines, Merrheim, and Roy (2001) contented that employees' response to mandatory rewards have most effective results when they are contingent upon performance. Goodrum and Gangwar (2004) study findings tell that formal incentives generate a curvilinear effect and have more effective results when adjusted with a positive supportive environment and good training. Formal incentive programs have not a constant or linear effect of their usage. Day to day recognition such as a pat on the back is a no cast incentive to sustain performance. Workers who are appreciated and made to feel valued usually try to meet

47

the management expectations. Geller & Daniels, as cited in Goodrum & Gangwar (2004) state that positive reinforcements should be included in routine work.

Yet such type of positive reinforcement has been misunderstood and the weakest link (Goodrum & Gangwar, 2004, p. 25). The term training and knowledge are often used as synonyms. In training, focus goes on increasing performance at the workplace.   All teachers bring both innate and acquired aptitudes to the job. According to Gilbert (1978), aligning of system dimensions and setting their functions give maximum motivation.

2.26 Instruction

The instructional process involves instructors, learners, and curriculum and text books. It is the instructor's duty to take the text from books and put them into the heads of learners in such a way that they can retrieve it during the test. In this way, instructors need more and more knowledge and methods to make their trainees' learning easier.

Instruction is an advance planning of teaching as well as learning activities in which learning can be organized. This systematic instructional system design motivates trainees to learn. The instructional design works with the aim of making the learning in a systematic manner. According to Gustafson (1996), instructional design can be described as (i) analyzing the study material to be learned and taught; (ii) determining the procedure of teaching /learning; (iii) conducting test and revision; and (iv) assessing whether there is some learning or not. Instruction is a systematic learning process in which each and every component (i.e. teacher, student, study material, and learning environment) is necessary for successful learning (Walter Dick, 1996). Instruction addresses both learning and teaching activities. These activities may assist trainees to acquire knowledge and subsequently shift this knowledge to the

permanent memory from the short term memory. An instruction is an integral process of different factors. Interdependent factors come close to make an instructional design. All these factors should be linked as per instructional design steps. For example, if aims and objectives are missing, then the upcoming steps in instructional design may have some problems. All elements in an instructional design are almost interlinked. It is compulsory to set the steps in a logical manner. Instructional design is really an important task of designing, teaching and learning activities. A meaningful sequence of things always enhances the teaching and learning process. Each element in its proper sequence can play a significant role at its implementation phase. There is always a rationale behind every decision taken in this regard. The designer should focus on alignment of all the parts of instruction. Trainees' learning background data is collected before designing of instructional process.

Outcome of instruction depends highly upon the design of teaching and learning. Problems can be visualized with the help of Instructional Design. If the instructional design model is capable of solving them, then it can be called an aspect of effective instruction. Trainees can acquire specific knowledge, skills and attitudes through an effective instruction (W Dick & Reiser, 1996). They further argued that effective instruction motivates trainees well. There are four principles that contribute during instruction: one, specific goal/objective oriented activities, the two, activity based three, right methods of delivery, and fourth assessing learning. Teachers ought to follow those standards to be able to apply their guidance efficiently. The predominant intention of tutorial layout is to demonstrate planning, growing, evaluating, and dealing with the educational technique. At the end of this procedure, it could be seen the scholar gaining knowledge of overall performance in instructional support is primarily based upon defined goals and targets. Learning outcome is

influenced by the combination of many factors including. 1. It depends upon trainees' motivational level to attain the objectives 2. Select the most suitable learning and teaching method to achieve objectives 3. Select most suitable media and resources 4. Select the most suitable support beyond teachers and available resources. 5. How achievement of objectives is determined? 6. What kind of revisions have you made if the result of tryout program does not match with the expectations? The typical questions about student learning are: (i) who to teach, (ii) what will be taught, (iii) how teaching process is conducted, and (iv) how learning is evaluated. Instructional activities without trainees cannot be implemented. Trainees' behaviour is very helpful in the designing of instruction. Instructional goals and objectives tell us what to teach. Teachers first should take a decision on their objectives and goals in instructional design, in how to teach, the delivery process of study material is to fulfill goals and objectives. Delivery of instructional methods explains teachers what types of learning and teaching methods are preferred. Teachers can be assessed from their trainees' worth; up to what degree they have achieved their goals and objectives. The reliability and validity of assessment tools is checked and piloted before the use of it in actual conditions. Commonly, four factors are used in an educational design. According to Gustafson (1996), educational design is (i) studying what is to be taught or learned, (ii) determining how it is to be taught/learned (iii) accomplishing tryout and revision; and (iv) Assessing whether learners do learn.

Instructional system models designed for a school course need a team spirit and effort to design instruction. Some modern trends and issues have emerged in these models. Hypermedia or internet can be taken as a typical example. It has influence on instructional design. Innovations and modern trends in educational training programs can be made with the help of these designs (Gustafson, 1996). Constructivism is

another one. It also affects instructional process. It attracts the teachers who do not believe in behaviorism and cognitive psychology. The opinion is that all individuals are able to construct their own world of reality (Gustafson, 1996).

Teaching and learning activities are designed by Instructional designers. Teaching, learning methods and instructional materials are developed in the development phase. Teaching and learning activities are implemented by teachers in implementing phase of instructional design. Learning outcomes are checked in the last phase of instructional design. The new trends in instructional layout model make use of analysis, design, development, implementation, and assessment in an effort to design the getting to know-teaching support. Cognitive psychology plays proper role in motivation, intellectual procedure of studying (quick time period reminiscence, retrieve after which long time memory), observations, reviews and contents. Creating new knowledge with the own experience is done in cognitive view of instructional design. Learners have an attitude to think that how can they solve their problems. Meaningful learning experiences are designed by the instructional designer. Involvement of trainees into meaningful experiences helps to store understanding in the long term memory. Trainees and learners take part in discussions and seminars to increase their learning. The new model tries to create new knowledge, designing for meaningful learning experiences, and motivation. Constructivism is interested in personal applications. Learners are very closely concerned with observations, contexts and experiences that convince trainees and make them able to learn. This is the way how new model is used in addition to the previous ones. Trainees are active participants and generate their own thinking and become autonomous. Trainees get their own experiences. The personal experience of trainees motivates them to take active part in learning activities. Trainees try to integrate their experience with

information and knowledge in study materials which help them to integrate more than one learning outcomes.

Learning by doing is relevant to constructivism instructional design. In simple words, constructivism instructional design means active learning. Active learners, by using cognitive activity, construct new knowledge. Learning environment is created by arranging real life activities. Active learning is the base of the new instructional design model.

New knowledge is constructed by the use of active cognitive learning during teaching and learning activities. Goals and objectives are derived from these materials. New model has five-step systematic process of planning, including: 1. Input, 2. Output, 3. Process, 4. Feedback 5. Learning. A variety of instructional approaches can be used to process the instructional design.

A more contemporary approach towards instructional process says that it is a systematic process which has some crucial steps to be executed in their proper sequence. This step by step approach in a specific order is called systems approach to design instruction. The system is usually a set of interrelated parts; all of these parts are unified to achieve a well-defined goal. Internal and external feedback loops in this system tell the performers whether they are achieving their goals? The most understandable systems are man-made systems rather than natural systems. For example, a systematic cooling system in a house has a thermostat. It automatically turns off the cooling system when it reaches the required temperature. Similarly, tests alongwith feedbacks automatically control the learning process.

In the same way, instructional process can be viewed as a system. The objective of this system is to improve learning. The basic components of the system are learners, instructor, instructional material, feedback and learning environment.

These are the components which interact to achieve the learning. Tests act like a thermostat and tell instructors how much learning is occurring. The results decide whether the components of this system are interacting in a right way or require some change. In a systematic approach of learning, there is no overemphasis of any component to others. Each and every element is determined to contribute its role. Thus, the interaction of learning process depends upon the specific interaction among different elements of the learning process. It is clear that assessment being a necessary element of the system helps a lot in systematic approach.

2.27 Components of the Systems Approach Model

The first step in instructional design is to determine what you want from trainees to do at workplace after completing your instruction. Van Tiem, Moseley, and Dessinger (2001) state that performance technology "is the science and art of improving people, process, and performance" (p.2). They further state that "Systematic approach is the foundation on which what is loosely termed the general process model of HPT" (Rosenberg, 2009, p137). It is repeatedly said in defining human performance technology and models that a systematic approach is to address performance problems. Human performance technology model components are linked to an overall strategy for improving organizational performance. Continuous reviews keep its framework updated.

Rummler and Brache (1992) argue that the overall performance enhancement and organizational interventions are linked to result of Human Performance Technology's systematic approach. The position taken by Rummler can be interpreted as meaningful elements of HPT model. It improves performance of people step by step in a systematic manner.

Van Tiem et al. (2001) explain that the human performance model illustrates the following five key components: performance analysis, cause analysis, interventions designing, development, implementation and evaluation.

The analysis of performance component also catches business outline. It produces helpful essential information for partners and execution advisers.

Wilmore (2002) describes three stages (i) selection, (ii) information gathering, and (iii) understanding in business investigation procedure. Wilmore makes every stage more straightforward as he characterizes the section to organize the point where an execution expert and customer meet to talk about seen issues. From Wilmore's meaning of the passage stage, our section stage is likewise viewed as a component of parts, 'Business Analysis'.

Boyd, as cited in Piskurich (2002) states that the "distinguishing proof and the meaning of the execution crevice is a basic stride in helping an association address human execution change" (p 43). The HPT models explain the gap, or gaps, that are identified in the analysis stage. Both Boyd and Rossett share the emphasis on identifying execution gaps, keeping in mind the end goal to improve performance. Organizations clearly cannot enhance human performance in the event that they don't know the gaps that keep them away from accomplishing their performance. Gap analysis tells people where they are and where they want to go. It sets up the status and sets out the direction.

Doggett (2005) states "In order to solve a problem, one must identify the cause of the problem and take steps to eliminate the cause. Identifying and eliminating root causes of problems is of utmost importance" (p. 34). Piskurich (2002) adds to Doggett's position by noting "stated in its simplest terms, the question you want to answer in your cause analysis is: Why does the performance gap exist?" (p. 56).

Through past analysis, it was recognized that business and execution investigations are essential parts or stages inside the human performance technology process. Subsequent to finishing each of these stages, Chevalier (2004) proposes that a reasonable examination is required to figure out the ways that the workplace and individuals are having to implement. The next two parts or stages of the human performance technology procedure address mediations as they identify with choice and usage.

Characterizing an intervention gives noteworthy connection as to how the term is related to human performance technology. Sutton (2014, p. 63) characterizes an intervention as "the act of intervening, especially a deliberate entry into a situation or dispute in order to influence events or prevent undesirable consequences" (Sec. 1). From this definition, we can perceive how it may be connected to a performance consultant. The performance consultant makes a planned entry into an organization with a customer keeping in mind the end goal to address performance problems. Hence, the joint effort brings about conceivable arrangements and tools to positively influence performance.

As per (Spitzer, 1999) interventions, performance technologies, "are used to reduce the gaps between current and desired performance" (p. 163). He further states that interventions can "virtually take any form, ranging from a job aid…to the development of a completely new organizational system or structure" (p. 163). Spitzer's reasoning is grounded in what (Van Tiem et al., 2001) accept about interventions. "the number of possible interventions is infinite, because any number of organizational, environmental, and people factors affect performance" (p. 3). It can be translated from the description about interventions that they are ample and they introduce chances to employment related performance based issues.

From an intercession arrangement viewpoint, it is basic quality to guarantee the arrangement decided to improve performance issues is straightforwardly identified with the reason for such issues. This conviction is similar to accept the keys to effective interventions. The basic components of an effective intervention include, for example, resources and time, which are gone before by solid techniques of issue distinguishing proof and comprehensive suggestions. There is also the perspective of intervention implemented to consider.

Van Tiem et al., (2001) explains intervention implementation by describing that both implementation and change "require the actual doing and putting into motion selected interventions ….which sometimes require implementations to be extensive and require major process changes" (p. 20). He further proposes that individuals and innovations unquestionably be included in any implementation project. This plainly suggests two important factors; (i) that inventions are the result of joint efforts with different partners and (ii) that interventions are attached specifically to main causes found out through cause analysis.

Sponsorship in implementing interventions is of basic importance. Continuous change is essential and as Dormant (1992) describes, "perhaps the most important person in a change effort is the sponsor ….. having the power to envision and initiate the change, but also legitimize the implementation " (p. 251). It is necessary for business essence to know Dormant's position for convincing reasons. Organizations regularly use venture groups to enhance performance in numerous work forms. The bigger the venture or change required, the bigger the sponsor. The last examination of the parts and components of the Human Performance Model looks at the part of the assessment process.

Donald Kirkpatrick may be the principal authority on implementing evaluation measures. Burkett (2002) admits that Kirkpatrick "created a four-level model of categorizing evaluation data that has been used as a common frame of reference for several decades" (p. 156). Kirkpatrick (1975) asserts "Evaluation that verifies and improves the effectiveness of training is conducted at four levels: reaction, learning, behaviour and results" (p. 108). This is the way to deal with assessment conceived by Kirkpatrick which is a broadly acknowledged framework. Alkhalaf (2015) describes that competency assessment has been growing in the recent years. It can be implemented as a deliberate way to deal with empowering divisions with many organizations to make worth including choices in supporting business and learning operations.

The human performance technology model exhibits assessment as a developmental and summative methodology of the efficient procedure. Shrock and Geis, as cited in Pershing et al. (2006a) advised that developmental summative assessment "differs in purpose and often in techniques. Formative evaluation seeks data while the intervention is still under development and can be revised. Summative evaluation is conducted to determine whether the intervention is worthy of adoption or continuance" (p. 191). It provides the end results for decision making. The developmental and summative assessment seen in every assessment sort is diverse in nature and better serves the Human Performance Improvement process at distinctive stages. This methodology for assessment provides a broad focus throughout the Human Performance Improvement process. With an end goal to conceptualize a reasonable vision of what assessment ought to achieve, partners must outline and execute an assessment technique (Barksdale & Lund, 2001). The last point of this

writing survey contends, learning standards, concentrates principally on exploration what is more; realizing methods went for expert advancement and critical thinking.

In this age when people have realized that teachers are the most precious asset of any organization, the systematical training of teachers for improving their performance gets more and more importance. Systematic training avoids conducting unnecessary training. "Behavior is an individual activity, whereas the outcomes of behavior are the ways in which the behaving individual's environment is somehow different as a result of his or her behavior" (Nickols, as cited inChyung, 2008, p. 94). Performance is a measurable outcome of behaviour . Behavioral change may or may not improve performance, but it is an integral part of the performance. "Behavior, you take with you, accomplishments, you leave behind" (Pershing et al., 2006a, p.xxxiii). Performance is the result of the whole system.

Wittkuhn (2004) tells us that a system has: Input, output, outcomes, feedback and environment as its necessary components. A systematical approach is the purposefully planned, step-by-step approach. The effect of the one element of a system cannot be separated from the others in a systematic approach. Performance is the result of specific interaction of whole elements. In systematic training, trainees know where they are heading towards and how will they get there. In a systematic approach, we can make analysis in forward as well as backward direction to evaluate how the organization supports to its basic elements and how the elements become unified at the organizational level. "System (not systems) thinks look at whole, and then the parts, as well as the relationship and connections among the parts. It is the opposite of reductionism. After all, a collection of parts that are not connected is not a system" (Kaufman, Okley-Browne, Watkins & Leigh, 2003, p. 60). A number of

methods can be used to improve the performance of teachers; however, in case of lack of knowledge and skills, training is an appropriate choice to improve the performance.

In keeping with the latest industry document through the yank American Society for training and development companies by myself spent more than $126 Billion yearly on worker's education and learning development (Paradise, 2007). However, it does not mean that training always remains successful. In many cases, training fails to improve the performance of teachers up to the desired level. One of the primary reasons of failing the training program is not to adopt the systematic training in the human performance system.

One major difference between conventional training and systematic training is that conventional training focuses on change in behaviour while systematic training focuses on change in performance, not their behaviour. Goldstein & Ford (2002) argue that a training program refers to a systematic approach to improve individual, team and organizational effectiveness. In systematic training, cause analysis and need analysis are conducted to know the ways of improvement. This training intervention, especially measures the Potential for Improving Performance. In performance system, the exemplary performer is "the worth of the historically best instance of the performance" (Gilbert, 1996, p. 30). Systematic training of teachers requires less investment on training and yields more fruits and benefits.

Systematic training is associated with organizations. All organizations comprise on systems and subsystems and have two main categories; human elements and nonhuman elements. Training deals with human elements by removing or reducing performance barriers and availing of performance opportunities. Performance varies when the human elements of a system interact in a specific way.

The system shares the strengths and non- overlap weaknesses of the performers. An individual performs within the component of a system including performance specifications, task support, consequences, feedback, knowledge, skills, individual capacity etc. It is presumed that the trainees are taken from an organization where the human performance system already exists so that they can utilize their full energy to achieve their results.   According to Wittkuhn (2004), the idea of the Human Performance system is as under:

Trainees/Teachers

Feedback

HUMAN PERFORMANCE SYSTEM

Management

Enabler	**Steering elements**	Output
Design, Resources, Support	Expectations, Consequences, Feedback (Internal)	Outcome
	Performer/Teacher	

Trainees
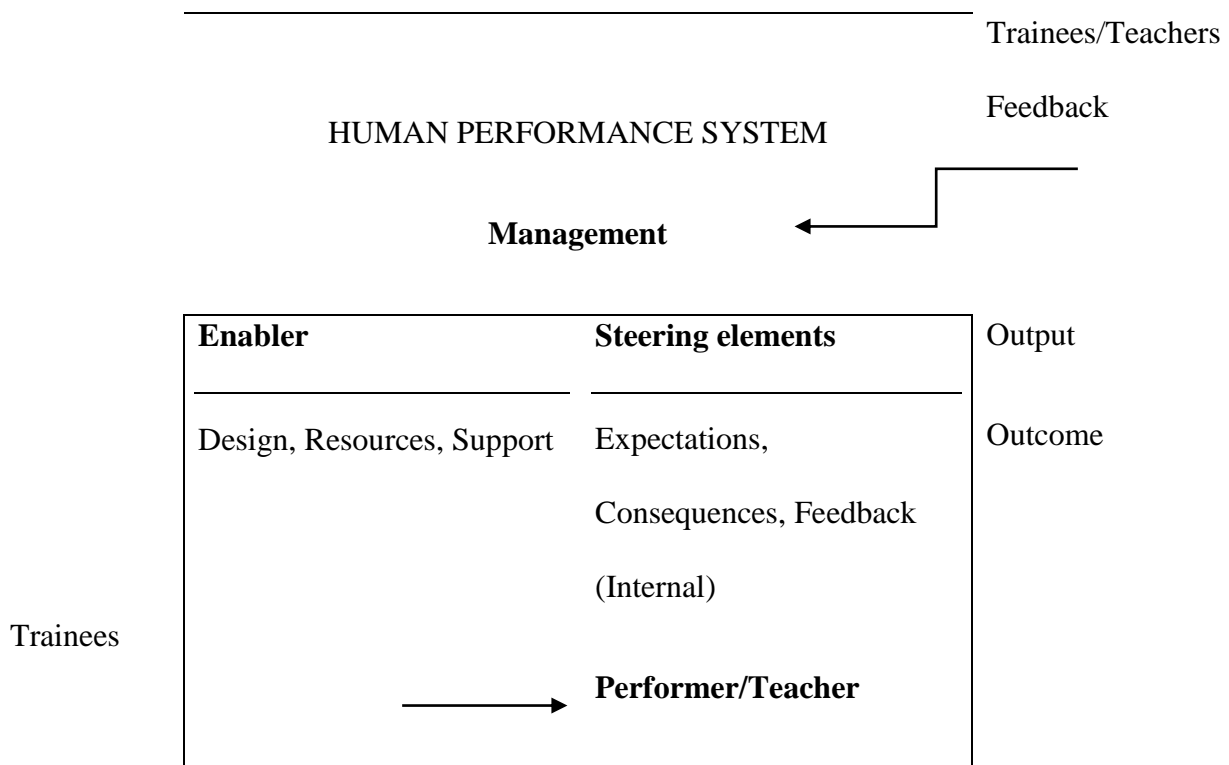
Figure 8 Human Performance System (Rothwell, 1997)

Accuracy in measurement creates the main difference between science, and social science. Social science research is relatively more difficult. Social science was once considered as facility providing domain of learning, but presently everything is considered in its cost perspective. Gilbert (1996) explains that "there is no way to alter one condition of behaviour by having at least some effect on another aspect – often, a considerable effect on another aspect. And usually it is difficult, if not impossible, to determine the degree of the diffusion of the effects" (p.94). Allocation

60

of meager resources on the basis of returns among multiple competing ends is dominating factor of today's life. The effect of any training cannot be calculated without establishing a cause and effect relationship between independent variables (manipulated in training) and the depended performance variables. The correct measurement of human performance and potential for human performance is the core strategy for the needs assessment of training.

The class room learning was not the subject of this training. It is the domain of long term development i.e. university education. "Training and Development refers to two types of activities: those that transfer skills to workers in the short-term (training) and those that build skills in the long terms' development" (Carliner et al., 2006, p. 10). In this way, the exemplary performer made the outline of training on Information, Instruction and Incentive from the text written by Gilbert (1996) and Human Performance Technology.

Potential for improving performance is taken as a gap between desired and current level of performance. This performance gap is the result of deficiencies either in individual's repertory or inadequate environment. A systematic approach to training addresses the performance problems systematically.

2.35 Performance

"Human competence is a function of worthy performance (W), which is a function of the ratio of valuable accomplishments (A) to the costly behavior (B)" (Gilbert, 1996, p. 18). Gilbert explains it as under:

1. It tells us that the way to achieve human competence is to increase the value of our accomplishments while reducing the energy we put into the effort. The true value competence is derived from accomplishment, not from the behaviour.

2. It tells us that great quantities of work done, knowledge, skills and motivation, in the absence of at least equal accomplishment, are unworthy performance. And this says,

in turn, that knowledge, motivation, and work, when used competently, are to be husbanded and spent wisely.

3. It tells us that even great accomplishments may not be worthy if the cost in human behaviour is very great.
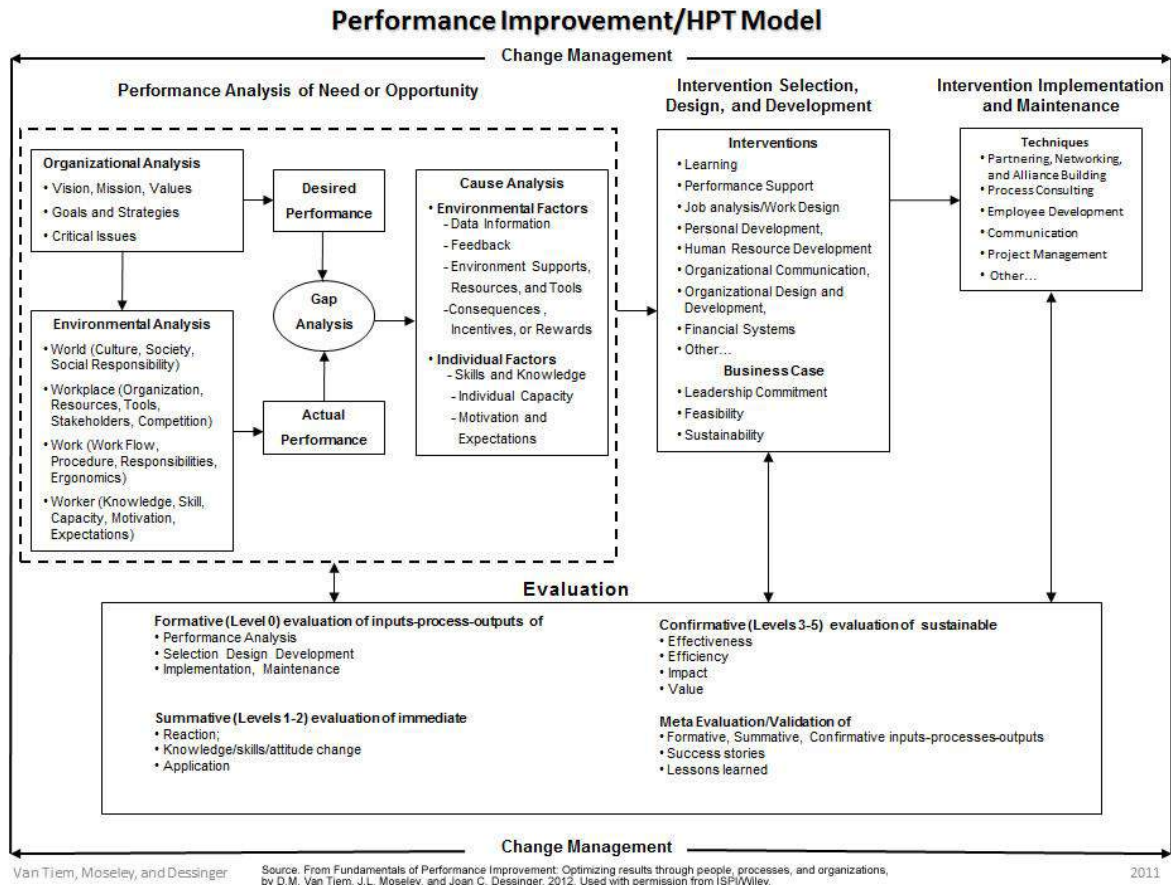
Figure 9 Human Performance Technology Model (Aziz, 2013)

The teachers' knowledge, skills and abilities become meaningful with their performance; such as words become meaningful by their actions. These are the actions of words "soft and hard" that make them meaningful. "Knowledge is simply what the teacher knows. It is important in terms of job and training because people usually perform better if they understand what they are doing and why" (McArdle, as cited in Kazanas & Rothwell, 2004, p. 13). The systematic training of teachers is capable of improving the performance and actions of teachers. Teachers are the most precious asset of any organization. "People are not competent, performance is. People

have opportunities which the Potential for improving (PIP) can express with precision and validity" (Gilbert, 1996, p. 13). Most of the errors are associated with human beings in any organization which is the subject of social science as well. Valuable performance depends on its worth which is given by a society.

The countries which invested in their human beings have made more progress. Systematic training is the logical solution of performance problems which are due to lack of knowledge, skills and ability of teachers. "Results of the meta-analysis revealed training effectiveness sample-weighted mean ds of 0.60 (k=15,N=936 for reaction criteria, 0.63 (k=234, N=15014) for learning criteria, 0.62 (k=122, N=15627) for behavioral criteria and 0.62 (k=26, N=1.748) for result criteria" (Arthur Jr, Bennett Jr, Edens, & Bell, 2003, p. 134).

Systematic training is suitable in performance based systems where teachers are evaluated by their performance. The performance can be measured as the difference of value of accomplishment and the value of time, effort, and money spent on it. However, if such training is applied in the process focusing institutes, it might not produce the desired results. In school education department Punjab, many training programs have been initiated such as directorate of staff development training (DSD), school leadership training (SLDP), induction training, Punjab education and English language initiative (PEELI) ete. But the impact factor of such trainings is not being determined. They are not outcome based trainings; they are process focusing training programs. The review of previous research in school education department Punjab did not show any history of systematic performance based training. In such circumstances, the present study was conducted to fill the need of performance based systematic training in school education department Punjab, Pakistan.

CHAPTER 3

PROCEDURE AND METHODOLOGY

This chapter forms the hub of the study. It starts with the questions raised in chapter 1 and determines the status of the issues and problems examined in the field of literature review and sets out the directions in chapter 3, paving the way for data collection and analysis in the subsequent chapter. In this perspective, the present chapter addresses research design, population, sampling, procedure for the identification of exemplary performer to conduct training, training material compilation, pretest, posttest, training provided, instruments, table of specifications, pilot testing, reliability and validity leading with the paradigm of the study.

In systematic training, first we create a gap between what we are performing and what we want to perform. Here the performance is taken as the ratio between the accomplishment and the costly behaviour. We are performing when the value of our accomplishment is more than the effort, time and money we invested in this performance. Human performance model by international society for performance improvement (Aziz, 2013) was partially adopted in this training. A gap stated in this model was adopted in this systematic training by creating gaps between exemplary performer and other performers. An exemplary performer was a teacher who performed the best in the pretest. As per Gilbert (1996) model, there are six factors that contribute in our performance. Out of these six variables, three make environmental support while the remaining three belong to the person's repertory of behaviour. All the teachers were taken from the same organizations so it was presumed that they have the same environmental support i.e. information, instruments and incentives. And their Person's repertory of behaviour except their knowledge and

skills were also similar to one another as they were taken from the same organization. In this way, their performance differences were due to their knowledge and skills. It means that the exemplary performer had the best knowledge and skills to perform. That is why he performed exemplary. The exemplary performer tried to transfer his knowledge and skills to the other performers through lecture, presentation, discussion and role playing. The control groups' scores were converted into Potential for Improving Performance (PIP) as per method given by Gilbert (1996). Blocking of lurking or extraneous variables is not the subject of pretest posttest control group design. Both groups had similar lurking variables at the time of posttest scores. Statistical tests were applied between the posttest scores of the control group and the experimental group. It was presumed that if exemplary performer's performance was better than others due his knowledge and skills, so, when exemplary performers would shift his knowledge and skills to others, their performance would also increase up to the exemplary level. And a teacher having wider gap would increase his/her performance at higher rates as compared to the teachers who would have less gap.

3.1 Conceptual Framework of the Study

Independent Variable Systematic Training	⟹	Dependent Variable Posttest Score

Pretest Posttest Control Group Design

Human Performance Technology	Comparison	Ambiguous temporal precedence
HPT Model	Random Assignment	History
Gilbert's Theorem	Controlling	Maturation
	Replication	Instrumentation
Equated Groups		Regression
Pretest Analysis		Selection
		Testing

Knowledge ⟷ Data ⟷ Instruments ⟷ Incentives

Knowledge ⟵ Capacity ⟷ Motives

All the teachers/trainees were taken from the same organization so that they may be considered at similar environmental support and individual support except their knowledge and skills. They were equated on the base of pretest into an experimental group and a control group. Then systematic training was given to the experimental group and no training was received by the control group. Training was delivered as per human performance technology, human performance model and as per Gilbert ideas who was considered the father of human performance technology. Systematic training was taken as an independent variable and posttest scores were taken as the dependent variable. The pretest posttest design was adopted which fulfils the all four conditions of an experimental investigation. This strong design controlled the threats of validity.

This training had .626 size effect which is very close to the .62 size effect given in review of literature. The preceding chapter on literature review of this study has not been given with a view to establish a general point. In fact, the key concepts of the variables used in this study have been focused in the literature review section. This study has been conducted under the umbrella of human performance technology and the ideas sponsored by Gilbert. Therefore, the literature review chapter was limited to human performance technology.

Standard text on information, incentive and instruction written by Gilbert was selected for this training. Lesson plans were prepared accordingly. The training was given for one hour daily. Energizers and icebreaker activities were also the part of this training. These activities made the training interesting and joyful. Feedback was also taken during the training for necessary improvements in the training. Delivery of the training was ensured as per lesson plans.

Within the framework of this methodology, human performance model, human performance technology the researcher examined "effect of systematic training on teachers' performance" in this investigation.

3.2 Research Design

Theoretical constructs of the design are based on Gilbert model (1996), the pioneer of human performance technology. His vision of human performance relates and find out the causes of lack of performance and generating alternative ways for accomplishing more effectively. His performance matrix included environmental methods, programs and management actions. Environmental factors of performance are related to the performer. The performance causes have to be addressed by managers for timely action. They include work groups and conducive-workplace. Knowledge, skills and attitudes of the people and job oriented variables.

Based on this theoretical model, an experimental design was formulated. Experimental model was determined for assigning specific treatment influencing the outcome. The rationale included essentially to see the impact by providing a specific treatment to one group and withholding it from another and then determine how both groups scored as an outcome.

True experimental design of pretest posttest control group design was used for this study. "The best method — indeed the only fully compelling method — of establishing causation is to conduct a carefully designed experiment in which the effects of possible lurking variables are controlled. To experiment means to actively change x and to observe the response in y" (Moore & McCabe, 1993, p. 202). "The strongest comparisons come from true experimental designs in which subjects (trainees, teachers, classrooms, schools, etc.) are randomly assigned to program and comparison groups. It is only through random assignment that evaluators can be

assured that groups are truly comparable and that observed differences in outcomes are not the result of extraneous factors or pre-existing differences" (Barry & Herman, 1997, p. 2).

Figure 10 Pretest Posttest Control Group Design

Starnes & Tabor (2018) states that there are four principles of experimental design (i) Comparison (ii) Random Assignment (iii) Control and (iv) Replication. This design fulfills all the necessary four principles of experimental research design.

1.   Comparison: It compares two or more treatments.

2.   Random Assignment: The researcher grouped Secondary School Teachers of District Rajanpur into experimental and control groups solely on the basis of their performance in the pretest. In this way, the groups were equated. The trainees were simply randomized with

respect to all other hidden and unhidden variables to cancel out the potential differences. In this division, accidental bias was overcome as well.

3. Controlling: The researcher assigned treatment to the experimental group and tried his level best to control all other differences/variables in these two experimental and control groups. All the trainees were selected from the Government of Punjab School Education Department. They all were governed under the same rules having almost similar workgroup and organizational support. Almost same kind of environmental and leadership support was available for all trainees. They were awarded with similar monetary and nonmonetary incentives. During the training, both groups were availing similar type of informal learning activities except treatment.

4. Replication: Thirty Secondary School Teachers were taken in experimental group to replicate the training provided. Thus the condition of replication was also fulfilled by taking such a sufficient large sample.

Human Performance Model, Human Performance Standards given by International Society for Performance Improvement may be helpful for the redoing of this study.

3.3 Threats to validity

Johnson & Christensen, (2019) states that the pretest posttest control group design is an excellent experimental design because it controls for rival hypotheses effectively that may threaten the internal validity of the experiment.

This design was also considered fit to control all the below stated threats to validity. An explanation of controlling these threats is as under:

1. History-- The history threat was controlled the way that the general events contributing to experiment group and control group were almost the same. All the subjects of this study were taken from the same society and culture. The

trainees were working in the same organization under similar rules and regulations having the same ministry of Schools Education Department Punjab, Lahore. Both the treatment and control groups were tested simultaneously. There were equal time intervals between pretest and posttest of both the groups.

2. Maturation-- All the trainees from experimental and control group were tested for pretest and posttest simultaneously.

3. Instrumentation-- This was controlled by developing the same questions for the pretest and posttest. However, potential threat to validity may exist in observational studies due to subjective opinion of observers. This was an experimental study and only one observer checked the experimental conditions.

4. Regression Artifacts--this was controlled by randomly assigning subjects from the same organization in District Rajanpur. Therefore, both groups may have regressed similarly.

5. Selection-- This was also controlled by randomization.

6. Testing— In the availability of control group, and analysis between posttest score of both experimental and control groups, there was no chance of getting scores due to second administration of a text.

The factors described above affect internal validity. These factors could produce changes in the subjects which may be translated as the end result of the training. These are called main effects which had been controlled in this true experimental research design.

However, in this design, there were threats to external validity which is also called interaction effects. The external threats to validity could not be controlled in a

single study. One important weakness of this study was that academic performance was taken as the improved marks in the posttest. It was not directly measured in the performance based organization where measurement was being measured in units. This was an experimental study and the researcher was not going to generalize the results of this study over population. However, same population characteristics, institutional structures and common universality of program system also provide a framework in this direction.

3.4 Population

A population is an entire set of peoples, persons, objects, events or entities that the researcher intends to study. It can be further divided into target population and accessible population. The results of the study can be generalized to the target population. All the SST's (male) working in the year 2015-2016 formed the target population of the study. According to the staff statement obtained from the Executive District Officer (Education) for the session (2015-16), there were 46 functional secondary schools (male) including 7 higher secondary schools (male).

There were 200 Secondary School Teachers (male), out of which 190 agreed to participate in this study. The accessible population in this study was 190 secondary school teachers. It was an experimental study with the purpose to understand the systematic training phenomenon. Generalization of results was not a necessary component of this study. All trainees were male only, but their subjects and ages were different which was controlled by random assignments.

3.5 Sample

Rajanpur is a typical cultural district in south Punjab. Although secondary schools in public sectors are separated by gender, yet cultural factors of female in Rajanpur are strong and highly segregated where frequent movement of the female

gender was inconvenient. Hence, male population formed the population of the study. However, management, recruitment and qualification of teachers are common in both sectors. The study may be helpful for yielding comparable results. Various forms and stages are involved in sampling. In research, a researcher selects a sample or sub-set of the target population. Sampling methods aim at obtaining a sample that is representative of the target population. In this perspective, the staff statement of Secondary School Teachers (SSTs) of Science and Arts was obtained from the office of the Executive District Officer (Education) Rajanpur. It had sufficient information about the teachers which was taken as sample framework. In the beginning, it was a bit difficult for the trainees to reach at the place of training in given time but it was managed by conducting training at Indus road which was very easily approachable.

Target population 200 SSTs (male)

Accessible population
190 SSTs

Sample 60
SSTs
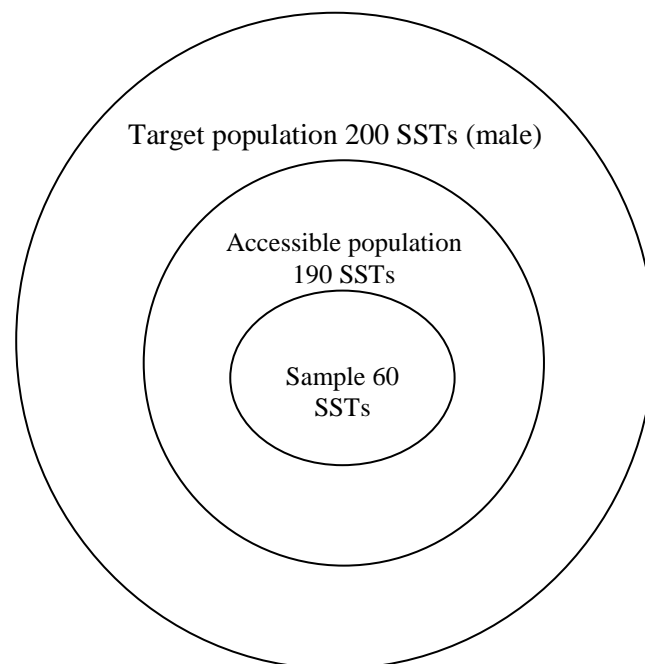
There were 200 male SSTs working at district Rajanpur. Out of the total population 190 SSTs agreed to participate in the study as accessible population. Then sixty teachers were selected through simple random method. A pretest test was conducted, Mark sheet in descending order was prepared and both the groups

experimental and control group were equated on the sing trait of marks obtained. Threats to the sample were controlled by the simple random assignment of SSTs.

3.6 Research Procedure

3.6.1 Identification of Exemplary Performer

"Performance alone is not what has been set out to be measured, because performance alone is not competence. Competence is a social concept, a comparative judgment about the worth of performance " (Gilbert, 1996, p. 29). Using this concept, potential for improving performance (PIP) of the group of teachers was computed by the ratio of exemplary performance to the typical performance. And individual PIP of teachers was found by the ratio of exemplary performance to an individual typical performance. After taking the pretest, a gap was created between exemplary performer and other performers. A teacher from the control group who got the highest marks of 56 in pretest was declared the exemplary performer. The systematic training improves measurement of the performance of all trainees at all levels. Therefore, it may be beneficial for the educational managers. Measurement of performance helps to manage things in a better way.

The reason to do so was that such gap exists in human performance technology model between existing level of performance and desired level of performance. The academic performer (subject) having the lowest PIP was declared the exemplary performer to conduct this training who was the best performer participant. As all the teachers were from the same organization (education department of Rajanpur district in particular) so they had the same level of other performance supportive variables like leadership, structure, technology etc. The exemplary performer transferred his knowledge and skills to other performers in 6 weeks on (i) Information (ii) Incentive (iii) Instruction and (iv) Systematic training

74

according to the text by Gilbert (1996), and human performance technology. The systematic training improves measurement of the performance of all trainees at all levels. Therefore, it may be beneficial for the educational managers because we can manage things in a better way if we can measure them. In this way, the exemplary performer tried to minimize the performance gap between him and the other trainees. The gap described here was in terms of knowledge and skills between the trainer and trainees. The participant who got the highest marks in pretest was declared the exemplary performer/trainee in this training.

3.6.2 Key Steps Taken to Make this Training a Systematic One

Systematic comparisons were conducted for the identification of typical performer and exemplary performer. Then the performance gap between exemplary performer and the other performers was determined as per Human Performance Improvement Model by the International Society for Performance Improvement. Systematic method was used to select the exemplary performer/trainer. Cause analysis and need analysis were conducted to fill this performance gap. Performance was measured in ratio/interval scale. The aim of this training was to enhance the performance of trainee teachers up to the exemplary level. It was the exemplary performer's knowledge and skills due to which he performed better than others and was selected as the exemplary performer/trainer.

3.6.3 Training Material Compilation

Standard text given by Gilbert (1996) in his book namely "Human competence: engineering worthy performance", and the text given by the International Society for Performance Improvement on training, information, instruction, and incentives were selected for this training. The text was delivered to the trainees as a treatment of this training. The text typically explains how teachers/employees can

improve their performance. Several graded / lesson plans (for the experimental treatment) were developed for the instructional purposes. The structure included: specific outcomes, material required, introduction, previous knowledge of the measuring status position, development, critical questions, summarization, and assessment points; followed by home tasks. Appendix-III presents the details.

3.6.4 Pretest Setting

All the trainee teachers participated in the pretest (Appendix I). There were 50 multiple choice questions in the test, each question carried 2 marks.

The pretest was marked according to answer key (Appendix II) and a descending list of marks obtained was prepared. Total 60 teachers' were divided into two equal groups based on one trait i.e. marks obtained in the pretest. Randomly one group was taken as the experimental group and the other one as the control group. The same was the requirement of pretest posttest control group design.

3.6.5 Treatment Provided

The International Society for Performance has given us a model for improving performance. The same was adopted in this study. Potential for improving academic performance was (PIP) taken as a gap between desired and current level of performance as per the above mentioned model. A performance gap between exemplary performer and other performers was noted by taking pretest to identify and address the knowledge and skill related performance problems of the teachers.

Systematic applications refer to purposely planned, methodical, step-by-step approaches that are likely to lead to desirable outcomes. In this training, all the participants were taken from the same organization of the School Education department. So they were enjoying the same organizational support. Therefore, it was presumed that their difference in the pretest was due to their own differences of

knowledge and skills, and not due to the environmental support. The lesson plans were prepared for this training (Appendix-III). Treatment of the experimental group was conducted by delivering lectures, followed by one hour regular open discussions, up to six weeks. The target of training was only to improve the trainees' knowledge and skills up to the exemplary performer level. Remediation of difficulties pointed out by the trainees was made in the last two weeks. The control group did not receive any treatment.

3.6.6 Instrument

A self-developed test comprising of 50 M.C.Qs' was prepared for the trainees who were asked to select the best answer from given options. There was no content difference between pretest and posttest except change in the order of questions. The content of the test was based on the guidelines given by Thomas F Gilbert and the study material of human performance technology. First three levels of cognitive domains i.e. knowledge, comprehension and application of Blooms Taxonomy were used in this test. A wide range of variables, learning the initial steps in training, human performance system. Controlling / regulating human behavior, comparability, systematic training, contents and systematic delivery, problems associated with performance, organizational gap analysis, and developing competence. Cost effective training, increasing accomplishment, exemplary performance, PIP indicators, technology of human performance, promoting natural inquiry, worthwhile of a system, a performance based system of assessment.

In order to make the type of test clearer, more detail is given in the following table of specifications.

3.6.7 Table of Specifications

The objective of multiple choice questions in the context of Bloom's Taxonomy was in the following composition.

Table 2 Table of Specification

Content/Topics	Domain of Bloom's Taxonomy	Percentage
Human Performance Technology, Systematic Training, Incentive, Instruction and Information	Remembering	20%
	Understanding	48%
	Applying	32%

(For detail of table of specification, Appendix-VI).

Although Blooms Taxonomy has been revised in 1990 but in this test, it was not used. Multiple choice questions were based on the three domains (i) Knowledge (ii) Comprehension and (iii) Application. Lorin Anderson, a student of Bloom headed the project and made modification in this taxonomy. A major change was the conversion of the original nouns at each level to verbs. The following list describes these differences.

Knowledge $\longrightarrow$ Remembering

Comprehension Understanding

Application Applying

Analysis Analyzing

Synthesis Synthesizing

Evaluation Creating

3.6.8 Pilot Testing

The instrument was pilot tested on 10 teachers. These teachers were part of the accessible population but they were excluded from the final sample. There were 50 questions in the pretest /posttest instrument and every correct answer carried two marks.

3.6.9 Validity of the Instrument

The validity of a test refers to the degree to which the test measures what it is supposed to measure. Validity is defined as an indication of whether the measuring device measures what it claims to measure (Hale, 2011).

The pretest and the post-test was the same; the only difference was the arrangement / order of questions in the test. Experts were requested to provide feedback keeping in view the following areas (a) relevance of items to the performance (b) relevance of items to Pakistani local context (c) clarity (d) repeated/redundant items. Three experts, two Assistant Professors, and one Director IER (Institute of Educational Research) validated the instrument. According to the expert opinions, questions were made more relevant, simpler and more comprehensible, clearer, and confusing words were replaced with appropriate and simple words. Initially 70 multiple choice questions were prepared and sent to two experts for their opinions. Ten most easy and ten most difficult questions were dropped as per the experts' opinion. Hence, remaining 50 questions were finalized for the test. The validity of the remaining 50 questions was considered acceptable by the experts and the sample of 10 teachers described above. The list of experts is attached as Appendix-VII.

3.6.10 Reliability of the Instrument

Hale (2011) explains that the reliability of a measuring device means internal consistency and stability of the data obtained from it. And the instrument is valid if it measures what it claims to measure. The instrument will be reliable if it also measures something consistently and correctly. Both the characteristic of a test, validity and reliability are necessary. For instance, a weighing machine, as a measuring instrument, is valid if it measures weight and not something else. If it also measures weight consistently and correctly, the weighing machine is both valid as well as a reliable instrument. An instrument may be reliable but not valid, if the weighing machine, for example, measures height instead of weight but measures height correctly. Likewise, an instrument may be valid but not reliable (A weighing machine measures weight but measures weight inconsistently and incorrectly). While pilot testing in a measuring instrument, both the characteristics of validity and reliability are important. However, validity is more important than reliability.

The reliability was determined as the total score for each student was recorded along with the scores for the even questions and for the odd questions. These teachers were taken from the population other than the experimental and control groups. Then split half method was used to determine the reliability of the test. The formula Brown Prophecy was used to determine the reliability for the complete test from the calculated correlation between the two half parts of the tests. Following Pearson Product Moment formulae were applied to find out the correlation.

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{[n \sum x^2 - (\sum x)^2][n \sum y^2 - (\sum y)^2]}}$$

Where:

N   =   number of pairs of scores

∑xy   =   sum of the products of paired scores

∑x   =   sum of x score

∑y   =   Sum of y scores

∑x^2 =   sum of squared x scores

∑y^2 =   sum of squared y scores

3.6.11 Spearman – Brown Formula

Estimated reliability of whole test = 2 (correlation between half tests)

$$\overline{\qquad\qquad\qquad\qquad\qquad}$$

1 + (correlation between half tests)

(Collins *et al.,* 1969, p.35)

By applying the above mentioned formula on a sample of 10 teachers, the calculated

value of r was 0.67. By putting in Spearman –Brown formula:

Estimated reliability of whole test = $\dfrac{2 \text{ (correlation between half tests)}}{1 + \text{(correlation between half tests)}}$

Estimated reliability of whole test = $\dfrac{2\,(0.67)}{1 + (0.67)}$

The reliability of the whole test was 0.80 high coefficient is the indication of high

 Reliability. Therefore, the test was found to be reliable.

3.7 Data Collection and Analysis

Data collection is a field based process. Special care was taken to ensure the

right type of data, quality, transparency, statistical factors dry run down, flow chart,

reliability, coding sheets, recovery, on-the-ground sources, comparability, regularity

creating interest,   maintaining tempo, institutional location and all possible

arrangements constituted some of the essential elements in this process. The training was conducted from November-2017 to December-2017, maintaining timing from 1600 hours to 1700 hours. Statistical procedures were needed to analyse the data. The posttest scores for the control group and the experimental group were summarized by finding out their means, standard deviations, minimum, maximum and total numbers. The scores of both groups were displayed through histograms.

Association between potential for improving performance (PIP) and academic achievement was displayed through the scatter plot.

The difference between posttest by control group and experimental group was determined by using independent t test. Liner regression analysis was used to predict the portion of academic achievement by PIP.

3.8 Internal and External Validity of Experiment

Pretest posttest control group design was used in this investigation. All possible efforts were made to control extraneous variables.

Sources of variation other than training were controlled by making conditions as similar as possible for the both control group and the experimental group. Unknown and uncontrollable sources of variation were equalized by randomization of subjects.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

In systematic training, first we create a gap between what we are performing and what we want to perform. Here the performance is taken as the ratio between the accomplishment and the costly behaviour. We are performing when the value of our accomplishment is more than the effort, time and money we invested in this performance. Human performance model by international society for performance improvement (Aziz, 2013) was partially adopted in this training. A gap stated in this model was adopted in this systematic training by creating gaps between exemplary performer and other performers. An exemplary performer was a teacher who performed the best in the pretest. As per Gilbert (1996) model, there are six factors that contribute in our performance. Out of these six variables, three make environmental support while the remaining three belong to the person's repertory of behaviour. All the teachers were taken from the same organizations so it was presumed that they have the same environmental support i.e. information, instruments and incentives. And their Person's repertory of behaviour except their knowledge and skills were also similar to one another as they were taken from the same organization. In this way, their performance differences were due to their knowledge and skills. It means that the exemplary performer had the best knowledge and skills to perform. That is why he performed exemplary. The exemplary performer tried to transfer his knowledge and skills to the other performers through lecture, presentation, discussion and role playing. The control groups' scores were converted into Potential for Improving Performance (PIP) as per method given by Gilbert (1996). Blocking of lurking or extraneous variables is not the subject of pretest posttest control group

design. Both groups had similar lurking variables at the time of posttest scores. Statistical tests were applied between the posttest scores of the control group and experimental group. It was presumed that if exemplary performer's performance was better than others due his knowledge and skills, so, when exemplary performers would shift his knowledge and skills to others, their performance would also increase up to the exemplary level. And a teacher having wider gap would increase his/her performance at higher rates as compared to the teachers who would have less gap. This training had .626 size effect which is very close to the .62 size effect given in review of literature.

SECTION 1
DESCRIPTIVE STATISTICS DATA DISPLAY
AND SUMMARIZATION

4.1 Demographic Profile

At the time of this training, there were 200 Secondary School Teachers working in the district Rajanpur. The list of teachers was obtained from the Executive District Officer (Education). There were 190 SSTs who agreed to participate in the study. They were divided into six groups through simple random method. Out of the six groups, two groups were again selected randomly. The demographic profile of the teachers is as under:

Table 3 Demographic Profile of Teachers' Sample District Rajanpur

Variable	Category	Frequency	Percentage
Gender	Male	60	100
	Total	60	100
Location area	Urban	22	37
	Rural	38	63
	Total	60	100
Academic Qualification	B.A./ B.Sc.	03	05
	M.A./M.Sc.	55	92
	M.Phil/MS.	02	03
	Total	60	100
Professional Qualification	B.Ed./B.S.Ed.	36	60
	M.Ed.	23	38
	M.Phil/MS (Edu.)	1	2
	Total	60	100
Teaching Experience in Punjab School Education Department	Less than 5 years	22	36
	5 to 10 years	08	13
	11 to 15 years	05	09
	Above 15 years	25	42
	Total	60	100

Table 3 shows the demographic profile of teachers. Academic qualification-wise analysis indicates that nine out of ten teachers held M.A. /M.Sc. degree and only one out of ten had more than prerequisite qualification. Professional qualification-wise analysis indicates that approximately three out of five teachers held Bachelor degree in Education and about two out of five held Master degree in Education or higher degree. As far as teaching experience of teachers in Punjab School Education Department is concerned, about more than two out of five teachers had an experience of more than 15 years. Less than two out of five teachers were newly recruited having less than five years experience. And remaining one out of five teachers were having experience of teaching between five to fifteen years.

4.2 Normality of the Data

In most cases of data analysis, such as in regression, it is very important to analyse the variables of the study in perspective of natural life (Tabachnik & Fidel, 2007). Failure to meet this assumption may also distort the relationship and the importance of tests. The variable has a normal distribution method that distributes the facts in a symmetrical and normal curve (this is the best frequency in cases around the distribution center) (Field, 2013; Graphite & Nau, 2008; Balant, 2013).

On the other hand, irregular distribution was observed while there was a loss of symmetry (known as aberration) or pointy or flattened (Field, 2013). The deviant distribution is not symmetrical (i.e. the highest frequency of cases converge in a state that abandons distribution) (Field, 2013; Ballant, 2013).

Frequency distribution of high quality deviation tends to the left, because this classification is grouped to the left of distribution. Another term to explain abnormal distribution is flattening. It indicates the peak distribution, or it can be described that the data is collected from the end of the distribution (Field, 2013; Margon, et al, 2012; Ballant, 2013). A distribution with high kurtosis, called leptokurtic, is very peaked

with the pointy ends of the distribution. If the Kurtosis is not very high then it is called platykurtic. It is flat and has many instances between the ends of the distribution (Field, 2013; Pallant, 2013). A number of approaches can be utilized to assess the normality. They can mainly be grouped into two categories: graphical and statistical (Tabachnick & Fidell, 2007). Display of data or graphical forms involve a visual check of frequency histograms, expected, normal probability plot, or de-trended normal probability plot of a given variable (Pallant, 2013; Tabachnick & Fidell, 2007). For example, a researcher can find out normality by using frequency histograms of a variable in order to check whether scores appearance is normally distributed. The expected normal probability plot is also used by a researcher. In a normal distribution a reasonably straight line can be found (Pallant, 2013). It is also used for visual inspections which tend to be subjective.

Researchers use different strategies to assess normality. Skewness and kurtosis values can be found out for the purpose. Without any flaw, both the skewness and kurtosis values have to be zero (Field, 2013; Morgan, et al., 2012). It is right that the absolute value of skewness or kurtosis is less than 1, the distribution is taken as normal (Morgan, et al., 2012). In some cases, the researchers may use z-score of skewness and kurtosis. (Field, 2013; Morgan, et al., 2012; Tabachnick & Fidell, 2007). The ranking can be obtained by dividing the skewness value to its general errors (or the kurtosis value by means of its preferred errors). If in absolute measurement, the values are less than 2.58, then the distribution can be taken as normal. However, the drawback of this approach is that the standard error relies on the sample length (Morgan, et al., 2012; Tabachnick & Fidell, 2007). In large samples, if the samples are more than 200, there may be a general error. In huge sample sizes, the z-scores of the skewness and kurtosis increases error level, even the data are taken from a normal distribution (Field, 2013). Therefore, in case of huge samples their actual values are more critical than the z-scores of skewness and kurtosis (Tabachnick & Fidell, 2007). In short, it can be said that z-scores of the skewness and kurtosis should not be used in case of large sample sizes (Field, 2013). Another way to check the normality of distribution may be the use of Kolmogorov-Smirnov check or Shapiro-Wilk check. These checks examine whether the distribution is normal and can suggest trend deviations, and compute the large values (Field, 2013).

If the cost of those assessments is more than 0.05, then the distribution is ordinary. But, these sorts of exams must not be utilized in massive samples (2 hundred or extra). In colossal samples, the checks of Kolmogorov-Smirnoff and Shapiro Wilk tend to be wide even if the most effectively detected distribution deviates barely from normal (Field, 2013).

Box plot of posttest scores for experimental group was as under:
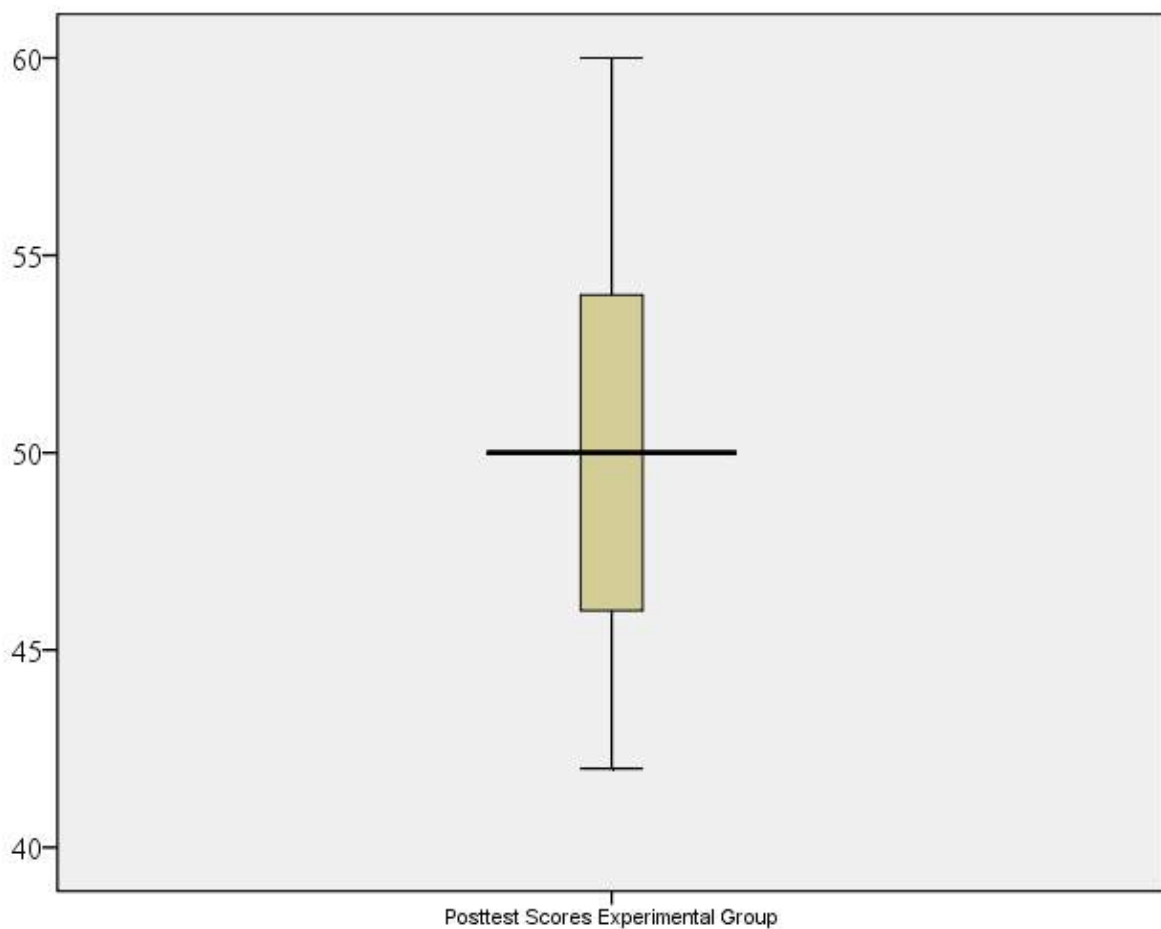
Figure 11 Distribution of Posttest Scores for Experimental Group

Figure 11 shows that Posttest Scores for Experimental Group is normal. No outlier is found in box plot. For the current research, the researcher visually inspected the distribution of the dependent variable. Box plot is a standardized way of displaying of distribution of data based on five numbers. It tells us about the

dispersion of data. Median (50th percentile) the middle value of the data set. First quartile (25th percentile) the middle number between the smallest number and the median of data set. Third quartile (75th percentile) the middle value between the median and the highest value of the data set.

Numerical description of data along with p-value for Shapiro-Wilk test was as under:

	Statistics	*Sig.*
Valid	30	
Missing	0	
Skewness	.198	
Std. Error of Skewness	.427	
Kurtosis	-.847	
Std. Error of Kurtosis	.833	
Shapiro-Wilk		.176

P-value for Shapiro-Wilk test was .176.

.

Table 3 Description of Pretest Scores of the Control Group

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest CG Score	30	30.00	56.00	45.53	6.32
Valid N (list wise)	30				

Table 4 Description of Pretest Scores of the Experimental Group

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest EG Score	30	32.00	54.00	45.53	6.12
Valid N (list wise)	30				

On the base of pretest scores both the control group and the experimental

groups were equated. Their mean scores were same but there was a little difference on

dispersion. The control group's standard deviation was 6.32 while the experimental

group's standard deviation was 6.12.

4.3 Posttest Scores of the Control Group
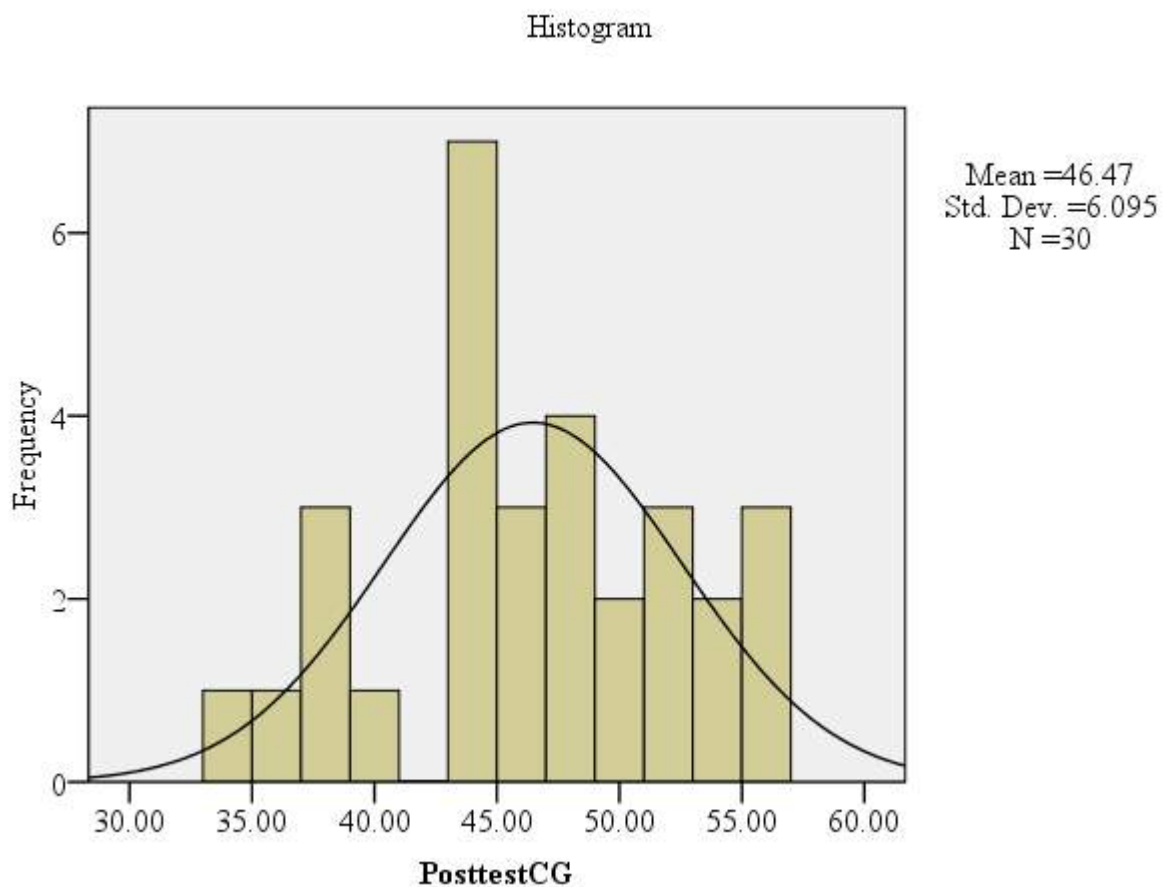
Figure 12 Display of Posttest Scores for Control Group

The histogram shows that posttest scores were normally distributed. There

were not any out of pattern scores present in the display of posttest scores for control

group.

Table 5 Description of Posttest Scores of the Control Group

	N	Minimum	Maximum	Mean	Std. Deviation
Posttest CG Score	30	34.00	56.00	46.47	6.10
Valid N (list wise)	30				

Although the control group did not receive any training yet their mean score was increased from 45.53 to 46.47 while dispersion was decreased from 6.12 to 6.10. This was their by default learning during six weeks of systematic training. As each multiple choice question carried two marks, so this difference might be viewed as a little one.

Then posttest scores were converted into Potential for Improving Performance (PIP).
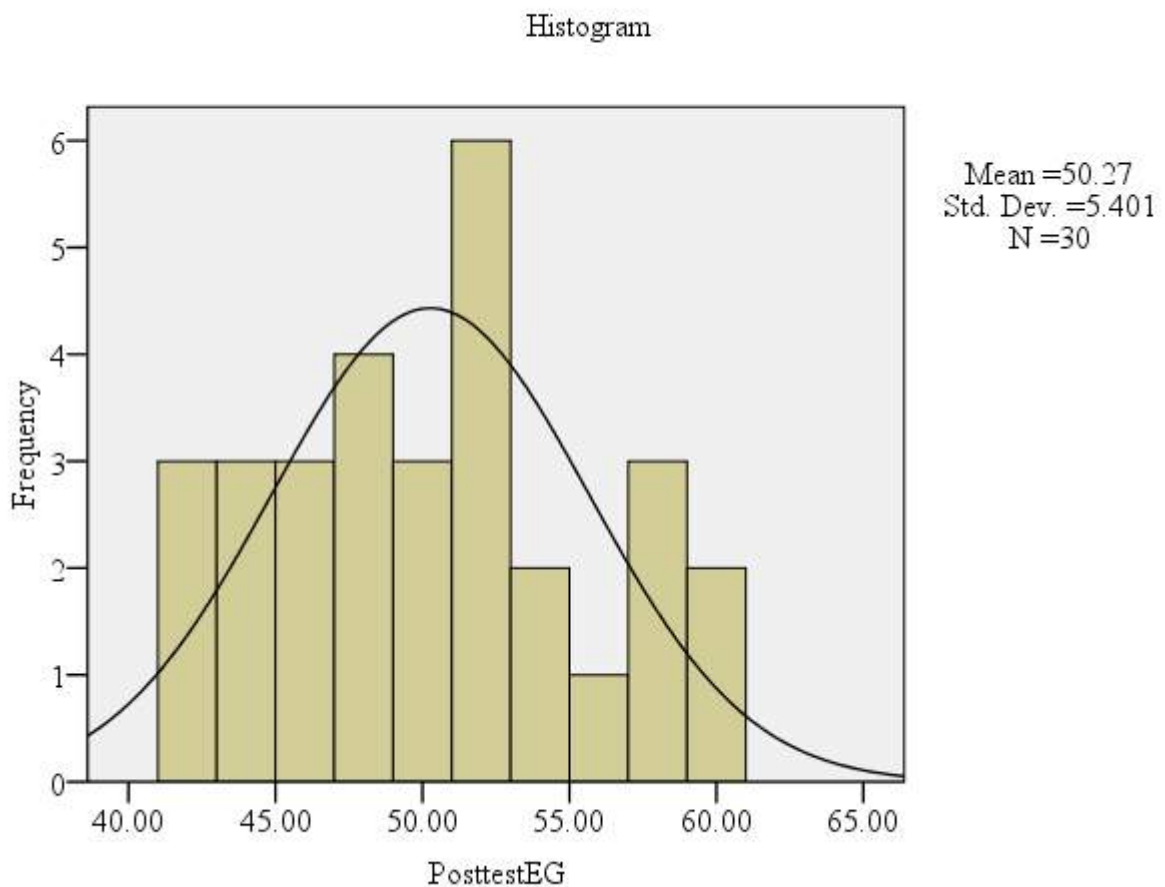
Figure 13 Display of Posttest Sores for Experimental Group

The histogram shows that posttest scores were normally distributed. There was no out of pattern score present in the display of posttest scores for experimental group.

Table 6 Description of Posttest Scores of the Experimental Group

	N	Minimum	Maximum	Mean	Std. Deviation
Posttest EG Score	30	42.00	60.00	50.27	5.40
Valid N (list wise)	30				

The mean score of the experimental group was greater than the mean score of the control group while standard deviation was lesser than posttest scores of the control group. Mean score and standard deviation showed the positive effect of systematic training.

Table 7 Description of PIP of the Control Group Pretest Based

	N	Minimum	Maximum	Mean	Std. Deviation
PIP	30	.81	1.52	1.0223	.1691
Valid N (list wise)	30				

Histogram

Mean =0.99
Std. Dev. =0.133
N =30
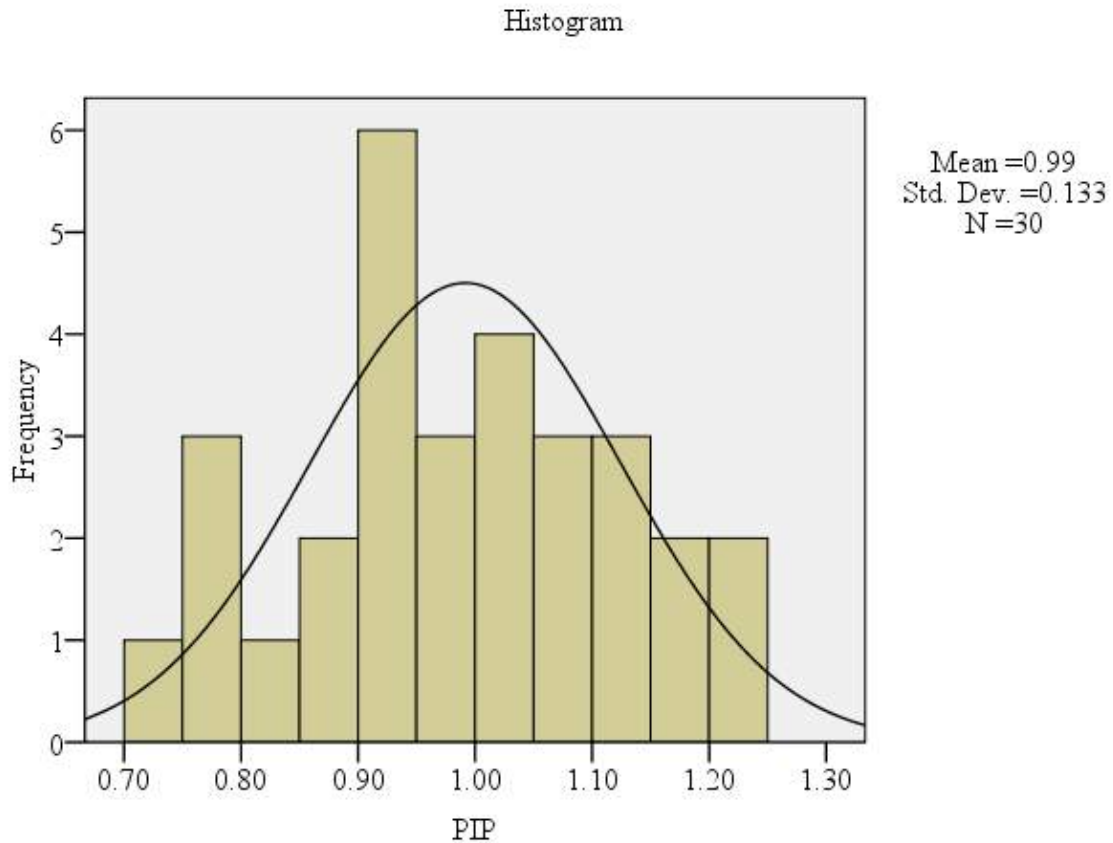
Figure 14 Display of PIP for Control Group

The above figure shows the patterns of data.

Table 8 Description of PIP of the Control Group posttest Based

	N	Minimum	Maximum	Mean	Std. Deviation
PIP	30	.73	1.21	.9917	.13290
Valid N (list wise)	30				

Tables 6 and 7 describe posttest scores of the control and experimental groups respectively. The mean score of the experimental group is higher and standard deviation is lower than that of the control group. It indicates the positive effect of training. Dispersion in scores of the experimental group decreases after treatment which favours the positive influence of training. It also decreases the possibility of

93

any lurking variables. There were two hypotheses of this investigation; the first one was that the trained teachers' mean score was no more than the teachers' who did not receive training and research hypothesis that the trained teachers' mean score was more than the teachers' who did not receive training. The null hypothesis was rejected and the research hypothesis was accepted. The second hypothesis the null hypothesis that regression coefficient of PIP and post test scores was equal to was also rejected and the research hypothesis that the teachers' regression coefficient PIP and posttest scores were not equal to zero was accepted.

SECTION 2

Hypothesis Testing

In this section, it was required to test the quality of means for the control and experimental groups by using the sample data of both the groups. The descriptive statistic was used for computing potential for improving performance (PIP), identification of exemplary performer, and to create performance gap. The trainer appeared in the examination and got the best marks. A gap between the performance of exemplary performance and trainees was created as per human performance model. All the other performance related variables like work group support and organizational support for the exemplary performer and trainees were identical. The only difference between academic performance of trainer and trainees was that of knowledge, skill and ability. Every step of training and measurement was taken step by step. Since all steps of a systematic training were observed in this training, therefore, it was called a systematic training.

4.4 Hypotheses Testing

In this section, we have to test the equality of means for the control and experimental groups by using the sample data of both the groups.

i.   Research hypothesis: H_a: $\mu_i > \mu_j$ (The trained teachers' mean posttest score was more than the teachers' who did not receive training).

Null hypothesis: H_0: $\mu_i \leq \mu_j$ (The trained teachers' mean posttest score was no more than the teachers' who did not receive training).

Table 9 Results of t-test and Descriptive Statistics for Academic Achievement by Training

Group	Mean	SD	t	*df*	ES	p-value
Experimental	50.27	5.40	2.56	58	.62	.01
Control	46.47	6.10				

p<.05

In table-7, the p-value was less than the 0.05 level of significance. Therefore, the null hypothesis No.1 was rejected and the research hypothesis No.1 was supported. The group that received systematic training was statistically different from the one who did not. The difference was in favour of the experimental group. The effect size of the systematic training was ES = .62.
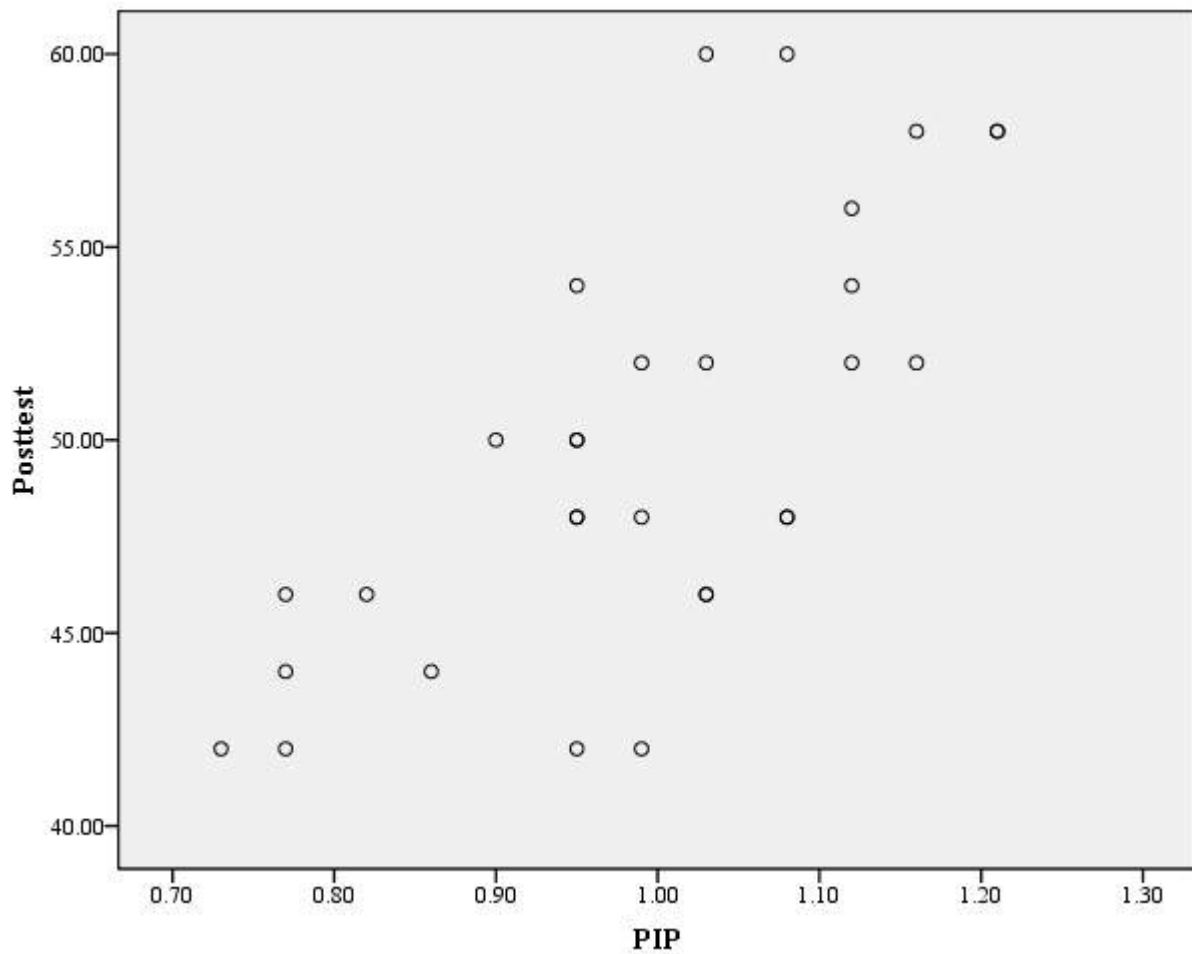
Figure 15 Display of Association between PIP and Academic Achievement

It was a visual form of data. This scatter plot indicated the pattern of data. It helped us to estimate linearity between PIP and obtained marks. It also indicated the constant variability distribution of independent variable PIP. The degree of random noise/residuals in the obtained marks was normally distributed.
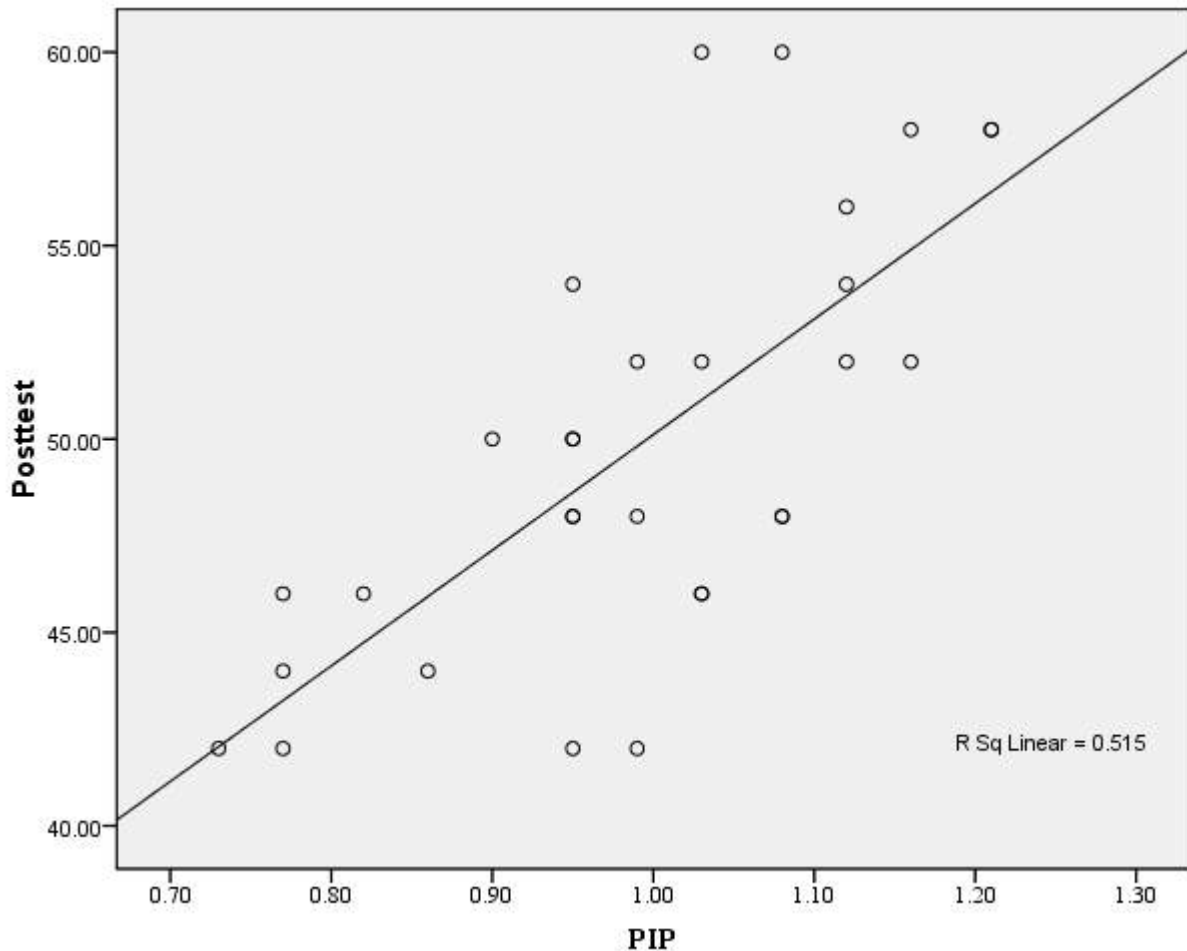
Figure 16 Display of Association and Regression Line

The line drawn through the scatter plot is regression line and represents the minimum distance between the line and actual points. The independent variable PIP represents X and dependent or outcome variable represent Y. According to Munro (2005), a regression line can also be called the line of best fit, because it is the line that best represents the pattern of the relationship between the PIP and the posttest

97

scores. If the pattern of the relationship between the independent variable X and the dependent variable Y is linear, then description of the line is possible with the formula. The basic equation for the regression line of this association is as follows:

$$Y = a + bX$$

The slope of the regression line indicates how much Y value changes when there is one unit change in the value of X.

Table 10 Correlation between Potential for Improving Performance (PIP) Scores and Posttest Scores (N=60)

Variable	Pearson correlation (r)	r
PIP & Posttest Scores	.72	.00*

Correlation is significant at the 0.05 level (2-tailed).

Table 11 presents the Pearson product movement correlation between Potential for Improving Performance scores and Posttest Scores (r = .72 and p-value= 0.001) at 0.05 level of significance. The value of r and p shows that there is a significant positive correlation between Potential for Improving Performance (PIP) and Posttest Scores of the trainees.

Table 11 Detail of Correlation between Potential for Improving Performance (PIP) and Posttest Scores (N=60)

		PIP	Posttest
PIP	Pearson Correlation	1	.718**
	Sig. (2-tailed)		.000
	N	30	30
Posttest	Pearson Correlation	.718**	1
	Sig. (2-tailed)	.000	
	N	30	30

		PIP	Posttest
PIP	Pearson Correlation	1	.718**
	Sig. (2-tailed)		.000
	N	30	30
Posttest	Pearson Correlation	.718**	1
	Sig. (2-tailed)	.000	
	N	30	30

**. Correlation is significant at the 0.05 level (2-tailed).

Table 9 exhibits the direction and strength among the independent variable of PIP and the dependent variable of posttest scores in academic achievement. It was found that there exists a positive correlation between Potential for Improving Performance (PIP) and the posttest academic achievement scores. This table presents the coefficient of correlation between PIP and academic achievement r = .718 and p-value= 0.001 at 0.01 level of significance. The value of r and p shows that there is a significant positive correlation between PIP and academic achievement of the trainees. Thus the null hypothesis No.1 was rejected and the research hypothesis No.2 was supported.

ii   Research hypothesis: Ha: $\beta_{pip,m} \neq 0$ (The Teachers' regression coefficient of PIP and posttest scores are not equal to zero).

Null hypothesis: H$_0$: $\beta_{pip,m} = 0$ (The teachers' regression coefficient of PIP and posttest scores is equal to zero).

Model Summary

Table 13 Linear Regression for Predicting Academic Achievement from PIP

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	p
1	.718	.515	.498	3.91907	29.781	.000

a. Predictors: (Constant), PIP

R^2 is the square root of R. R is the Pearson moment correlation coefficient indicating both the strength and direction of the linear relationship between the dependent variable of posttest scores and the independent variable of PIP. In the systematic training obtained marks and PIP were positively correlated, and the strength of the relationship, was strong at .718.

R^2 in the systematic training is .515, which suggests that PIP explains .515% of the variance in posttest scores. This indicates that the relationship between PIP and obtained marks is moderately strong.

Adjusted R-Square adjusts the value of R^2 when the sample size is small, because an estimate of R^2 obtained when the sample size is small tends to be lower than the actual R^2 in the population. The rule of thumb to report adjusted R^2 when it substantially differs from R^2 (Green & Salkind, 2010). In this analysis, the difference is very small (adjusted R^2= .498). Therefore, there is no need to report adjusted R^2.

The ANOVA provides the results of the test of a significance for R and R^2 using the F-ratio. In this analysis, the p-value is well below .05(p<.001). Therefore, it can be concluded that the R and R^2 between obtained marks and PIP is statistically significant (different than zero). During this experimental study, the related literature supported the directional hypothesis that treatment always has positive effect in trainings. Therefore, there is no need to apply post-hoc test here.

Table 13 Coefficients of Regression

Model		B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	20.233	5.477		3.694	.001
	PIP	29.883	5.476	.718	5.457	.000

a. Dependent Variable: Posttest

Table 11 provides useful information for understanding the regression equation. Under the column marked un-standardized and sub-column B, the numerical value on the first row, labeled (Constant), is the value for intercept (a) in the regression equation. The numerical value on the second row, labeled as PIP, is the value of slope (b) for the regression equation. Therefore, the intercept is 20.23 and the regression coefficient is 29.883.

Table 10 and table 11 therefore reject our second null hypothesis. They show an R Square of .515, intercept of 20.233, a slope of 29.883 with a degree of freedom 58. The R Square value indicates that about 52% portion of posttest scores were explained by the PIP. The other variables affecting the obtained marks were not studied in this investigation.

Thus the regression equation could be formulated as under:

Posttest Scores =   20.233 + 29.883 PIP

This prediction equation shows if after pretest, the potential for improving performance (PIP) of a trainee/teacher is calculated as one, his/her marks can be predicted to increase by 29.88 marks in the posttest after receiving systematic training.

CHAPTER 5
SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This experimental research study examined the effect of systematic training on teachers' performance. The objectives of the study were to design the systematic training and to find out the effect of systematic training on learning performance of teachers in their job-related tasks and to set up the linear regression equation for predicting their posttest achievement. There were two hypotheses (i) the trained teachers' mean score was more than that of the teachers who did not receive training and (ii) the teachers' regression coefficient of PIP and posttest scores was not equal to zero. So, the study was conducted to determine the effect of systematic training (carried out using step by step procedures) on a sample of teachers. The experimental study focused on the performance of secondary school teachers (SSTs) in District Rajanpur.

The trainees undertook a pretest and post-test with both the experimental group and the control group, in order to determine the effect of systematic training. Potential for improving performance (PIP) of teachers was also determined.

In order to achieve these objectives, a list of all secondary school teachers of accessible population was obtained from the Executive District Office (Education) Rajanpur. They were divided into equal six equal groups having 30 teachers each. Then randomly two groups were selected, one for the experimental group and other for control group. Pretest posttest control group research design was used. The

experimental group was given treatment for one hour daily for a duration of six weeks while the control group received no training/treatment.

The data collected were analysed using descriptive and inferential statistics. Potential for improving performance (PIP) of trainees was calculated by the ratio of individual performance to the typical performance. Data were displayed in graphs and numbers. Independent t test, correlation and regression were used to analyse the data.

5.2   Findings

Statistical analysis of the data yielded the following findings:

Result of systematic training was statistically important.

1. Analysis of the results of t test and descriptive statistics for academic achievement by training showed that p value was less than the 0.05 level of significance. Thus the null hypothesis No.1 (The trained teachers' mean score was equal to or less than the teachers' who did not receive training) was rejected and the alternative hypothesis (The trained teachers' mean score was more than the teachers' who did not receive training) was supported.

2. Effect size as determined by Cohen's ES was 0.626 which indicated a medium large magnitude of systematic training effect on male secondary school teachers of Rajanpur.

3. The scatter plot showed that the relationship between PIP and academic performance was linear. Regression line showed that the learning rate of the trainees who got poor marks in pretest was generally higher than those who got higher marks in the pretest.

4. The trainees, whose academic performance was already near to the exemplary performer, improved at lower rates. On the other hand, the teachers, who had a higher

103

gap of PIP to that of exemplary performer at the time of pretest, improved at higher rates.

5. In the systematic training, potential for improving performance (PIP) is inversely proportional to the existing level of performance.

6. The regression line tells us that y intercept is 20.233 and the regression coefficient is 29.883. The R Square value indicates that about 52% portion of posttest scores could be explained by PIP. The regression equation shows that the posttest scores are predicted to increase units 29.88 when the PIP goes up by unit one.

5.3   Discussion

Global research maintains that training-related changes result in improved job performance and other positive changes (Hill & Lent, 2006) that serve as antecedents of job performance. Effect size of .626 found in this study was consistent with the past results of the effectiveness of training programs in different organizations evaluated by Kirkpatrick's (1993) training evaluation model. The results of this study collaborate with Kirkpatrick's work in the context that treatments used to determine the attitudes, knowledge and skills that are necessary to present the training program is a way that enables the participants not only to learn what they need to know but also to react favourably to the program. Reassuringly, Arthur Jr et al. (2003) conducted a meta-analysis of 1152 effect sizes from 165 sources and ascertained that in comparison with no-training or pre-training states, training had an overall positive effect on job-related behaviors or performance (mean effect size or ES= 0.62). The teacher is a person who helps the students in such way that they will be able to solve their problems with their own minds. Therefore, the improved marks in the posttest of trainees are also a part of the performance of their trainer/teachers.

The data was collected through the experiment which is considered to be a reliable source. And the independent t test was applied between post test scores of the experimental and control groups. Both the groups availed themselves of similar type of environment during the period between the pretest and the posttest. That is why the confounding variables were controlled in this research study. Although training was conducted in Pakistani environment where most organizations are not performance based. But the selected trainees and trainer belonged to the same organizational background. The trainer or exemplary performer was equipped with better knowledge and skills as the same was reflected in the pretest. All other performance supporting factors for trainees and trainer were almost the same. The trainer shared his knowledge and skills to uplift the trainees to the targeted goals i.e. his own level. The trainees having more PIP improved their performance at higher rates. Improved marks in the posttest as compared to the pretest were the effect of this systematic training.

The formulated equation (Posttest Scores =20.23+ 29.88 PIP) can be used as a training need analysis tool which may vary case to case, as per the need of training. It can predict, approximately fifty percent academic performance of teachers, before conducting the training. It also provides the justification of the training. In this way, it can predict the intensity of need of training. Potential for improving the academic performance (posttest scores) is found to be directly proportional to the teachers' PIP.

The focus of this study was to figure out the effect of systematic training on teachers' performance in public (Government) schools. The design and development of research technique turned to utilizing HPT Standards, Gilbert's leisurely theorem and human competence. Gilbert's "six boxes," divided into two groups; Environmental and Individual. The environmental components are information, resources, and incentives. The individual components are knowledge, capacity and

motivation. This model is a thorough classification of these factors. Taking into account more than 60 years of fundamental research of behavioral science, these factors were summarized in six simple boxes that can be easily assimilated. The systematic training deals with personal repertory of teachers whereas all other performance related variables were kept constant.

This systematic training was different from classroom learning for some reasons; firstly, it was conducted after university education (long term development) of teachers. Secondly, in classroom learning, the focus is always on open learning and understanding about a topic theory or laws, etc. But in a systematic training, focus shifts from open learning to the specific learning. Lastly, there is a context sensitivity that shifts systematic training focus from formal learning style to informal and motivated learning styles. The main focus of systematic training is on measurement, need analysis and cause analysis.

Reich (2011) argues that technology shapes our global world continuously. In a technology driven society, educational leaders are performing the difficult task of preparing trainees to achieve the desired goals. Human performance technology (HPT) has been used as a catalyst for improving the performance of teachers. The effect of technology can be felt in our industries and medical fields at large. However, our schools are not yet ready for taking full advantage of the technology. Balanskat, Blamire, and Kefala (2006) expressed that teachers seem to value the technology as an instructional tool, yet teachers face challenges coordinating technology with the learning procedure. Equally, position on the ground is at variance because body of our schools is inadequately equipped.

The technology in training sessions and classrooms can be improved by identifying performance gaps. It is taken as the difference between the required level and the actual level of performance. Behavioral Engineering Model by Gilbert (1996) provides the solution for performance problems by focusing on environmental aspects that increase productivity. Woodley (2005) explains that human performance technology is a way of solving performance related problems. It avails itself of the opportunities related to work performance and human capital improvement. It is a result-orientated field which focuses on achievements that are valued by the both the individuals and the organizations. It also emphasizes the need analysis to determine the root causes of performance related problems.

Richey, Klein and Nelson (2004) expresses that both the Instructional design and human performance technology are linked to improving learning and organizational performance. They have some common principles that can address the problems by introducing different interventions. The Cause Analysis is the initial phase in Gilbert's model. "Cause analysis helps identify what, why, and how something happened. The main goal is to solve this problem so that it doesn't happen again" (Woodley, 2005, p. 15). The Gilbert's BEM was primarily used for military and business organizations, but this study demonstrated that it can be useful for public (Government) trainings, after making some changes in it. The Cause analysis phase of Gilbert's model explained that a performance gap might exist between two levels of performance.

This study was not conducted in purely performance based organization where teachers are expected to perform as per their knowledge and capacity. Otherwise, teachers tend to save their energies even being capable to perform. The gap creation and need analysis for training were adopted according to the Human Performance

107

Model. But the whole cyclic process of this model was not adopted in this training. Therefore, the results of systematic training are likely to be improved if it is conducted in the purely performance based system. Performance based analysis involves gathering formal and informal data to achieve the desired ends or goals. Performance based goals analyse various perspectives on a problem, or opportunity, drives or barriers leading to an increased performance, examining alternatives. Education environment is much more complex, involving teachers, learners, learning environment and instructional materials. This calls for systematic training and creating trainers as role models so as to increase learn-ability at the age of technology in 21st century. This is what global research, local initiatives and this experimental study sought to explore.

5.4   Conclusions

1.   The Potential for Improving Performance (PIP) is a conceptual tool that helps us to   find out the comparative need of training among different groups of teachers' before conducting the training.

2.   The results of this study showed that in a systematic training, potential for improving academic performance (PIP) is inversely proportional to the existing level of academic performance. It means that the trainees, whose academic performance was already nearer to the performance of the exemplary performer, improved at lower rates. On the other hand, the teachers, who got low marks in the pretest and had larger gap with the exemplary performer, improved at higher rates.

3.   As 52% portion of the posttest scores after systematic training in this study was explained by potential for improving performance (PIP), the teachers who

received this systematic training performed better than those teachers who did not receive this training.

4. In Pakistan like other similar countries, training is usually conducted without adequate planning. The results of this study provide sufficient evidence that systematic training is a highly organized form of training. It justifies its expenses by improving performance of teachers for the qualitative change. It focuses on step by step procedures, systematic measurement and feedback.

5. Systematic training improves efficiency of training by improving the measurement of performance across the levels.

6. This type of training has a systematic technique of PIP which justifies the need for training. It saves time, effort, and cost, both in private and public sectors. In Pakistan, the systematic training may have full potential to improve the performance of teachers in a logical and reasonable manner with an increased degree of sustainability.

5.5 Implications

Some implications for planning and execution of systematic training include:

i. Potential for improving performance of teachers (PIP) can be quantified and estimated even before the training which may save precious time, effort and money.

ii. Priority of conducting training among different groups of teachers can be determined by computing their potential for improving performance (PIP).

iii. Both individual and public resources can be minimized by using systematic training and yielding high returns.

5.6   Recommendations

In the light of results and conclusion, the following recommendations are formulated in order to fulfill the maximum objectives of systematic training and development activities.

5.6.1 Recommendations for the Stake Holders

Systematic training needs to be taken as a tool to improve teachers' performance. Should it be low due to the lack of their knowledge and skills, need analysis of training works better among the teachers of the same organization.

1.   Need analysis for systematic training may be conducted before conducting the training. It is a comparison between accomplishment and costly behaviour. It tells the comparative need of training and estimates how much benefits are expected from this particular training.

2.   Systematic training in the School Education Department, Punjab and the country as well may be institutionalized in both pre-service and in-service teacher training programs.

3.   In the era of 21st century integration of systematic approaches of instruction, systematic thinking and instructional technology need to be built up for improved performance of trainees; teachers and trainers at large for qualitative change in education.

5.6.2 Recommendations for Future Researches

The focus of the present study was on academic performance. It can open the doors for further research. The same type of study based on human performance with direct physical measurement using ratio scale may have much better results. The

systematic training has good potential for improving teachers' performance. Further researches can be conducted using different methods, quantitative and qualitative at different levels and in different contexts having a focus on accuracy in performance measurement of teachers. The prediction equation for academic performance in a systematic training can be formulated and replicated in the systematic training programs. It may have potential to improve the performance of teachers on an economical scale. For strategic planning on a long term basis, the professional training institutions may generate longitudinal studies for providing more substantial evidence.

5.6.3 Generalizability

The results of this study can be generalized on the SSTs of district Rajanpur working in the session 2015-16. This was an experimental study where generalizability is not essential, yet there are certain characteristics which can support to move beyond data. In macro context, the Pakistani's public education system is well-articulated from primary to university; teachers possess common academic and professional qualifications, vigorous recruitment training and career development perspectives. They are monitored and evaluated at different levels - district, provincial (Education Departments/Higher Education Commissions) and national (through HEC and inter-ministerial forums). Thus, in the formulation of programs for the issuance of a policy and their executions are feasible for introducing innovative initiatives. On technical grounds, the random sampling procedure and statistical treatment of the data observation techniques, lesson plans and meta-analysis of the results also provide reasonable evidence to utilize the formidable findings for redoing the study and extended implications for strategic planning.

REFERENCES

Aguinis, H., & Kraiger, K. (2009). Benefits of training and development for individuals and teams, organizations, and society. *Annual review of psychology, 60*, 451-474.

Alkhalaf, and S. Sager. 2015. *The Competency Toolkit.* 2nd ed. 2 vols. Amherst, MA: HRD Press.

An Overview of the Revised Bloom's Taxonomy - Applying it to E-Learning. (2019, 01 22). Retrieved 03 30, 2019, from Custom E-learning and Online Training Blogs - CommLab India: https://blog.commlabindia.com/elearning-design/blooms-taxonomy-examples

Arthur Jr, W., Bennett Jr, W., Edens, P. S., & Bell, S. T. (2003). Effectiveness of training in organizations: a meta-analysis of design and evaluation features. *Journal of Applied psychology, 88*(2), 234.

Aziz, D. M. (2013). What's in a Name? A Comparison of Instructional Systems Design, Organization Development, and Human Performance Technology/Improvement and Their Contributions to Performance Improvement. *Performance Improvement, 52*(6), 28-35.

Balanskat, A., Blamire, R., & Kefala, S. (2006). The ICT impact report. *European Schoolnet*.

Barksdale, S., & Lund, T. (2001). *Rapid Evaluation: Tools, Worksheets, and Job Aids to Help You Develop an Evaluation Strategy, Use the Right Evaluation Approach, Understand and Analyze Evaluation Data*: American Society for Training and Development.

Barry, G., & Herman, J. (1997). True and quasi-experimental designs. Practical assessment. *Res Evaluation, 5*, 14.

Betcherman, G. (1992). Are Canadian firms underinvesting in training? *Canadian Business Economics, 1*(1), 25-33.

Bloom's Taxonomy Wheel. (n.d.). Retrieved 03 20, 2019, from Miller, Jason / Bloom's Taxonomy Wheel: https://www.ajusd.org/Page/4336

Burkett, H. (2002). Evaluation: Was your HPI project worth the effort. *HPI Essentials, American Society for Training and Development, Alexandria, VA*.

Carliner, S., Ally, M., Zhao, N., Bairstow, L., Khoury, S., & Johnston, L. (2006). A REVIEW OF THE STATE OF THE FIELD OF WORKPLACE LEARNING: WHAT WE KNOW AND WHAT WE NEED TO KNOW.

Cheng, E. W., & Ho, D. C. (1998). The effects of some attitudinal and organizational factors on transfer outcome. *Journal of Managerial Psychology, 13*(5/6), 309-317.

Chevalier, R. (2004). *Human performance technology revisited*: International Society for Performance Improvement.

Chyung, S. Y. (2008). *Foundations of instructional performance technology*: Human Resource Development.

Dick, W. (1996). The Dick and Carey model: Will it survive the decade? *Educational Technology Research and Development, 44*(3), 55-63.

Dick, W., & Reiser, R. (1996). Instructional planning: A guide for teachers: Boston: Allyn and Bacon.

Doggett, A. M. (2005). Root cause analysis: A framework for tool selection. *The Quality Management Journal, 12*(4), 34.

Dormant, D. (1992). Implementing human performance technology in organizations. *Handbook of human performance technology: A comprehensive guide for analyzing and solving performance problems in organizations*, 167-187.

Etzioni, A. (1960). Two approaches to organizational analysis: A critique and a suggestion. *Administrative science quarterly*, 257-278.

Gilbert, T. F. (1978). Human competence—engineering worthy performance. *NSPI journal, 17*(9), 19-27.

Gilbert, T. F. (1996). *Human competence: Engineering worthy performance*. Washington, DC, and Amherst, MA: ISPI and HRD Press: (ISPI tribute edition).

Goldstein, I. L., & Ford, J. K. (2002). Training in organizations Belmont. *CA: Wadsworth*.

Goodrum, P. M., & Gangwar, M. (2004). Safety incentives: A study of their effectiveness in construction. *Professional Safety, 49*(7), 24.

Gosling, D., & Moon, J. (2001). How to write learning outcomes and assessment criteria. *Londyn, SEEC Office, University of East London*.

Green, S. B., & Salkind, N. J. (2010). *Using SPSS for Windows and Macintosh: Analyzing and understanding data*: Prentice Hall Press.

Gustafson, K. (1996). International Encyclopedia of Educational Technology. *Edited by Plomp, T. & Ely, AP Pergamon, USA*.

Haines, V. Y., Merrheim, G., & Roy, M. (2001). Understanding reactions to safety incentives. *Journal of Safety Research, 32*(1), 17-30.

Hale, J. (2011). Scientific measures: Reliability and validity. *Retrieved April, 23*, 2012.

Harless, J. (1973). An Analysis of Front-End Analysis. *Improving Human Performance*.

Harless, J. (1995). Performance technology skills in business: Implications for preparation. *Performance Improvement Quarterly*, *8*(4), 75-88.

Hill, C. E., & Lent, R. W. (2006). A narrative and meta-analytic review of helping skills training: Time to revive a dormant area of inquiry. *Psychotherapy: Theory, Research, Practice, Training, 43*(2), 154.

https://www.ispi.org/ISPI/Get_Certified/CPT_Certification/CPT_Standards/ISPI/Credentials/
        CPT_Certification/CPT_Standards.aspx?hkey=8ad9833c-bc42-4777-b8a9-
        67b52cc2aa2a

Johnson, B., & Christensen, L. B. (2019). Educational research: quantitative, qualitative, and
        mixed approaches. Los Angeles: SAGE.

Kaufman, Roger, Hugh Oakley-Browne, Ryan Watkins, and Doug Leigh. *Strategic planning
        for success: Aligning people, performance, and payoffs*. John Wiley & Sons, 2003.

Kazanas, H., & Rothwell, W. (2004). Mastering the instructional design process: A
        systematic approach: San Fransisco: Pfeiffer.

Kennedy, D. (2006). *Writing and using learning outcomes: a practical guide*: University
        College Cork.

King Jr, C. L. (2013). An exploration on the use of Gilberts behavior engineering model to
        identify barriers to technology integration in a public school.

Kirkpatrick, D. L. (1975). *Evaluating training programs*: Tata McGraw-Hill Education.

Luthans, F., & Youssef, C. M. (2007). Emerging positive organizational behavior. *Journal of
        management, 33*(3), 321-349.

Mager, R. F. (1992). *What Every Manager Should Know about Training, Or," I've Got a
        Training Problem"--and Other Odd Ideas*: CEP Press.

McCord, B. (1976). Job instruction. *Robert L. Craig (ed.)*, 32-33.

McKinsey Quarterly (2006), ''An executive take on the top business trends'', a McKinsey
        Global Survey.

Miller, J. A., & Osinski, D. M. (2002). Training needs assessment. *European industrial
        Training Journal, 18*(3), 22-29.

Moore, D. S., & McCabe, G. P. (1993). *Introduction to the Practice of Statistics*: WH
        Freeman/Times Books/Henry Holt & Co.

Munro, B. H. (2005). *Statistical methods for health care research* (Vol. 1): Lippincott
        Williams & Wilkins.

Nguyen, F., & Klein, J. D. (2008). The effect of performance support and training as
        performance interventions. *Performance Improvement Quarterly, 21*(1), 95-114.

Nickols, F. W. (2005). Why a stakeholder approach to evaluating training. *Advances in
        Developing Human Resources*, *7*(1), 121-134.

Odiome, a. c. i. C., Human. (1996). Engineering Worthy Performance. *Thomas F. Gilbert.
        Pfeiffer*.

Paradise, A. (2007). State of the industry: ASTD's annual review of trends in workplace
        learning and performance. *Alexandria, VA: ASTD*.

Pershing, J. A., Stolovitch, H. D., & Keeps, E. (2006a). *Handbook of human performance technology: Principles, practices, and potential*: Pfeiffer Los Angeles, CA.

Pershing, J. A., Stolovitch, H. D., & Keeps, E. J. (2006b). *Handbook of human performance technology: Principles, practices, and potential*: Pfeiffer Los Angeles, CA.

Piskurich, G. M. (2002). *Hpi essentials: a just-the-facts, bottom-line primer on human performance improvement*: American Society for Training and Development.

Psychomotor Domain of Learning. (2013, 07 22). Retrieved 03 18, 2019, from LinkedIn SlideShare: https://www.slideshare.net/alexlegara1/psychomotor-domain-of-learning

Punjab School Education Sector Plan. (n.d.). Retrieved July 17, 2020, from https://planipolis.iiep.unesco.org/sites/planipolis/files/ressources/pakistan_punjab_secto r_plan_2013-2017.pdf

Reich, J. (2011). Thoughts on Digital Equity. Harvard Graduate School of Education.

Richey, R. C., Klein, J. D., & Nelson, W. A. (2004). Developmental research: Studies of instructional design and development. *Handbook of research for educational communications and technology*, *2*, 1099-1130.

Rosenberg, F., Celikovic, P., Michlmayr, A., Leitner, P., & Dustdar, S. (2009, September). An end-to-end approach for QoS-aware service composition. In *Enterprise Distributed Object Computing Conference, 2009. EDOC'09. IEEE International* (pp. 151-160). IEEE.

Rossett, A. (1992). Analysis of human performance problems. *Handbook of human performance technology*, 97-113.

Rothwell, W. (Ed.). 2015. *Organization Development Fundamentals: Managing   Strategic Change*. Alexandria, VA: ATD Press

Rticle Title Figure 3a from: Wachkoo A, Bharti H (2015) Taxonomy and distribution of the ant Cataglyphis setipes (Hymenoptera: Formicidae). Biodiversity Data Journal 3: e4447. https://doi.org/10.3897/BDJ.3.e4447. (n.d.).

Rummler, G. A., & Brache, A. (1992). Transforming organizations through human performance technology. *Handbook of human performance technology: A comprehensive guide for analyzing and solving performance problems in organizations*, 32-49.

Sanders, E. S., & Ruggles, J. L. (2000). HPI soup. *Training & Development, 54*(6), 27-27.

Sleight, D. A. (1993). A developmental history of training in the United States and Europe. *Unpublished article*.

Starnes, D. S., & Tabor, J. (2018). The practice of statistics: for the Ap exam. New York: Bedford, Freeman, & Worth, high school publishers.

Spitzer, D. R. (1999). The design and development of high-impact interventions. *Handbook of human performance technology, 2*, 163-184.

Spitzer, D. R. (2007). *Transforming performance measurement: Rethinking the way we measure and drive organizational success*. Amacom Books.

Steinmetz, C. S. (1976). The history of training. *Training and development handbook*, 1-14.

Sugrue, B., & Rivera, R. J. (2005). ASTD 2005 state of the industry report. *American Society for Training & Development*.

Sutton, S. (2014). *Finding the Purpose in Church-Hurt*: WestBow Press.

Tomei, L. A. (2008). *Encyclopedia of information technology curriculum integration*: IGI Global.

Van Tiem, D. M., Moseley, J., & Dessinger, J. C. (2001). Performance improvement interventions: Silver Spring, MD: ISPI.

What is Bloom's Affective Domain - PIQC: Lec 20 of 125 by Dr. Kamran Moosa. (2017, 06 39). Retrieved 04 31, 2019, from YouTube: https://www.youtube.com/watch?v=Xg0MXjKa2Y0

Wile, D. (1996). Why doers do. *Performance and Instruction, 35*, 30-35.

Wilmore, J. (2002). Business analysis: The driving force behind the HPI process. *HPI essentials: A just-the-facts, bottom-line primer on human performance improvement*, 11-20.

Wittkuhn, K. D. (2004). Systems, nontrivial machines, circular causality, and other ghosts haunting performance improvement technology. *Performance Improvement, 43*(3), 33-37.

Woodley, D. (2005). Human performance technology: A reference manual.

Zhu, J., Rosset, S., Tibshirani, R., & Hastie, T. J. (2004). 1-norm support vector machines. In *Advances in neural information processing systems* (pp. 49-56).

Zuboff, S. (1988). *In the age of the smart machine: The future of work and power*: Basic books.

EFFECT OF SYSTEMATIC TRAINING ON TEACHERS' PERFORMANCE: AN

EXPERIMENTAL STUDY

Pre-test / post-test

Name: _____   **Sr. No** _____

Maximum marks: 100

Instructions: Attempt all MCQs. Encircle the correct option. Each question carries two marks.
The result will be used only for the research purposes.

Time: 60 Minutes   (Marks: 50).

1. First step in training is

A. planning   B. need analysis

C. selection of training material   D. setting of objectives

2. Human performance system has

 A. steering elements   B. enabling elements

C. both steering and enabling elements   D. no elements

3. Behaviour of human beings is

A. overt   B. complex

C. simple   D. covert

4. We can control human behaviour by

A. systematic thinking   B. performance measurement

C. internal and external feedback   D. motivation

5. Which one is comparatively easier to measure?

A. human behaviour   B. human performance

117

C. both behaviour and performance   D. none of the above

6. Systematic training can solve

A. all performance problems   B. systematic problems

C. motivation related problems   D. only Knowledge and skills related problems

7. Systematic training can be considered as

A. immediate intervention   B. short term intervention

C. long term intervention   D. medium term intervention

8. Who delivers systematic training?

A. higher trained instructor   B. best qualified person

C. best performer   D. computer tutorials

9. Need analysis in training starts from

A. deficiency in management   B. measuring performance gap

C. performance measurement   D. measurement of behaviour

10. Performance problems at organizational level can usually be solved by

A. the use of technology   B. systematic training

C. management   D. accountably of teachers

11. Effect of training can be measured by the variable of

A. cost and benefits   **C.** resources used and performance

B. money spent on it   D. net profit of organization

12. Most of the errors occur in any organization

A. due to human elements   B. due to non human elements

C. due to equipments   D. due to management

13. Which is the most important factor to improve performance?

A. effort, time and money   B. accomplishment

C. cost   D. time

14. The best tactic for reducing time and cost of training is to

A. improve the clarity of content   B. improve its effectiveness

C. use computer mediated instruction   D. reduce time of training

15. Training permanently improves

A. teachers' repertories   B. organizational improvement

C. immediate solution of problems   D. learning capability

16. The true value of competence lies in

A. hard working   B. motivation

C. accomplishment   D. knowledge and skills

17. Human capital can also be achieved through

A. worthy performance   B. profit minus expenses

C. success   D. overall growth

18. According to systematic and systemic approach, people are awarded for their

A. Knowledge and skills   B. Work

C. ability   D. Performance

19. If we keep accomplishment constant, we can improve our performance by reducing

A. amount of energy to be spent   B. amount of time to be spent

C. amount of effort to be spent   D. all A, B and C

20. Gilbert's Behavioral Engineering Model does not include

A. Incentives   B. Accountability of teachers/employees

C. Knowledge   D. Motives

21. Donald Kirkpatrick's systematic evaluation of training has

A. four levels

B. six levels

C. three levels

D. no level

22. In program evaluation, which one is right?

A. evaluation is more accurate term

B. measurement is more accurate term

C. measurement is broader term

D. evaluation is broader term

23. Evaluation is a kind of

A. experimental research

B. applied research

C. descriptive research

D. action research

24. Which one is not included in Kirkpatrick's Evaluation?

A. reaction

B. process evaluation

C. learning

D. behavioral Change

25. Integrated effect of all levels of measurement is

A. behavioral change

B. reaction

C. organizational objectives

D. net results

26. Which scale of measurement is the weakest one?

A. ratio scale

B. nominal scale

C. interval scale

D. ordinal scale

27. Which scale of measurement is the most reliable one?

A. Interval scale

B. Ordinal scale

C. Nominal scale

D. Ratio scale

28. What is the most important one in a systematic training program?

A. Teachers qualification

B. Measurement of performance

C. Resources for training   D. Instructors ability

29. Size effect of systematic training is usually considered

A. About .80   B. About .38

C. About .62   D. About .45

30. Gap analysis in a systematic training is on

A. Knowledge gap   B. Skills gap

C. Performance gap   D. Knowledge and skills gap

31. A teacher who has more performance gap

A. will improve at higher rate   B. will improve at lower rate

C. will improve at equal rate   D. will improve without distinction

32. Human performance model promotes

A. apprenticeship training   B. on the job training

C. job support training   D. systematic training

33. Direct measurement uses only

A. ratio scale   B. ordinal scale

C. nominal scale   D. interval scale

34. Different kind of performance can be measured with the help of

A. standardizing scores   B. identifying and measuring variables

C. counting benefits   D. comparing benefits and expenses

35. Performance of teachers can be measured by

A. teachers' education   B. teachers' hard working

C. teachers' motivation   D. the end results

36. In the systematic training, exemplary performer is identified on

A. adhoc basis

B. permanent basis

C. on daily basis

D. temporary basis

37. Exemplary standards should be in the

A. measureable form

B. descriptive form

C. written form

D. tabular form

38. Thomas F. Gilbert's human performance model has

A. seven performance related variables

B. five performance related variables

C. eight performance related variables

D. six performance related variables

39. An exemplary performer addresses the problems of

A. theory understanding

B. practical understanding

C. new understanding

D. both theory and practical

40. Large PIP of teachers indicates that

A. teachers will improve at higher rate

B. teachers will improve at lower rate

C. it has no effect

D. teachers have already higher achievements

41. Human performance improvement study focuses on

A. memorizing of facts

B. understanding the main ideas

C. getting good marks in exams

D. addressing the questions to understand theory

42. Which one is the most effective in human performance?

A. measurement

B. incentives

C. feedback

D. hard working

43. As per human performance technology, first priority is given to

A. lower education commission

B. higher education commission

C. none   D. both have equal priority

44. Which one is not a human capital?

A. knowledge   B. skills

C. performance   D. health

45. Standardization can be compared to

A. cooking score with IQ score   B. only ratio scale variables

C. none   D. only categorical variables

46. The following disciplines are included in human performance technology

A. behavioral Engineering   B. statistics

C. sociology   D. A, B, C and more

47. Which one promotes natural enquiry?

A. quantitative research   B. performance standards

C. motivation   D. qualitative research

48. Data can be in

A. graphs   B. Pictures

C. text   D. A, B and C

49. System worth is the result of

A. sharing strengths   B. non overlapping weaknesses

C. A and B   D. observing quality standards

50. In a performance based system, a job advertisement is typically

A. A comparison of services and rewards   B. what you have for your teachers

C. what you want from your teachers   D. B and C

ANSWER KEY

Sr #	Answer	Sr #	Answer
1	B	26	B
2	C	27	D
3	B	28	B
4	C	29	C
5	B	30	D
6	D	31	A
7	B	32	D
8	C	33	A
9	B	34	A
10	B	35	D
11	A	36	D
12	A	37	A
13	B	38	D
14	A	39	D
15	A	40	A
16	C	41	B
17	A	42	A
18	D	43	A
19	D	44	C
20	B	45	A
21	A	46	D
22	D	47	D
23	B	48	D
24	B	49	C
25	D	50	D

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance Variable: Information

Steps	Contents
Specific Outcomes	Explain and simplify the material described by Thomas F. Gilbert on the information.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the practical role of information in daily life. Brief overview of the relevance, timeliness and principles of information. He will stimulate participants' previous knowledge by asking short questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the participants' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	The trainer/exemplary performer will write down main word

	"Information", relevancy, timeliness and principles of information on the whiteboard. He will give the example of Highway boards, how they provide relevant and timely information for travelers. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage participants to keep them active. Individual level performance problems will be addressed by all participants collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture clearer. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the participants.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance Variable: Information

Steps	Contents
Specific Outcomes	Understand the basic concept of information.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the practical role of information in daily life. Brief overview of the relevance, timeliness and principles of information. He will stimulate participants' previous knowledge by asking short questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the participants' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	The trainer/exemplary performer will write down main word "Information", relevancy, timeliness and principles of information on the

	whiteboard. He will give the example of Highway boards, how they provide relevant and timely information for travelers. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage participants to keep them active. Individual level performance problems will be addressed by all participants collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture clearer. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the participants.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance Variable: Information

Steps	Contents
Specific Outcomes	Understand the relevancy and timeliness in information.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the practical role of information in daily life. Brief overview of the relevance, timeliness and principles of information. He will stimulate participants' previous knowledge by asking short questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the participants' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	The trainer/exemplary performer will write down main word "Information", relevancy, timeliness and principles of information on the

	whiteboard. He will give the example of Highway boards, how they provide relevant and timely information for travelers. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage participants to keep them active. Individual level performance problems will be addressed by all participants collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture clearer. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the participants.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Performance Variable: Information

Steps	Contents
Specific Outcomes	Understand the principles of information and their sequence.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the practical role of information in daily life. Brief overview of the relevance, timeliness and principles of information. He will stimulate participants' previous knowledge by asking short questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the participants' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	The trainer/exemplary performer will write down main word "Information", relevancy, timeliness and principles of information on the whiteboard. He will give the example of Highway boards, how they

	provide relevant and timely information for travelers. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage participants to keep them active. Individual level performance problems will be addressed by all participants collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture clearer. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the participants.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Information

Steps	Contents
Specific Outcomes	Clear performance expectations to be communicated to teachers.
Material Required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the practical role of information in teachers' life. Brief overview of performance expectations, their role, feedback and performance management system for teachers. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Information", performance expectations, their role, feedback, and performance

	management system for teachers on the whiteboard. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Information

Steps	Contents
Specific Outcomes	The various aspects of Teachers' role and the priorities for doing them.
Material Required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the practical role of information in teachers' life. Brief overview of performance expectations, their role, feedback and performance management system for teachers. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Information", performance expectations, their role, feedback, and performance

	management system for teachers on the whiteboard. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Information

Steps	Contents
Specific Outcomes	Clear and relevant performance aid to support the teachers.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the practical role of information in teachers' life. Brief overview of performance expectations, their role, feedback and performance management system for teachers. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Information", performance expectations, their role, feedback, and performance

	management system for teachers on the whiteboard. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Information

Steps	Contents
Specific Outcomes	Sufficient, timely and specific feedback loops.
	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the practical role of information in teachers' life. Brief overview of performance expectations, their role, feedback and performance management system for teachers. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Information", performance expectations, their role, feedback, and performance

	management system for teachers on the whiteboard. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Information

Steps	Contents
Specific Outcomes	Performance management system to assist teachers.
	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	...iner/exemplary performer will explain the practical role of information in teachers' life. Brief overview of performance expectations, their role, feedback and performance management system for teachers. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	...iner/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	...starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	...trainer/exemplary performer will write main word "Information", performance expectations, their role, feedback, and performance management system for teachers on the whiteboard. He will discuss with participant the operational knowledge of information and reinforce it

	with examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	ainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	ainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Resources

Steps	Contents
Specific Outcomes	Materials needed to do a teacher's job.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of resources in the teacher's life. Brief overview of materials needed, processes and procedures to enhance performance, and conducive to the environment for teacher's performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Resources", materials needed, processes and procedures to enhance performance, and

	conducive to the environment for teacher's performance. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Resources

Steps	Contents
Specific Outcomes	Equipment to do a teacher's job.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of resources in the teacher's life. Brief overview of materials needed, processes and procedures to enhance performance, and conducive to the environment for teacher's performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Resources", materials needed, processes and procedures to enhance performance, and conducive to the environment for teacher's performance. He will discuss

	with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Resources

Steps	Contents
Specific Outcomes	Process and procedures to enhance a teacher's performance.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of resources in the teacher's life. Brief overview of materials needed, processes and procedures to enhance performance, and conducive to the environment for teacher's performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Resources", materials needed, processes and procedures to enhance performance, and

	conducive to the environment for teacher's performance. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Resources

Steps	Contents
Specific Outcomes	Organized, clean, safe and conducive environment for a teacher's job.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of resources in the teacher's life. Brief overview of materials needed, processes and procedures to enhance performance, and conducive to the environment for teacher's performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Resources", materials needed, processes and procedures to enhance performance, and conducive to the environment for teacher's performance. He will discuss

	with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Resources

Steps	Contents
Specific Outcomes	Performance management system.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of resources in the teacher's life. Brief overview of materials needed, processes and procedures to enhance performance, and conducive to the environment for teacher's performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Resources", materials needed, processes and procedures to enhance performance, and conducive to the environment for teacher's performance. He will discuss

	with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Incentives

Steps	Contents
Specific Outcomes	Sufficient financial incentives to encourage performance.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of incentives in the teacher's life. Brief overview of financial incentives, non-financial incentives, measurement and reporting system, opportunities for career development. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Incentives", financial incentives, non-financial incentives, measurement and reporting

	system, opportunities for career development. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Incentives

Steps	Contents
Specific Outcomes	Non-financial incentives encourage performance.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of incentives in the teacher's life. Brief overview of financial incentives, non-financial incentives, measurement and reporting system, opportunities for career development. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Incentives", financial incentives, non-financial incentives, measurement and reporting

	system, opportunities for career development. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Incentives

Steps	Contents
Specific Outcomes	Measurement and reporting system to track activities and results.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of incentives in the teacher's life. Brief overview of financial incentives, non-financial incentives, measurement and reporting system, opportunities for career development. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Incentives", financial incentives, non-financial incentives, measurement and reporting

	system, opportunities for career development. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Incentives

Steps	Contents
Specific Outcomes	Job for fulfillment of higher level needs.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of incentives in the teacher's life. Brief overview of financial incentives, non-financial incentives, measurement and reporting system, opportunities for career development. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Incentives", financial incentives, non-financial incentives, measurement and reporting

	system, opportunities for career development. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Incentives

Steps	Contents
Specific Outcomes	Opportunities for career development.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of incentives in the teacher's life. Brief overview of financial incentives, non-financial incentives, measurement and reporting system, opportunities for career development. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Incentives", financial incentives, non-financial incentives, measurement and reporting

	system, opportunities for career development. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Motives

Steps	Contents
Specific Outcomes	Motives of teachers and their alignment with the incentives.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
	The trainer/exemplary performer will explain the role of Motives in the teacher's life. Brief overview of Incentive alignment, desire to do work, and rewards to improve performance, and consequences for good performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Motives",

	alignment of incentives, desire to do work, rewards and performance. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Motives

Steps	Contents
Specific Outcomes	Non-financial incentives encourage performance.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
	The trainer/exemplary performer will explain the role of Motives in the teacher's life. Brief overview of Incentive alignment, desire to do work, and rewards to improve performance, and consequences for good performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Motives",

	alignment of incentives, desire to do work, rewards and performance. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Motives

Steps	Contents
Specific Outcomes	Desire to do the job to the best of their abilities.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
	The trainer/exemplary performer will explain the role of Motives in the teacher's life. Brief overview of Incentive alignment, desire to do work, and rewards to improve performance, and consequences for good performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Motives",

	alignment of incentives, desire to do work, rewards and performance. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Motives

Steps	Contents
Specific Outcomes	Rewards to enhance the performance of teachers.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
	The trainer/exemplary performer will explain the role of Motives in the teacher's life. Brief overview of Incentive alignment, desire to do work, and rewards to improve performance, and consequences for good performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Motives", alignment of incentives, desire to do work, rewards and performance. He

	will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Motives

Steps	Contents
Specific Outcomes	Positive teachers' work environment
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
	The trainer/exemplary performer will explain the role of Motives in the teacher's life. Brief overview of Incentive alignment, desire to do work, and rewards to improve performance, and consequences for good performance. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Motives", alignment of incentives, desire to do work, rewards and performance. He

	will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Capacity

Steps	Contents
Specific Outcomes	Necessary knowledge and skills to do a teacher's job.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of Capacity in the teacher's life. Brief overview of necessary knowledge and skills, emotional limitations, and matching the teachers to the realities of the work. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Capacity", of

	necessary knowledge and skills, emotional limitations, and matching the teachers to the realities of the work. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Capacity

Steps	Contents
Specific Outcomes	Ability to learn what is expected for teachers to be successful.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of Capacity in the teacher's life. Brief overview of necessary knowledge and skills, emotional limitations, and matching the teachers to the realities of the work. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Capacity", of

	necessary knowledge and skills, emotional limitations, and matching the teachers to the realities of the work. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Capacity

Steps	Contents
Specific Outcomes	Emotional limitations that impede teacher's performance.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of Capacity in the teacher's life. Brief overview of necessary knowledge and skills, emotional limitations, and matching the teachers to the realities of the work. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Capacity", of

	necessary knowledge and skills, emotional limitations, and matching the teachers to the realities of the work. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Capacity

Steps	Contents
Specific Outcomes	Teacher's behaviour and the realities of the work.
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the role of Capacity in the teacher's life. Brief overview of necessary knowledge and skills, emotional limitations, and matching the teachers to the realities of the work. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Capacity", of

179

	necessary knowledge and skills, emotional limitations, and matching the teachers to the realities of the work. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Knowledge and skills

Steps	Contents
Specific Outcomes	Necessary knowledge and skills to be useful in the classroom.
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the role of knowledge and skills in the teacher's life. Brief overview of necessary knowledge and skills to be a successful in teaching, experience systematic training program to enhance their knowledge. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and

	skills", on the whiteboard. He will discuss with participant necessary knowledge and skills, necessary experience, and understanding the role associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Knowledge and skills

Steps	Contents
Specific Outcomes	Needed experience to be successful in the classroom.
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the role of knowledge and skills in the teacher's life. Brief overview of necessary knowledge and skills to be a successful in teaching, experience systematic training program to enhance their knowledge. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and

	skills", on the whiteboard. He will discuss with participant necessary knowledge and skills, necessary experience, and understanding the role associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Knowledge and skills

Steps	Contents
Specific Outcomes	Systematic training to improve their skills.
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the role of knowledge and skills in the teacher's life. Brief overview of necessary knowledge and skills to be a successful in teaching, experience systematic training program to enhance their knowledge. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and

	skills", on the whiteboard. He will discuss with participant necessary knowledge and skills, necessary experience, and understanding the role associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Knowledge and skills

Steps	Contents
Specific Outcomes	Teacher role and its impact on school performance.
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the role of knowledge and skills in the teacher's life. Brief overview of necessary knowledge and skills to be a successful in teaching, experience systematic training program to enhance their knowledge. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and

	skills", on the whiteboard. He will discuss with participant necessary knowledge and skills, necessary experience, and understanding the role associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Behaviour

Steps	Contents
Specific Outcomes	Understanding behaviour
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the role of behaviour in the teacher's life. Brief overview of bahaviour that is necessary to be a successful in teaching job. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and skills", on the whiteboard. He will discuss with participant necessary

	knowledge and skills, necessary experience, and understanding the role associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Performance

Steps	Contents
Specific Outcomes	Understanding performance
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the role of performance in the teacher's life. Brief overview of performance that necessary to be a successful in teaching job. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and skills", on the whiteboard. He will discuss with participant necessary

	knowledge and skills, necessary experience, and understanding the role associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Behaviour and performance

Steps	Contents
Specific Outcomes	Understanding the difference between behaviour and performance
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the difference between behaviour and performance in the teacher's life. He will explain that what is mean and what is end. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and skills", on the whiteboard. He will discuss with participant necessary knowledge and skills, necessary experience, and understanding the role

	associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Focus on outcomes

Steps	Contents
Specific Outcomes	Understanding the focus on outcomes
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the importance of focus on outcomes in the teacher's life. He will explain how the clear results are shared with teachers to have focus on outcomes. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and skills", on the whiteboard. He will discuss with participant necessary

	knowledge and skills, necessary experience, and understanding the role associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: work in partnership

Steps	Contents
Specific Outcomes	Understanding the work in partnership
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the work in partnership in the teacher's life. He will describe the benefits associative with work in partnership. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and skills", on the whiteboard. He will discuss with participant necessary knowledge and skills, necessary experience, and understanding the role

	associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Add Value

Steps	Contents
Specific Outcomes	Understanding the Add Value
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the meaning of add value in the teacher's life. He will describe the benefits associative with add value. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and skills", on the whiteboard. He will discuss with participant necessary knowledge and skills, necessary experience, and understanding the role

	associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Take a System View

Steps	Contents
Specific Outcomes	Understanding the meaning and process of "take a system view "
Material required	1. Text Book "Human competence: Engineering worthy 2. performance" 3. Whiteboard 4. Marker 5. Eraser 6. Laptop
Introduction	The trainer/exemplary performer will explain the meaning and understanding of "take a system view" in the teacher's life. He will describe the benefits associative with system view. He will also explain the holistic view of organization. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "knowledge and

	skills", on the whiteboard. He will discuss with participant necessary knowledge and skills, necessary experience, and understanding the role associated with successful job. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance Variable: Instruction

Steps	Contents
Specific Outcomes	Understanding the design of instruction
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the design of instruction in teacher's life. He will describe the characteristics of instruction. He will stimulate participants' previous knowledge by asking short questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate a light discussion about the topic. He will ask small quiz type questions to assess the participants' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	The trainer/exemplary performer will write down main word "Information", relevancy, timeliness and principles of information on the

	whiteboard. He will give the example of Highway boards, how they provide relevant and timely information for travelers. He will discuss with participant the operational knowledge of information and reinforce it with examples. By using lecture and discussion methods he will engage participants to keep them active. Individual level performance problems will be addressed by all participants collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture clearer. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the participants.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Development of Instruction

Steps	Contents
Specific Outcomes	Understanding the process of development of Instruction
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the process of development of instruction. He will explain how the different elements of instruction are created after designing. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Incentives", financial incentives, non-financial incentives, measurement and reporting

	system, opportunities for career development. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

LESSON PLAN (FOR EXPERIMENTAL GROUP)

Date: _____ Time: 60 min

Performance variable: Impelemtation of Instruction

Steps	Contents
Specific Outcomes	Understanding the process of implementation of Instruction
Material required	1. Text Book "Human competence: Engineering worthy performance" 2. Whiteboard 3. Marker 4. Eraser 5. Laptop
Introduction	The trainer/exemplary performer will explain the process of Implementation of instruction. He will explain how to understand the prevailing system before implementation of new instruction. He will stimulate trainees' previous knowledge by asking small questions and motivate them towards his topic.
Previous knowledge	The trainer/exemplary performer will initiate light discussion about the topic. He will ask small quiz type questions to assess the trainees' prior knowledge about this topic.
PIP	Before starting the lecture, the trainer/exemplary performer will put the PIP score sheet before him for ready reference to deal the trainees as per their PIP scores.
Development	Now trainer/exemplary performer will write main word "Incentives", financial incentives, non-financial incentives, measurement and reporting

	system, opportunities for career development. He will discuss with participant the operational knowledge of resources with the help of examples. By using lecture and discussion methods he will engage trainees to keep them active. Individual level performance problems will be addressed by all trainees collectively.
Addressing questions	The trainer/exemplary performer will address the questions both at theory understanding as well as practical implementation levels.
Sum up	The trainer/exemplary performer will sum up all main concepts in a sequence to make the whole picture. During sum up, he will use more precise terminology.
Assessment	A quiz type verbal assessment will be made to know the immediate effect of the lesson on the trainees.

PRACTICE

The trainees will individually do their assigned work and trainer/exemplary performer will be there in the class for their assistance and help in the practice work.

HOME WORK / FOLLOW-UP

The questions, which are learnt in class, will be given to the trainees as homework

The End: The trainer/exemplary performer will say good-by and leave the class.

QUIZ SCORE SHEET

Date: _____

Quiz: _____

Trainee	Base Score	Quiz Score	Improvement Points	Student	Base Score	Quiz	Improvement points

**POSTTEST SCORES FOR The CONTROL GROUP AND EXPERIMENTAL GROUP
AND ESTIMATED PIP**

Sr. No.	Posttest scores(Control group)	PIP(based on control group)	Posttest scores (Experimental group)	Posttest scores (Estimated)
1	48	1.03	52	51.10
2	50	1.08	48	52.39
3	44	0.95	50	48.53
4	42	0.90	50	47.24
5	36	0.77	44	43.38
6	54	1.16	52	54.96
7	44	0.95	48	48.53
8	48	1.03	60	51.10
9	40	0.86	44	45.96
10	44	0.95	54	48.53
11	50	1.08	60	52.39
12	52	1.12	52	53.67
13	36	0.77	42	43.38
14	44	0.95	50	48.53
15	54	1.16	58	54.96
16	46	0.99	42	49.82
17	48	1.03	46	51.10
18	46	0.99	48	49.82
19	50	1.08	48	52.39

20	44	0.95	42	48.53
21	44	0.95	48	48.53
22	36	0.77	46	43.38
23	56	1.21	58	56.25
24	34	0.73	42	42.10
25	56	1.21	58	56.25
26	38	0.82	46	44.67
27	48	1.03	46	51.10
28	52	1.12	54	53.67
29	46	0.99	52	49.82
30	52	1.12	56	53.67

Table of Specification

Human Performance Technology, Systematic Training, Incentive, Instruction and Information	Bloom's Taxonomy Domain
(1) **1. First step in training is** A. planning B. need analysis C. selection of training material D. setting of objectives **(2)** **2. Human performance system has** A. steering elements B. enabling elements C. both steering and enabling elements D. no elements **(3)** **3. Behaviour of human beings is** A. overt B. complex C. simple D. covert **(4)** **13. Which is the most important factor to improve performance?** A. effort, time and money B. accomplishment **C.** cost D. time **(5)** **21. Donald Kirkpatrick's systematic evaluation of training has** A. four levels B. six levels C. three levels D. no level	**Remembering** **20%**

(6)

24. Which one is not included in Kirkpatrick's Evaluation?

A. reaction					B. process evaluation

C. learning					D. behavioral Change

(7)

29. Size effect of systematic training is usually considered

A. About .80				B. About .38

C. About .62				D. About .45

(8)

38. Thomas F. Gilbert's human performance model has

A. seven performance related variables B. five performance related variables

C. eight performance related variables D. six performance related variables

(9)

46. The following disciplines are included in human performance technology

A. behavioral Engineering			B. statistics

C. sociology					D. A, B, C and more

(10)

20. Gilbert's Behavioral Engineering Model does not include

A. Incentives				B. Accountability of teachers/employees

C. Knowledge				D. Motives

(11)

4. We can control human behaviour by

A. systematic thinking			B. performance measurement

C. internal and external feedback		D. motivation

(12)

6. Systematic training can solve

A. all performance problems

B. systematic problems

C. motivation related problems

D. only Knowledge and skills related problems

(13)

7. Systematic training can be considered as

A. immediate intervention

B. short term intervention

C. long term intervention

D. medium term intervention

(14)

8. Who delivers systematic training?

A. higher trained instructor

B. best qualified person

C. best performer

D. computer tutorials

(15)

9. Need analysis in training starts from

A. deficiency in management

B. measuring performance gap

C. performance measurement

D. measurement of behaviour

(16)

16. The true value of competence lies in

A. hard working

B. motivation

C. accomplishment

D. knowledge and skills

(17)

22. In program evaluation, which one is right?

A. evaluation is more accurate term

B. measurement is more accurate term

C. measurement is broader term

D. evaluation is broader term

214

(18)
25. Integrated effect of all levels of measurement is

A. behavioral change   B. reaction

C. organizational objectives   D. net results

(19)
26. Which scale of measurement is the weakest one?

A. ratio scale   B. nominal scale

C. interval scale   D. ordinal scale

(20)
27. Which scale of measurement is the most reliable one?

A. Interval scale   B. Ordinal scale

C. Nominal scale   D. Ratio scale

(21)
31. A teacher who has more performance gap

A. will improve at higher rate   B. will improve at lower rate

C. will improve at equal rate   D. will improve without
                                            distinction

(22)
32. Human performance model promotes

A. apprenticeship training   B. on the job training

C. job support training   D. systematic training

(23)
34. Different kind of performance can be measured with the help of

A. standardizing scores   B. identifying and measuring variables

C. counting benefits   D. comparing benefits and expenses

Understanding

48%

(24)

36. In a systematic training, exemplary performer is identified on

A. adhoc basis   B. permanent basis

C**.** on daily basis   D. temporary basis

(25)

40. Large PIP of teachers indicates that

A. teachers will improve at higher rate   B. teachers will improve at
                    lower rate

C. **i**t has no effect   D. teachers have already
                   higher achievements

(26)

41. Human performance improvement study focuses on

A. memorizing of facts   B. understanding the main
              ideas

C**.** getting good marks in exams D. addressing the questions
               to understand theory

(27)

42. Which one is the most effective in human performance?

A. measurement   B. incentives

C**.** feedback   D. hard working

(28)

44. Which one is not a human capital?

A. knowledge   B. skills

C**.** performance   D. health

(29)

47. Which one promotes natural enquiry?
A. quantitative research   B. performance standards

C**.** motivation   D. qualitative research

216

(30)

50. In a performance based system, a job advertisement is typically

A. A comparison of services and rewards   B. what you have for your
                                            teachers

C. what you want from your teachers   D. B and C

(31)

48. Data can be in

A. graphs   B. Pictures

C. text   D. A, B and C

(32)

19. If we keep accomplishment constant, we can improve our performance by reducing

A. amount of energy to be spent   B. amount of time to be spent

C. amount of effort to be spent   D. all A, B and C

(33)

15. Training permanently improves

A. teachers' repertories   B. organizational
                                          improvement

C. immediate solution of problems   D. learning capability

(34)

18. According to systematic and systemic approach, people are awarded for their

A. Knowledge and skills   B. Work

C. ability   D. Performance

(35)

5. Which one is comparatively easier to measure?

A. human behaviour   B. human performance

C. both behaviour and performance   D. none of the above

(36)

**10. Performance problems at organizational level can usually be solved
  by**

A. the use of technology   B. systematic training

C. management   D. accountably of teachers

(37)

11. Effect of training can be measured by the variable of

A. cost and benefits   **C.** resources used and
                  performance

B. money spent on it   D. net profit of organization

(38)

12. Most of the errors occur in any organization

A. due to human elements   B. due to non human elements

C. due to equipments   D. due to management

(39)

14. The best tactic for reducing time and cost of training is to

A. improve the clarity of content   B. improve its effectiveness

C. use computer mediated instruction   D. reduce time of training

(40)

17. Human capital can also be achieved through

A. worthy performance   B. profit minus expenses

C. success   D. overall growth

(41)

23. Evaluation is a kind of

A. experimental research   B. applied research

C. descriptive research   D. action research

(42) **28. What is the most important one in a systematic training program?** A. Teachers qualification B. Measurement of performance C. Resources for training D. Instructors ability **(43)** **30. Gap analysis in a systematic training is based on** A. Knowledge gap B. Skills gap C. Performance gap D. Knowledge and skills gap **(44)** **33. Direct measurement uses only** A. ratio scale B. ordinal scale C. nominal scale D. interval scale **(45)** **35. Performance of teachers can be measured by** A. teachers' education B. teachers' hard working C. teachers' motivation D. the end results **(46)** **37. Exemplary standards should be in the** A. measureable form B. descriptive form C. written form D. tabular form **(47)** **39. An exemplary performer addresses the problems of** A. theory understanding B. practical understanding C. new understanding D. both theory and practical	**Application** **32%**

(48) **43. As per human performance technology, first priority is given to** A. lower education commission B. higher education commission C. none D. both have equal priority **(49)** **45. Standardization can be compared to** A. cooking score with IQ score B. only ratio scale variables C. none D. only categorical variables **(50)** **49. A System worth is the result of** A. sharing strengths B. non overlapping weaknesses C. A and B D. observing quality standards	
Total (Remembering + Understanding + Applying)	**100%**

LIST OF SUBJECT EXPERTS

Dr. Safdar Rehman Ghazi, Director I.E.R., <u>University of Science and Technology Bannu</u>

Pakistan.

Dr. Rehmat Ullah, Assistant Professor I.E.R., <u>University of Science and Technology Bannu</u>

Pakistan.

Dr. Gulap Shehzada, Assistant Professor I.E.R., <u>University of Science and Technology</u>

<u>Bannu</u> Pakistan.