RELATIONSHIP BETWEEN REFLECTIVE PRACTICES OF TEACHER EDUCATORS AND CREATIVITY OF PROSPECTIVE TEACHERS

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FORWARDING SHEET

This thesis entitled as **"Relationship between Reflective Practices of Teacher Educators and Creativity of Prospective Teachers"** submitted by Shah Faisal in partial fulfillment of MS degree in Education has been completed under our guidance and supervision. We are satisfied with the quality of student's research work and allow him to submit this thesis for further process, as per IIUI rules and regulations.

Dated: ____/___/2012

Dr. Syed Asad Abbas Rizvi

Supervisor

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Dedicated

With

Love and affection

To

My Respected Teachers

Relationship Between Reflective Practices of Teacher Educators and Creativity of Prospective Teachers

By

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Accepted by the Department of Education, Faculty of Social Sciences, International Islamic University, Islamabad, in partial fulfillment of the requirements for the MS in Education.

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ABSTRACT

Reflective practice is an effective instructional strategy for effective learning and prepares learners to undertake their responsibilities of practical life in future. The new generation can be properly educated by such individuals that are trained properly and equipped with all the skills that are required for the upbringing of the new generation. Therefore, the teacher education programmes must be designed with the objective to produce critical and creative human resource for the education of individuals-to-be-educated. Reflective practice of teacher educators can make the difference and can produce the desired lot of teachers for the society.

The study was intended to draw attention to the reflective practice in teacher education programmes and to discuss its role in the development of creativity in prospective teachers. The objectives framed for the study were (1) to identify the forms of reflective practices practiced by teacher educators; (2) to identify the frequency of reflective practice of teacher educators; (3) to determine the creativity level of the prospective teachers; and (4) to find out the relationship of reflective practices of teacher educators with creativity of prospective teachers.

The study is a survey by design and correlational by purpose. Two questionnaires were used for the purpose of data collection. One questionnaire was tailor made and the other was a custom made questionnaire. Each questionnaire consisted of 25 items and was scored for quantifying the two variables (i.e. reflective practice of teacher educators and creativity of the prospective teachers). The population of the study consisted of all the B.Ed. students in the six public sector universities of Khyber Pakhtunkhwa Province of Pakistan out of which a sample of 220 B.Ed. students was taken through proportionate random sampling technique for the collection of data.

The findings of the study reveal that teacher educators carry out various forms of reflective practices during their instruction with a variation in their frequencies. The study also shows a strong, positive and significant relationship between the reflective practices of teacher educators and creativity of prospective teachers.

The teacher educators realized the importance of reflective practices for the professional development and productivity of the prospective teachers. They used various forms of reflective practices during their instruction. As a result, the prospective teachers became more creative in the discharge of their professional duties.

The teacher educators, therefore, might concentrate more and more on new and innovative forms of reflective practices enabling the prospective teachers to discharge their duties in future efficiently and effectively. The teacher educators should be encouraged to use more and more reflective practices. The teacher education programmes should be designed in such a way that the teacher educator compulsorily rely on various reflective practices. There should be reflective practice journals in every institution of teacher education.

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Shah Faisal

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

B.Ed.	Bachelor of Education
RP	Reflective Practice
CQ	Creativity Quotient
ERA	Experience, Reflection, Action
FEU	Further Education-Curriculum Review and Development Unit
DATA	Describe, Analyze, Theorize and Act
MSR	Model of Structured Reflection
CIA	Critical Incident Analysis
MM	Mind Mapping
CM	Concept Mapping
4P	Process, Product, Person and Place
6P	Process, Product, Person, Place, Persuasion and Potential

CHAPTER 1

INTRODUCTION

Human beings are generally more anxious about their future and so most of the times engage in deliberating and planning for it. Whatever they are doing today is basically aimed at for the betterment of their tomorrow. This very nature of human beings resulted in the establishment of formal education systems across the globe, which simultaneously demanded full time and trained teachers to run them. Earlier, the education of children had paid little heed and the parents themselves mostly undertook the responsibilities of child education; however, to a little extent, tutors were also arranged for the purpose (Distefano et al, 2004).

The dire need of the society in this connection led to the development and advancement of proper and formal teacher education programmes that have been in vogue since the beginning of the Eighteenth Century (Bansal, 2009), to provide well-equipped and well-trained individuals to the system for the upbringing of the new generation of the

society. That is why teacher and teaching training always play a vital role in the development of a country.

Over the time, teacher and teaching have greatly changed assuming great significance for variety of reasons as previously teaching was considered as solely the transferring of information; however, with the advent of computer and World Wide Web system, information has over flown everywhere. The role of teacher is to bring behavioural change caused by the available information to address various problems of life (Mohanty, 2003); however, many people today disfavour teacher education with the argument that mastery of subject matter makes a good teacher; though the notion can easily be discarded for the reason that teaching is a complex and intricate process that requires specific skills, specialized knowledge as well as working techniques and methods effective enough to change the behaviour of the learners in a desirable way (ibid).

Teaching is not as simple and easy job as considered generally; a teacher has to be able to "explain and expand, expose and expound, illustrate and interpret themes and knowledge with the help of his own experiences" (Singh & Nath, 2005, p.3) in order to put the theory into practices empowering their learners to face the realities of life with courage and optimism.

Teacher education is aimed at to improve learning of the learners in the schools and develop in them the ability to cope with daily life problems. This can be achieved by adopting effective approach from the spectrum of different approaches to the teaching practices, for example, instructional approach, pragmatic approach and exploratory

approach. Therefore, Wideen et al (2002) contends that professional development has to be made in three different perspectives; firstly, the knowledge transfer and skill development; secondly, the reflective practices; and thirdly, the soico-political-cultural change.

Teachers' creativity and productivity has direct bearing on learners' creativity and productivity. Teachers' productivity and creativity must be developed through different means like reflective practices during their training period. These practices engage participants of the teaching-learning process in a "cycle of thought and action based on professional experience" (Wellington, 1991, p. 4).

Reflective teaching practices enable individuals to learn through their wide-ranging experiences throughout the life in general and in the profession in particular in order to improve themselves. According to Osterman & Kottkamp (1993, p.19):

> Reflective practice is viewed as a means by which practitioners can develop a greater level of self-awareness about the nature and impact of their performance, an awareness that creates opportunities for professional growth and development.

Creativity is viewed in two perspectives; as historical new or something new in personal sense. In historical creativity the work is relatively rare whereas in personal creativity, the individual irrespective of the others' view and response to it considers the work new. Csikszentmihalyi (1996) has defined creativity in terms of rare individuals who have been judged by others, to have significantly creative, often domain-changing contributions, whereas Craft, (2001) has focused on creativity in a general population, with respect to education.

The empowerment of individuals to survive the novel and challenging situations of life can be achieved, if the teachers are capable enough to do so. Whatever has been done so far or has been planning to be done, the main focus is the effective learning of the individuals at the receiving end in the instructional programme (Woolfolk, 2004). The behaviour of teachers, their instructional methodology, their vision of educating new generation, their approach to teaching profession, their awareness of the instructional situation as well as knowledge of the individual differences of the learners mostly determine the effectiveness of the process of education (Pollard, 2005).

The purpose can be served if the teacher education programmes focus on such techniques, approaches, and methods that train the prospective teachers and even the in-service teachers accordingly. The practice of teacher educators persuades the prospective teachers while they are teaching in schools. They do practice what they have received during their training programmes (Richards & Farrell, 2005).

Reflective practice is one such innovative approach to the art and science of instruction that has been in vogue since the mid of second half of the previous century in various applied fields. Individuals in the field of teaching acknowledged its effectiveness and hence adopted it at every level. The study identifies the reflective practices of teacher educators and their frequency. It also finds out the relationship between the reflective practices of teacher educators and the creativity of prospective teachers.

There are a number of studies (Phan, 2008, 2009; Palmer et al, 2008; Ferede, & Gorfu, 2008; Ross, 2011; Donnelly, 2007) that highlight the effects of reflective teaching

practices on the academic performance and teaching-learning process; however little has been done so far to probe into the linkage between reflective teaching practices and the creative thinking and creativity.

1.1 Statement of the Problem

Teaching is a complex phenomenon which deals with the management of diverse situations and people with individual differences. So the development of creativity in the prospective teachers enables them to manipulate the situation in future and address adequately the diversified nature of human beings as learners at the school in the days to come. Reflective practice in teaching is an important aspect of instructional process and can be helpful in the development of creativity. So the problem to investigate was, to find out the relationship between reflective practices of teacher educators and creativity of prospective teachers.

1.2 Objectives of the Study

The objectives of the study were to:

- identify the forms of reflective practices practiced by teacher educators.
- identify the frequency of reflective practices practiced by teacher educators.
- determine the creativity level of the prospective teachers.
- find out the relationship between the reflective practices of teacher educators and creativity of prospective teachers.

1.3 Research Questions

The following research questions were addressed in the study:

1. What are the forms of reflective practices that teacher educators practiced during their instruction?
2. What is the frequency of the forms of reflective practices that are practiced by the teacher educators?
3. What is the level of creativity of the prospective teachers?
4. What is the relationship between the reflective practices of teacher educators and creativity of the prospective teachers?

1.4 Significance of the study

The study would be significant for almost all quarters of teacher education programme. The significance of the study could be considered in the following respects:

- The study would be significant for the teacher educators in connection with their knowledge of various practices in reflective teaching and would provide them an opportunity to compare their practices with the known and identified practices in reflective teaching. It would also provide them the chance to improve their reflective practices in teaching.

- The study would be significant for the prospective teachers who would have an insight into the reflective practices, which are highly indispensible for their

professional development. The study would also provide an encouragement to the prospective teachers to utilize the known and newly self-created reflective teaching practices.

- The study would be beneficial for the institutions of teacher education who undertake in-service teacher training programmes to incorporate the effective practices in reflective teaching for the professional development of individuals who are discharging their duties as teachers at various levels.

- The study would be significant for the curriculum planners and developers for the teacher education programmes to provide room for the reflective teaching practices as these required a good amount of time to undertake.

1.5 Delimitation of the Study

The study was delimited to Public sector universities in Khyber Pakhtunkhwa province.

1.6 Research Methodology

Research method adopted in the study is briefly discussed below.

1.6.1 Type of the Study

The study was a survey by design and correlational by purpose. It highlighted the reflective practices of teacher educators and determined the creativity quotient of the prospective

teachers. It determined the relationship between the reflective practices of teacher educators and creativity of prospective teachers.

1.6.2 Research Instruments

Two questionnaires were used for the purpose of data collection.

1. A tailor-made questionnaire was used for identifying the forms of reflective practices (RP) practiced by teacher educators and their frequencies.
2. A custom-made questionnaire was used for calculating the creativity quotient (CQ) of the prospective teachers. The questionnaire was a quiz adopted from www.quizmoz.com/quizzes/personality-Test/c/Creativity-Quotint-Test.asp. The publisher encourages using the quiz as the site states, "Go ahead and find out what you know about yourself and the world around you" (www.quizmoz.com/quizzes/personality-Test/c/Creativity-Quotint-Test.asp, para 1).

1.6.3 Population of the Study

Population of the study comprised of the prospective teachers enrolled in Bachelor of Education (B. Ed.) programme in session 2010-11in the Departments/Institutes of Education in universities of Khyber Pakhtunkhwa Province of Pakistan. The total population of the study consisted of 512 prospective teachers in six universities of the Province. The list of universities and the students, enrolled there in Bachelor of Education programme, is given in Table 1.1.

Table 1.1

Target Universities & number of their enrolled B.Ed. students

No.	Universities	No. of B.Ed. Students
1	University of Peshawar	253
2	Gomal University, D.I. Khan	127
3	Hazara University Mansehra	68
4	University of Malakand, Chakdara	24
5	University of Science & Technology,	15
6	Abdul Wali Khan University, Mardan	25

1.6.4 Sample of the Study

The proportionate random sampling technique was used for the selection of sample size. The total sample size consisted of 220 (43%) prospective teachers of different universities of Khyber Pakhtunkhwa Province of Pakistan.

1.6.5 Scoring of the Research Instruments

The instruments were scored by assigning each option a particular score ranging from 0-4 for identifying the relationship between the two variables.

1.6.6 Validity and Reliability of the Instruments

The instruments were tried out before their administration for data collection and were modified on the basis of feedback (see Appendix – C). Cronbach's α (alpha) was used for measuring internal consistency. The value of α for the tailor-made questionnaire identifying the types and frequency of the teacher educators was 0.82 whereas the value of α for the

custom made questionnaire, measuring the Creativity Quotient, was 0.87. The face validity of the research instruments was established on the basis of the pilot study and in consultation with teachers of the Department of Education, International Islamic University, Islamabad.

1.6.7 Data Collection

The data was collected through personal administration of questionnaires by the researcher in approachable areas, whereas postal correspondence used for the collection of data from the distant areas of the province for variety of reasons such as security situation of the area, time and resources, etc.

1.6.8 Data Analysis

The univariate data was analyzed by using percentages whereas bivariate data was analyzed by using Pearson Product-Moment Correlation Method.

1.7 Operational Definitions of the Terms

The main terms used in the study are defined below:

1.7.1 Relationship

The concept of "relationship" meant the association of both variables of the study (i.e. reflective practices of teacher educators and creativity of prospective teachers).

1.7.2 Strong Relationship

Strong relationship means the relationship, which has correlation coefficient "r" above 0.60.

1.7.3 Weak Relationship

Weak relationship means the relationship, which has correlation coefficient "r" below 0.40.

1.7.4 Reflective Practices

Reflective practices mean the activities that reflect practical and concrete experiences, during the instruction, in the classroom environment, for the understanding of theoretical and abstract concepts.

1.7.5 Creativity

Creativity is the attitude or habit of the prospective teachers, of doing things in different and innovative way.

1.7.6 Teacher Educators

Teacher educators are the individuals at the university level, who have owed the responsibility to teach and train the future teachers in their Bachelor of Education Programme.

1.7.7 Prospective Teachers

Prospective teachers are those individuals who are studying education as a discipline at the bachelor level in a university, in order to pursue their career as teachers in future.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

The notion of reflective practice is not new (Boud et al, 1985) and has a deep rooted connection with constructivism, which offers "an alternative epistemological base to the objectivist tradition" and maintains that "there is a real world that we experience" (Duffy & Jonassen, 1992, p. 3), which provides us the source materials for making decision in the novel situation, however, the interpretations of the experience are subjective and "always under construction" in the light of experience (Brown et al, 1989, p.33).

Since ancient times the philosophers were convinced that truth of knowledge cannot be established in isolation and associated with the reality that can be approached through another form of knowledge (von-Glasersfeld, 1995), which is the past experience and hence required activity mind of the practitioner as the process of knowledge sharing "is not an affair of 'telling' and being told, but an active and constructive process" (Dewey, 1916, p.46).

The work of John Dewey (1933) brought reflective practices into light, when he attempted to draw a line of distinction between routine actions and reflective actions. To him, routine actions are mainly boring and backed by authority, customs and traditions. In every educational institution, there is a collective code of conduct, which explains each and everything about the routine business of the school and in such a situation the teachers have no other option but to follow others (Zeichner & Liston, 1996). Whereas, reflective actions are active, persistent, and thoughtful that ensures highly flexible as well as rigorous analysis, which prompts for self-assessment and development (Dewey, 1933). It is a holistic approach to address the problems using "reason and emotion" (Zeichner & Liston, 1996, pp. 10)

Reflective actions provide the individuals a way out in dilemmas the same way Dewey (1933) narrated, as cited in Ferraro (2000, para2) that:

> A man traveling in an unfamiliar region comes to a branching of the roads. Having no sure knowledge to fall back on, he is brought to a standstill of hesitation and suspense. Which road is right? And how shall perplexity be resolved? There are but two alternatives: he must either blindly and arbitrarily take his course, trusting to luck for the outcome, or he must discover grounds for the conclusion that a given road is right.

Many times a teacher finds himself in such a situation, as described by Dewey in the above narration, while teaching to a class. The only alternative that he has to adopt in such a situation is, his ability of reflection on the situation from the past, since we realize and utilize the consequences of our previous acts (Dewey, 1938).

Experience provides individuals the source materials to illuminate the situation and construct upon the solution for the new dilemma through reflection.

2.1 Reflection

Reflection is a "state of mind, an ongoing constituent of practice, not a technique, or curriculum element" (Bolton, (2010, p.3) that helps in solving the problems in a situation through the attentive and deliberate thoughts about the situation. It is the ability to learn from the past experiences (Spalding, 1998) by in depth understanding of the situation or problem through purposeful, creative and logical thinking (Fish & Twinn, 1997).

It is an assessment process of the past happenings in connection to consider, analyze, explain and inform about the practice taking place (Reid, 1993), establishing a relationship between the past concrete situations with the present abstract one for the clear picture and understanding and "to help us make decisions or resolve uncertainty" (Jasper, 2003, p. 5) through becoming "more self-conscious in terms of the actions we take towards realizing our values or vision" (Johns, 2005, p.8)

Reflection is an active (Conway, 1996) and educative process (Bolton, 2010), which "opens the door of perception to reveal experience" (Johns, 2005, p.9) and provides awareness for the views of others instigating an insight about an unnoticed happening at the time that provide a critical account of the situation from all possible angles addressing "who said and did what, how, when where and why" (Bolton, 2010, p.13). Therefore, reflection is considered by Shukla, (2010) as:

> The process whereby a learner takes time to consider an experience s/he has been involved in or any new learning experience and reflect on how it has been done. It may likewise refer to teachers' consideration of their own work. (p. 187)

It is the modified replication of past experiences for the solution of newly arisen dilemmas through analyzing the situation that necessitates to compare and contrast between past and present in connection to make a right decision among the available choices are options for the solution of problematic situation. It can be made prior, during or after the activity.

2.2 Types of Reflection

Schön (1983) has classified reflection into two types; 'reflection-in-action' and 'reflection-on-action'.

2.2.1 Reflection-in-Action

Reflection-in-action is the thinking process of practitioners when they find themselves in hard situation during an action or activity (Greenwood, 1993). Donal A. Schön, the originator of the concept defines reflection-in-action thus, "where we may reflect in the midst of action without interrupting it. Our thinking serves to reshape what we are doing while we are doing it" (Schön, 1987, p. 26).

It helps the practitioners in progressing towards the end successfully by consciously pondering while the activity is going on. This type of reflection can be exercised by the highly experienced practitioners in the field of activity, who design their activities while they are occurring. Reflection-in-action, as asserts by Jasper (2003, p. 5), is, "the way that people think and theorize about practice while they are doing it. This is often so as an automatic activity that occurs subconsciously in practice at an everyday level" without having prior preparation on the part of practitioner.

2.2.2 Reflection-on-Action

Reflection-on-action is a sort of post operational stage of deliberation of an activity that has already taken place. It is, as Fitzgerald (1994, p.67) maintains, "the retrospective contemplation of practice undertaken in order to uncover the knowledge used in practical situations, by analyzing and interpreting the information recalled" for applying in future situations and activities. It is an analysis and evaluation of the completed activities, events and situations, so much so, to identify the strengths and weakness of them and also to accumulate the information. Schön (1987) views reflection-on-action as:

> Thinking back on what we have done in order to discover how our knowing in action may have contributed to an unexpected outcome. We may do so after the fact, in tranquility or we may pause in the midst of action (stop and think). (p.26)

However, Boyd & Fales (1983, p. 101) look it as, "the process of creating and clarifying the meanings of experiences in terms of self in relation to both self and world. The outcome of this process is changed conceptual perspectives" regarding the experiences as well as the activities.

The central theme of Boyd and Fales' concept is self development; however, reflection in this case not only adds to the body of our knowledge but also challenge our theories regarding the concepts and situation.

Schön's contribution towards the concept of reflection in the form of his classification is widely discussed and appreciated; however, his classification seems incomplete as he has ignored reflection before the action, which can be termed as

"Reflection-for-Action". Sometime the 'Reflection-on-Action' is considered as stuff for the future actions; however, 'Reflection-for-Action' is a reflection that can be made on the onset of the action and activity.

2.3 Mode of Reflection

Willis (1999) has outlined three modes of reflection, which include contextual reflection, dispositional reflection, and experiential reflection.

2.3.1 Contextual Reflection

The daily life activities are not taking place in isolation and have great dependence upon various elements and the surroundings; for instance, time period, place of occurrence, race, class, plans and policies that have influence upon it. The practitioners resort to make reflection by taking into account the contextual elements of the earlier activities that provide great stuff for the purpose as they are "not merely context-sensitive; they are completely context-dependent" (Brown et al, 1989, p.32)

2.3.2 Dispositional Reflection

Reflection involves subjectivity and the personal outlook of individuals greatly affects the actions and activities, for instance, performances, targets, stance, manner, position and personal reactions to purposeful activities. The practitioners take into account these things for understanding the new activities and new situation makes the reflection.

2.3.3 Experiential Reflection

In some situation, the practitioners resort to the actual experiences of life for the solution of problem. The compatibility of the situation with the past occurrence facilitates the practitioner to seek out the challenge confronted.

2.4 Reflective Thinking

Reflective practices require the practitioners to think reflectively. It is an essential part in the practice enabling the practitioners to "recognize the factors that make for bias, prejudice, and self-deception" (Lipman, 2003, p.26) cater for method and procedures as well as the subject matter. It concerns with "an initial state of doubt or perplexity (a problem) and an active search of previous experiences and knowledge for material that will resolve the doubt" (Sternberg, 1982, p.309)

Furthermore, reflective thinking has equal importance for almost all the learners in an educational programme and therefore, should not be restricted to only the "gifted, talented, or high-achieving ones" (Richardson et al, 2009, p.137). It enables all the learners to analyze and reason the facts as it involves "recursive thinking, metacognitive thinking, self-corrective thinking" (Lipman, 2003, p.27) and similar other forms of reflection for the assessment of methods and materials.

Reflective thinking is judgmental anxiety during an inquiry, which leads to master the methods and procedure for the solution of problems (Dewey, 1910) and ensure systematic and protracted inquiry.

Dewey as cited in Hillier (2005) provides that reflective thinking has five general features, which are perplexity, hypothetical anticipation, careful survey of all attainable considerations, consequent elaboration of the tentative hypothesis and taking one stand upon the projected hypothesis as a plan of action.

2.5 Reflective Practice

Reflective practices are productive and fruitful in all the practical and applied fields as "the need for individuals to develop their understanding about the way they conduct their work, and to be skilled practitioners through their work, has been important in informing the profession about aspects of practice" (Loughran, 2002, p.34), therefore, many professionals are resorted to have reflective practices such as nurses, lawyers, teachers, journalists, writers, artists, doctors, policemen, managers, administrators, social worker, ethnographers, etc. (Bolton, 2010; Taylor, 2006; Jasper, 2003; Kember, 2001; Fook, 1999; Greenhalgh and Hurwitz, 1998; Gould and Taylor, 1996; Jarvis, 1995; Boud et al, 1985; & Schön, 1983).

Reflective practice is so broad a concept that various experts have viewed and analyzed it in their own perspective. Reflective practice is, "a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations" (Boud et al, 1985, p. 19).

Reflective practices are concerned with "learning through everyday experiences towards realizing desirable practice" (Johns, 2006, p.3) and that provides "practical and theorized methods for understanding and grasping authority over actions, thoughts, feelings,

beliefs, values and professional identity in professional, cultural and political contexts" (Bolton, 2010, p.6) in a safe and confidential manner. Creek (1997, p. 132) states that reflective practice is, "the process of observation, interpretation, and decision making during intervention".

Reflective practices directly linkup theory with practical situation in classroom for thorough comprehension and understanding. These enable the practitioners to develop their knowledge and skills for their professional performances up to the mark. Personal as well as group experiences prove to be the starting point in the learning process (Jasper, 2003).

These practices deviate the prevailing traditional and routine practices, which are self-explored and self-experienced practices that can better address the problems in hand. These lead the practitioner to dig out his/her mind to find out solution to perplex and intricate situation.

2.6 Reflective Practices in Teaching

Teaching is the profession for which one must prepare himself/herself to adopt, so that the responsibilities might be discharged in a better way. Reflective practices in teaching facilitates the teachers about the instructional process and inspires them for the change (Qing, 2009) focusing on the complexity of thinking, exposing the moral, practical and other dilemmas evaluating the social and educational consequences of particular professional decisions in social, institutional and political contexts (Pollard et al, 2005).

Teaching deals with the theoretical aspects of life and most of the time teachers interact with books and written materials; however, good and effective teachers attempt to "tie their ideas to the passage in the text" (Woolfolk, 2004, p. 39) that give a practical outlook to theoretical aspects of the written works in books. Calderhead, (1989) contends thus:

> Reflective teaching has been justified on grounds ranging from moral responsibility to technical effectiveness, and reflection has been incorporated into teacher education courses as divergent as those employing a behavioural skills approach, in which reflection is viewed as a means to achievement of certain prescribed practices, to those committed to a critical science approach in which reflection is seen as a means toward emancipation and professional autonomy. (p.43)

Schön suggested reflective practice for the beginners in teaching profession so that the beginner teachers compare their practices with those of the experienced professionals in the field. Reflective practice is a thoughtful consideration of individuals' own experiences in the application of theoretical knowledge to practice during their training for the profession (Schön, 1996) as the teachers deal with diversified audience in the classrooms and therefore, must have the ability to "make the most abstract concepts, real and understandable for their particular students" (Woolfolk, 2004, p. 39).

2.7 History of Reflective Practices

The efforts for effective learning prompted the experts in education, philosophy, psychology and professionals in other applied fields to devise innovative and modern methodologies, so

that the learners might be equipped in a manner that better serve the people. In this connection, reflective practices are one major attempt.

Reflective practices have been brought into light by John Dewey in the first half of twentieth century through his different works. His thoughts and their explanation provides for the investigation of the "nature of experience and reflective practice" (Ryan, 2010, p.106). However, his thoughts were highly influenced by the earlier great philosophers of the ancient time such Socrates, Plato and Aristotle etc. It might be astonishing to many that 'were there reflective practices in the time of these great philosophers?' Serious and profound investigations of the literature provide us the answer to such question.

Socrates used to engage students in discussion and dialogue with his disciples and Athenians for establishing the facts and truths. His discussion and dialogue were formulated to an established method with the name as 'Socratic Method'. Today the scholars and experts in different fields of activities frequently resort to 'The Socratic Method' popularized after Socrates' name, which is "not recitation but reasoning and analysis that forces the students to use what he knows (or supposes that he knows) from the assigned judicial opinion" (Areeda, 1996, p.915) and debate with other individuals for opposing viewpoints that are based on questioning and answering exercise for the encouragement of critical and creative thinking.

Plato being the disciple of Socrates followed his master method of discourse, which was highly reflective in nature. Plato used recollection of events for arriving at the truth in the new situation. He also put into operation the Socratic elenchus which provides for the

establishing of truth of a person's statement by posing questions again and again upon him (Robinson, 1953).

Aristotle's method of logical discourse that he called 'syllogism', is a well known deductive reasoning method, which provides to apply knowledge to the specific situation borrowed from the general, "addresses questions about adversarial behavior and intentions" (Moore, 2010, 4). Aristotelian syllogism establishes If-and-Then relationship among the three propositions called as premises (Lukasiewicz (1957), Duerlinger (1968)). An Aristotelian syllogism as cited in (Lukasiewicz, 1957, p.2) is:

If all men are mortal,

And all Greeks are men,

Then all Greeks are mortal.

The example shows that the conclusion is made on the basis of past observation and experience.

John Dewey followed by his contemporaries and successors like Kurt Lewin, Jean Piaget, William James, Carl Jung and Donald Schön and many other pragmatists and constructivists made great contributions toward the concept of reflective practice.

Lewin (1946) was the person who used the term "action research" that popularized through his paper "Action Research and Minority Problems" in 1946. He described action research as "a comparative research on the conditions and effects of various forms of social action and research leading to social action" (Lewin, 1946, p.35) which may not be "in any

respect less scientific or lower than what would be required for pure science in the field of social events" (Lewin, 1946, p.35) that involves deliberation, planning, operation, and finally the results of the action.

Jean Piaget as main proponent of constructivism and experiential learning has great contribution towards the reflective practice in education. Both Dewey and Piaget "recognized learning as dependent upon the integration of experience with reflection" (Conley, 2004, p.481) as Piaget argued that children are not born with the knowledge of reality and having no prior information regarding things, they construct their understanding of things and realities through their own experience (Sigelman & Rider, 2009).

The concepts of 'Assimilation' and 'Accommodation' that has been presented by Jean Piaget provide for reflective practice. Assimilation "occurs when new experiences are readily incorporated into existing schemes" whereas accommodation "occurs when schemes are modified based on experience" (Kail & Cavanaugh, 2010, p. 129). Learning is a product of balanced equilibrium between the two processes assimilation, which is "being the judgment" and accommodation that is "application to experience" (Piaget, 1951, p. 239).

William James, pragmatist and functionalist, is the contemporary of John Dewey. He published his work 'Pragmatism' in 1907, which was based on his lectures at the Lowell Institute and Columbia University (Stuhr, 2010). James applied pragmatic method in the

religion, which he considers "a method of settling metaphysical disputes that otherwise might be interminable... it means the open air and possibilities of nature, as against dogma, artificiality and the pretence of finality in truth" (James, 2008, p.27-29). Thus to James pragmatism is, "a method, as a theory of truth, and as an attitude (Stuhr, 2010, p.2) that can be achieved through experience.

James's pragmatism is a metaphysical experience that resulted from the flow of thoughts and physical action, which called as 'Sciousness' by James in order to differentiate it from the consciousness of which it composes (Cooper, 2002). It provides that James was convinced that "thinking itself constitutes a kind of action and that ideas make a difference" (Kloppenberg, 2010, p. 8), and gives "each word its practical cash-value, set it at work within the stream of experience" (James, 2008, p. 30) that has been attained through course of time.

Carl G. Jung, an associate of Freud, was more interested in the role of conscious in shaping of personality. Jung's theory of personality provides for the ego, personal conscious and collective conscious in human psyche. The collective conscious, which can be called as 'psychic inheritance' is the store of experience and the inborn knowledge. It has a great influence on the human experience indirectly that help out in carrying out the activities in the world (Boeree, 2006). Jung's spent most of his time in "treating patients and teaching" that grew his interest in analytical psychology, which are evident from his writings that has been "extracted from his intimate association with the unconscious functioning of his large and varied array of patients a treasure trove of experience" (Lawson, 2008, p.5-6).

The collective conscious has "contents and modes of behavior that are more or less the same everywhere and in all individuals" (Jung, 1959, p. 4) and hence can be called as universal. That is why different experiences are made across globe without cultural attachment, for instance, the "experiences of deja vu (the feeling that you've been here before), and the immediate recognition of certain symbols and the meanings of certain myths" (Boeree, 2006, para. 20), which are the result of the functioning of collective conscious.

Nelson Goodman has great contribution in the fields of metaphysics, aesthetics, and epistemology. He is a strong proponent of constructivism that he has attempted to promote through his work entitled as 'Ways of Worldmaking' published in 1978. He has influenced Danold Schon's work on reflective practice (Kinsella, 2009).

Goodman holds that there is no single world version (Krausz, 2000) as "we cannot test a version by comparing it with a world undescribed, undepicted, [and] unperceived ... but it always starts from worlds already on hand [and hence] the making is remaking" (Goodman, 1978, p.4-6). This provides that nothing in this world take place in total novelty, but there must be an earlier version of it, though rudimentary and unrefined one. In our daily life we construct new things just to "take things apart or put them together in another way" (Goodman, 1978, p.8), making new experiments and reflecting past experiences.

Donald Schön is the main contributor to the concept of reflective practice. Schon's analysis of the practice has greatly affected staff development and training programmes in various professions, as he considered that the professionals must have knowledge, insight

and judgmental power into the situation, whenever face any problem during and after the activity (Pollard, 2002), in the form of reflection in-action and reflection on-action. The significant advantage of reflective practice is the opportunity to explore solution in the time of complexities and contradictions (Costley et al, 2010).

Schon was more constructivist (Ridder, 2007) and wants practitioners to "make new sense of what is happening in each moment and adjust their individual performances accordingly" (Wilson, 2005, p. 240) through an active, planned and deliberate activity apply. The application of positive knowledge to the solution of problems can better serve the purpose (Lyons, 2010), by laying emphasis on "intuition, implicit knowledge, creativity, and other softer aspects of design" (Ridder, 2007, p.61).

Paulo Freire though has a hard time initially but enjoyed great fame and respect during his life as an educationist as, Roberts (2000, 1) observed that, 'few educational thinkers have been more widely influential than Paulo Freire'. He has been called as 'the Rousseau of the 20th century' (Bhattacharya, 2008, 101), 'the John Dewey of the present era' (Kanpol, 1997, 13), 'a radical hero of adult education' (Coben, 1998, 148), and the most important and influential person in education during the 20th century (Elias, 1994; Darder, 2002).

Freire worked for the education of the poor and disadvantageous illiterates in the context of their social setting which he called the process as critical reflection that led him to believe that learners "achieve a deepening awareness of both the socio-cultural reality which shapes their lives and of their capacity to transform that reality through action upon it"

(Freire, 1970, p.27) enabling them to discharge their social responsibilities, as he considered that "human activity consists of action and reflection" (Freire, 1997, 106) in a society.

The history of reflective practice is very widespread, and therefore, not ended with the descriptions made earlier; a great array of theorists and practitioners in the applied fields continue their contributions towards the development of the practice. Among these theorists and practitioners, Andrew Pollard, Nona Lyons, David Boud, Neil Thompson, Melanie Jasper, Christopher Johns, Christ Bluman, Beverley J. Tayler, Bairbre Redmond, Julie Hay, and Paul Mcintosh are few to mention.

2.8 Principles of Reflective Practices

Reflective practices are deliberate and planned activities and hence demand the practitioners to follow certain principles. John Dewey (1933), Weil, (2004) and Bolton (2010) have drawn these most important principles for reflective practices, which are discussed in the following lines.

2.8.1 Open Mindedness

The first principle of reflective practices is open mindedness of the practitioner. The stereotype working with restrictions and reservations make things distorted and seldom lead towards perfection. Reflective practices deviate from the routine work and hence demands open-mindedness on the part of the practitioners. Open mindedness to Dewey (1933) is:

> An active desire to listen to more sides than one, to give heed to facts from whatever sources they come, to give full attention to alternative possibilities, to recognize the possibility of error even in the beliefs which are dearest to us. (p. 29)

It provides for the struggle to have the best. The open minded practitioners are "continually examining the rationales that underlies what is taken as natural and right, and take pains to seek out conflicting evidence" (Zeichner & Liston, 1996, pp. 10) to perform their level best in the field.

2.8.2 Responsibility

Responsibility, which is trail of open mindedness, is another most important principle of reflective practices. In routine practices, one may held other responsible for the results of the activities; however, in reflective practices the case is different, here the entire responsibility must be owned by the practitioner as the activities are his/her own initiatives and self-directed. Responsibility is "to consider the consequences of a projected step; it means to adopt these consequences when they follow reasonably" (Dewey, 1933, p. 30) for their own values and actions in the socio-political as well as cultural settings of their work (Bolton, 2010).

2.8.3 Generosity

Another most demanding principle of reflective practice is generosity that explains by (Bolton, 2010, pp. 47-48) thus, "willingly give energy, time and commitment to our own personal and professional development" enable the practitioners for mutual exchange of information among the members of the community. The principle of generosity provides the practitioners the opportunity to inspire and get motivation from the people around and share their experiences with them for the betterment of individual capacity.

2.8.4 Courage

Reflective practicing requires courageous practitioners as to subject their own thoughts and experience to others critiques. The courage for reflective practice is to analyze practitioners' thoughts and experience by themselves and through others' perspective and then stand by their convictions and develop their independent thinking (Weil, 2004).

2.8.5 Trust

None of the activities can progress without the participants trust in each other as well as in the activity itself; trust in the process in which the practitioner involves himself/herself. It only happens when the practitioner believes in the productivity of the activities that he/she is going to undertake during their practices (Bolton, 2010).

2.8.6 Self-Respect

Reflective practice is primarily based on the practitioners' personal feelings, emotions and experiences. Self-respect provides for the strength of one's own beliefs and action and reactions to the activities planned for the better comprehension of the learners. It provides opportunity for respect for our own reliability (Bolton, 2010).

2.8.7 Wholeheartedness

One of the basic principles that have drawn by John Dewey (1933) for reflective practice, is wholeheartedness, which means to him "a genuine enthusiasm is an attitude that operates as an intellectual force when a person is absorbed, the subject carries him on" (p. 30) for the achievement of desired goals and objectives.

2.8.8 Positivity

Looking things with a positive approach make them more productive and more effective. It does not mean that only things expressed in positive way yield good result but at the same time "expressing and exploring negative memories, thoughts and feelings can facilitate positive experience; celebrating positive ones can be life enhancing" (Bolton, 2010, pp. 48).

2.8.9 Confidence

Confidence of the reflective practitioners plays an important role, as they have to draw memories from the past and effectively use them in the new situation for the solution of problems. Confidence helping them to "interpret what they saw and to put effective pedagogy into practice" (Chilvers, 2005, 176) during their activities.

Reflective practices ensure confidence, if deal with care and seriousness, as found out by Walsh (2005, p.77) that, "some supervisees felt that attending clinical supervision sessions actually gave them more confidence in practice and helped reduce feelings of isolation" due to sharing the minute details of the activities among the members of the activities. However, it requires, "time to develop, usually through experience and maturity" (Chilvers, 2005, p.176), as well as commitment with the profession.

2.8.10 Cooperation

Reflective practice involves various individuals with their individual differences, in motley activities. The mutual interaction of these individuals "to live, work, and play in human society is to cooperate with others" (West & Markiewicz, 2004, 2) for the attainment of goals. Cooperation demands "collegiality in sharing and authenticating developing ideas" as

well as stresses "the need for recognizing the special contribution of the professional" (Dahlgren et al, 2004, 32) in the process and attainment of the objectives.

2.8.11 Integrity

The reflective practitioners must follow the principle of integrity and comply with the standards that they expect others to comply with. This demands honest and straightforwardness in matters taking place accepting their irrational and illogical reasoning and discarding hypocrisy in thinking (Weil, 2004).

2.9 Characteristics of Reflective Practice

On the basis of Dewey's reflective action, Pollard (2005) summarized the following seven characteristics of reflective practice in teaching:

1. It implies an active concern with aims and consequences as well means and technical efficiency.
2. It is a cyclic process where teachers monitor, evaluate and revise their own practices constantly.
3. It requires competence in methods of evidence based classroom enquiry.
4. It demands open-mindedness, responsibility and wholeheartedness.
5. It is based on teacher judgment and insight.
6. It is based on collaboration and cooperation.
7. It enables teachers to creatively mediate externally developed frameworks for teaching and learning.

Zeichner and Liston (1996) add more five features that are important in reflective practice. Reflective practice enable to:

1. Study, plan and formulate the solution in problematic situation in the classroom;
2. Concentrate upon and challenge the assumptions and principles in teaching;
3. Attend the contextual situation of teaching;
4. Develop curriculum and make efforts for school change; and
5. Develop professionally the practitioners.

2.10 Attributes of Reflective Practitioners

Reflective practice is not an easy task, it rather requires skills on the part of practitioners. Harrison (2008) has enumerated five skills or attributes for practitioners having effective reflective practices. They include observation, communication, judgment, decision-making, and team-working. These skills are equally important for professional development in all applied fields.

2.10.1 Observation

A teacher come across a number of events and activities in his/her daily life as human being and in classrooms as a professional, however, few people seem "to know quite what to look for, or how to learn from the experience" (Walker & Adelman, 1975, 3) to use them in their profession for having better performance and achieving their goals. During teaching, the individuals mainly focus upon the "purpose, procedure and logistics" of the lesson and little heed paid "to observe processes of learning and interaction as they occur through the lesson" (Wajnryb, 1992, 6).

The skills of observation involve the noticing of one's own feelings and thoughts and behaviours as well as attention to the surroundings that can be made through writing, drawing, snapshots or audio and video recording (Harrison, 2008), which provide opportunities to have a better understanding of the profession and improve the skills of observation, analysis and interpretation for the professional development (Wajnryb, 1992).

In instruction process, the observation of critical moments is greatly helpful for the development of reflective practice (Harrison, 2008) as the observer is open to numerous experiences, which can be proved as raw materials for these practices (Wajnryb, 1992).

2.10.2 Communication

Communication is the skill of sharing of one's own observations and experiences with other individuals. It provides for the improvement of the observation and experiences as the others respond to them in either positive or negative manner.

Communication for the sake of reflective practices can be developed through different ways, for instance, through writing personal diaries, keeping personal journals, maintain portfolios, etc. (Harrison, 2008)

2.10.3 Judgment

Judgment is the process of "reaching logical conclusions and making high quality, timely decisions based on the best available information; exhibiting tactical adaptability; giving priority to significant issues" (Sweeney & Bourisaw, 1997, p.3)

The practitioners have the ability to make judgement of the the events and activities during the reflective practice. It is a follow up study of the events and activities taken place

that includes "analysis, discussion and interpretation of the data and experiences acquired in the classroom, and reflection on the whole experiences" (Wajnryb, 1992, 1), however, the analysis must be impartially conducted if the practitioner is himself a part of these events and activities, which is very difficult task to see him activities and other events through the others' eyes (Harrison, 2008)

2.10.4 Decision Making

Judgmental power enable practitioner to make right decision during their activities, however, "it is important to think about how you make sense of your learners and classrooms events" (Harrison, 2008, 32), while making decision. Reasoning is required for decision making (Hughes & Lavery, 2004) and the process of decision making involves "drawing on previous teaching episodes to speculate on the effectiveness of the lesson plan in question" (Harrison, 2008, 33) in the educational setting.

2.10.5 Team-Working

Human beings are always working in groups with diversifying roles, assigned to each member of the group. The notion of team working is therefore, currently enthusiastically applied in all organizational setups for productive results in the challenging situation. As West & Markiewicz (2004) maintains that,

> We express both our collective identity and our individuality in groups and organization. Our common experiences of living and working together bind us with each other and with our predecessors. Today we face new demands that make cooperative work in teams more vital and more challenging. (2)

Team working requires high level of familiarity and understanding among the team members. They know the abilities and capabilities of each other and attempt to learn from each other. This intimacy among the team members further strengthens their mutual relationship and provides greater opportunity for improving team chemistry, which is composed of communication; consensus; and contracting (Pokras, 2002). This is the way that "we have always lived, loved and worked" (West & Markiewicz, 2004, 2) as well as eagerly required by the situation in the today's world.

2.11 Models of Reflective Practices

Reflective practices have been developed and implemented by experts in different ways. They have devised various models for it. Here we will discuss some most important models of reflective practices described in the literature are presented below:

2.11.1 Jasper's ERA Cycle of Reflective Practice

The reflective practice is primarily based on the past experiences of the practitioners "to understand and develop their practice" (Jasper, 2003, 2) as these experiences are the basic

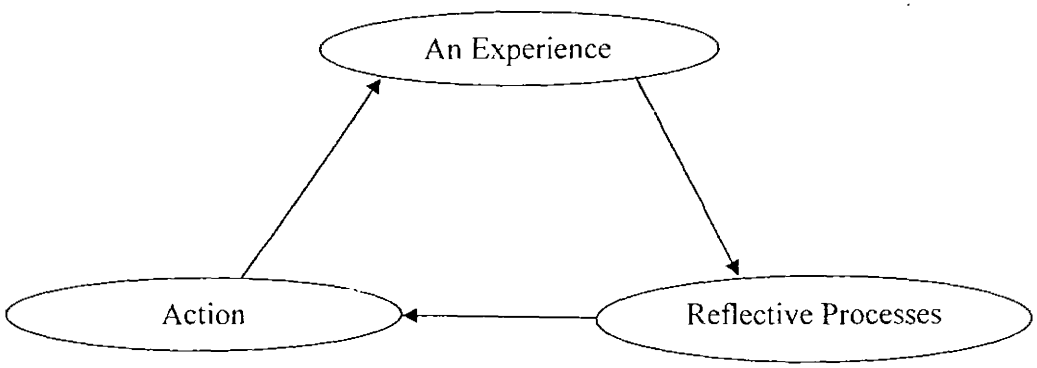

FIG 2.1: The ERA cycle of Reflective Practice

stuff for one's further progress. Jasper (2003) presents the ERA Cycle of Reflective Practice (see figure 1), which consist of three basic components. These are, as cited by Jasper (2003, p.2):

1. Things (experiences) that happen to a person
2. The reflective processes that enable the person to learn from those experiences
3. The action that results from the new perspectives that are taken.

The ERA cycle of reflective process is very simple and easy to understand by the readers as well as the practitioners of reflective practice. The practitioners have a strong pass experience, for thinking and reflection that would be resulted in an effective action for the solution of novel situation.

The process in not once for all, but continues unlimitedly as the first round of the process completes, provides stuff (experience) for the next round and thus "the experience itself has been transformed, making it into a different experience" (Jasper, 2003, p.3) forming a spiral which can be seen in figure 2.2.

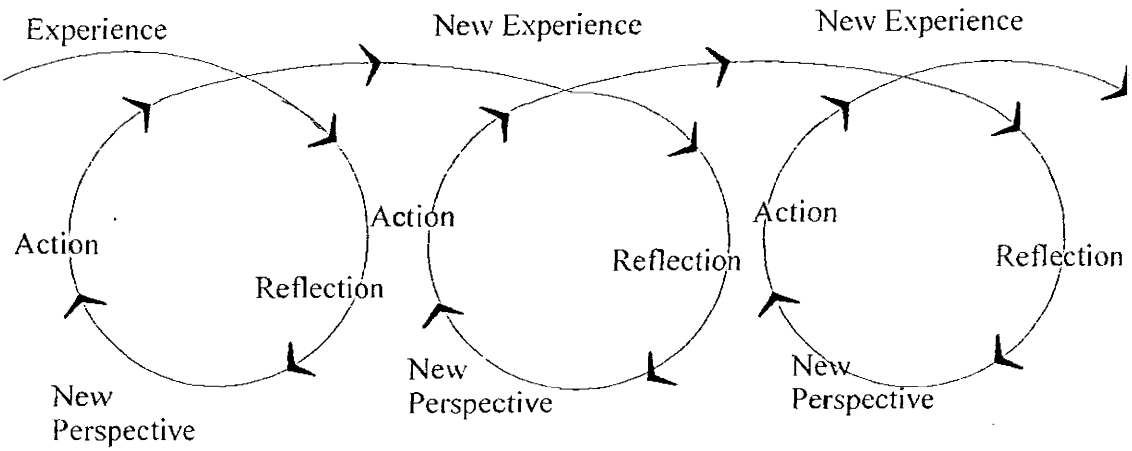

FIG. 2.2: Reflective Spiral

2.11.2 Johns' Model of Structured Reflection

Christopher Johns attempted to make the reflective practices more easy and comprehensible for the practitioners, and put forward a framework for reflective practice in Nursing. His model of Structured Reflection appeared in the early part of the last decade of 20th century as it was "first constructed in 1991" (Johns, 2006, 42), which has gone "through many developments and presentations" (Jasper, 2003, 84) that continued till the last moment of the first decade of 21st century. In 1994, it was presented in a simple cue questions form dividing into five different sections that included description of the experience; reflection; influencing factors; could I have dealt with the situation better?; and learning.

The model of Structured Reflection is not a checklist but the cue questions are meant for suggestion (Ooijen, 2003), which provides a very simple and easy understanding for the new practitioners. It is "a framework for challenging 'unexamined norms' and 'habitual' practice; for 'interpret[ing] the subjective experiences', for 'project[ing] the effects of nursing actions', and for 'becoming a certain sort of person" (Johns, 1995, 227) that can put into operation of his/her own past experience while performing new actions during their professional life.

Johns has thoroughly worked on his model and introduced its different editions, which have been made public through his writings. The reflective cycle that has been given by Johns (1997) is one of the molded and improved forms of the earlier editions of the model of structured reflection. Johns (1997) model of structured reflection, as cited in van-Ooijen (2003, p.17) is:

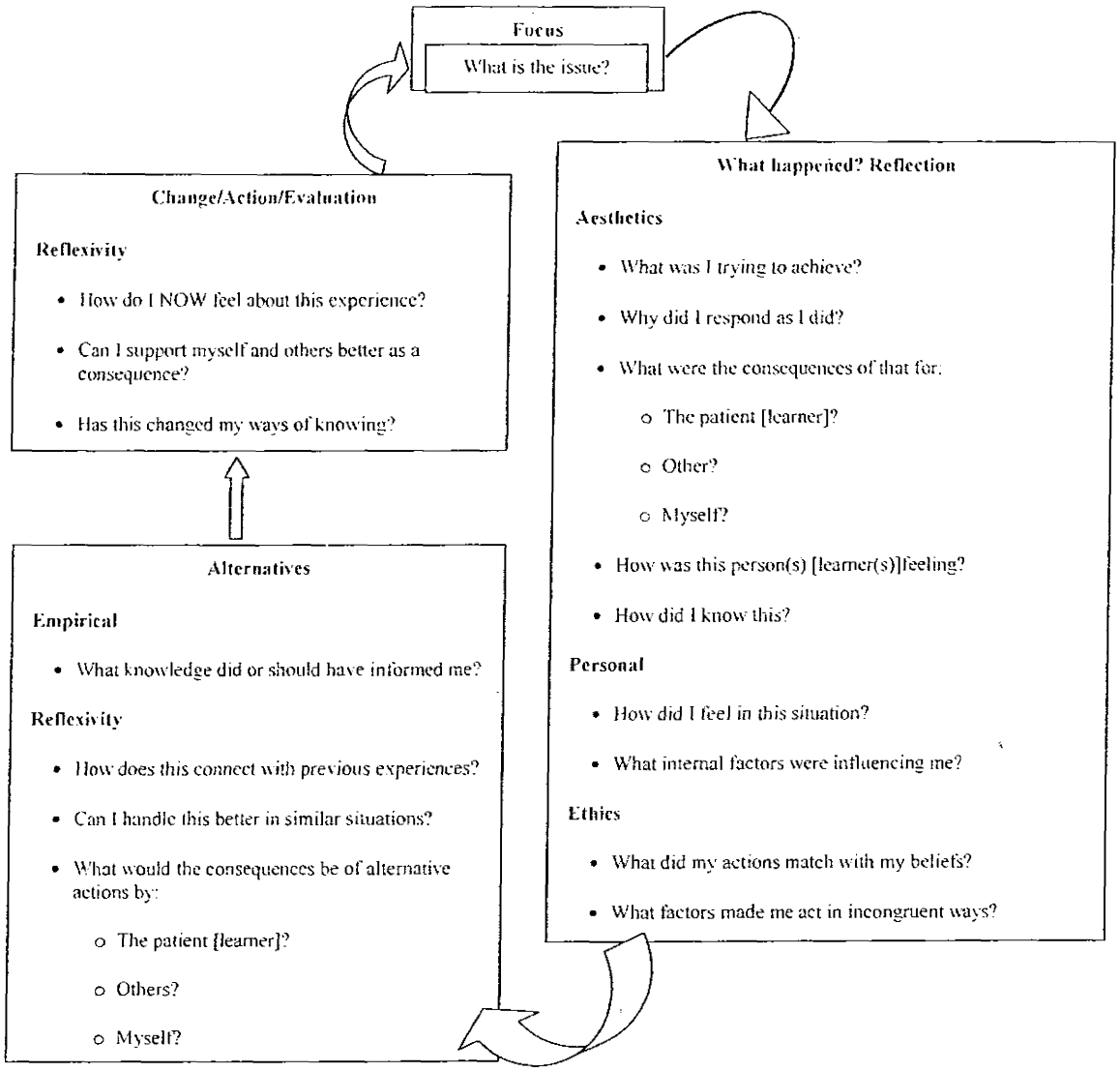

FIG2.3: Johns' Reflective Cycle

Though all the editions of Johns' model of Structured Reflection are effective, however, the Reflective Cycle as shown in figure 2.3 seems more effective model in comparison with the other editions. However, the model requires, "the skill and experience of the supervisor as well as on how able and willing the supervisee is to engage with the reflection" (Ooijen, 2003, p.17) during the clinical supervision, an effective form of reflective practice.

The latest version (15th version) of Johns (2006) model of structured reflection has been framed with little amendments. The latest edition of Johns (2006, p.42) Model is as

Reflective Cue	MSR Map
Being the mind home	
Focus on a description of an experience that seems significant in some way	Aesthetics
What particular issues seem significant to pay attention to	Aesthetics
How were others feeling and why did they feel that way?	Aesthetics*
How was I feeling and why did I feel that way?	Personal
What was I trying to achieve and did I respond effectively?	Aesthetics
What were the consequences of my actions on the patient, others and myself?	Aesthetics
What factors influence the way I was/am feeling, thinking and representing to this situation? (Personal, organizational, professional, cultural)	Personal*
What knowledge did or might have informed me?	Empirics
To what extent did I act for the best and in tune with my values?	Ethics
How does this situation connect with previous experiences?	Personal/Reflexivity*
Given the situation again, how might I respond differently?	Reflexivity*
What would be the consequences of responding in new ways for the patient, others and myself?	Reflexivity*
What factors might constrain me from responding in new ways?*	Personal *
How do I NOW feel about this experience?	Personal*
Am I able to support myself and others better as a consequence?	Reflexivity
What insights have I gained? (framing perspectives)	Reflexivity
Am I more able to realize desirable practice? (being available template)*	
What have I learnt through reflecting?	

* Changed from the previous edition

FIG 2.4: Johns' Model of Structured Reflection (15th Edition)

given in figure 2.4. A model for Structured Reflection map (see figure 2.5) has been configured by Johns (2006, p.49), "guide practitioners to reflect on clinical reasoning and action" (p.49) and to get out the "significance and creative tension" (Johns, 2006, 50).

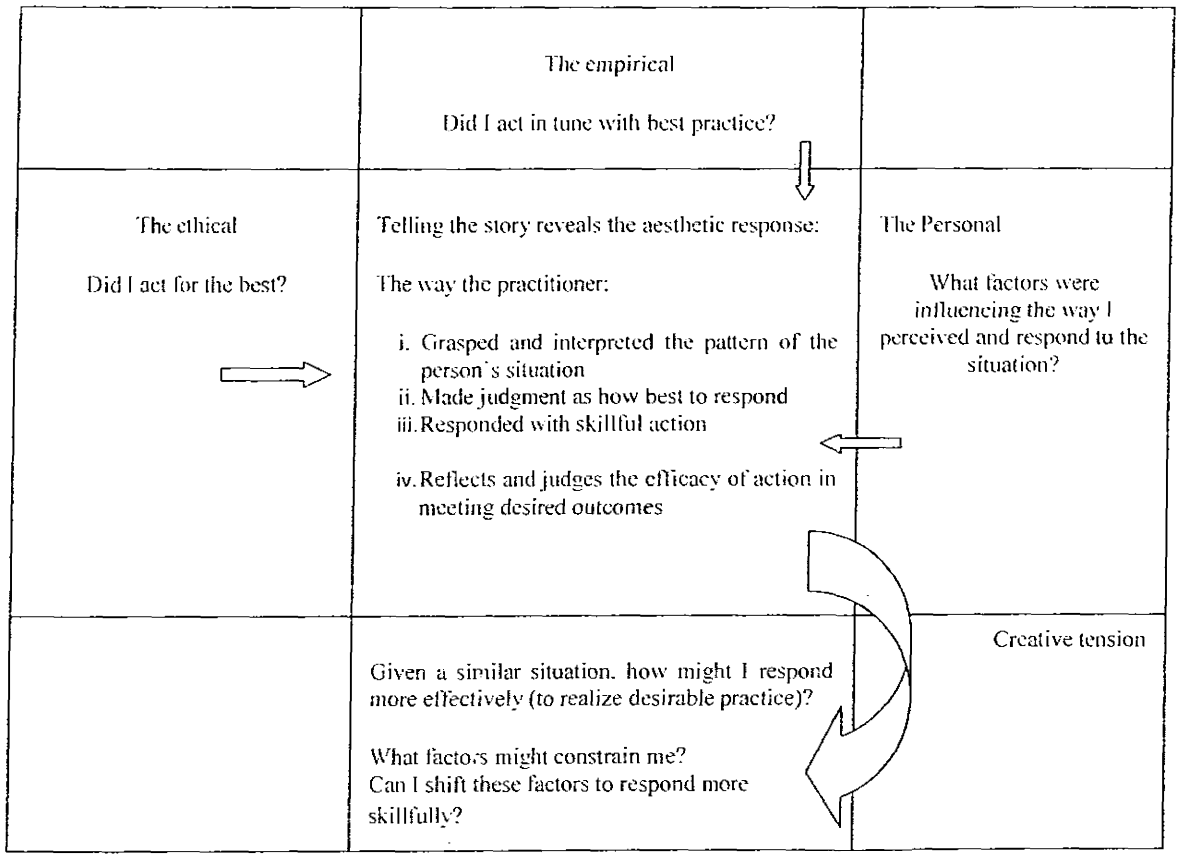

FIG 2.5: Model for Structured Reflection Map

Johns' Model(s) for structured reflection is basically designed for the professional development of Nurses; however, these are equally applicable to the teaching-learning process as well. In both the situations, the practitioners encounter new and challenging situations that require immediate and right solutions.

2.11.3 Driscoll's Reflective Cycle

Johns Driscoll (2000) considered clinical supervision an important procedure for guided reflection, where "the supervisor assists the supervisee" during the procedural activities of supervision ((Lynch et al, 2008, p.111) and hence has presented a reflective cycle, which is

also known as 'What' model. Driscoll's model, as cited in Levett-Jones & Bourgeois, (2011, p.97) and is illustrated in figure 2.6:

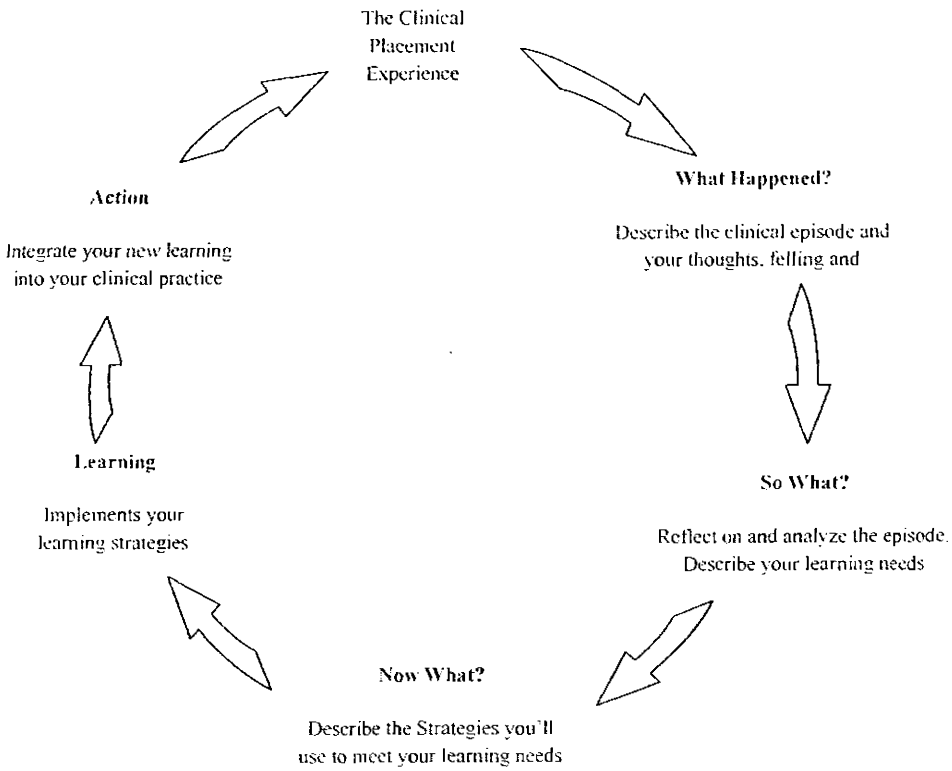

FIG 2.6: Driscoll Reflective Cycle

Driscoll' model consists of the following three components:

1. What? An event or experience from clinical practice is described, after which some elements are selected for further reflection:
2. So what? The event is analyzed and any learning from this made conscious; and
3. Now what? Action is planned and carried out. (Driscoll, 2000, 27)

Driscoll's model provides a simple way to reflect upon the situation and solve the problem and seems that "its apparent simplicity would make it a useful starting point for

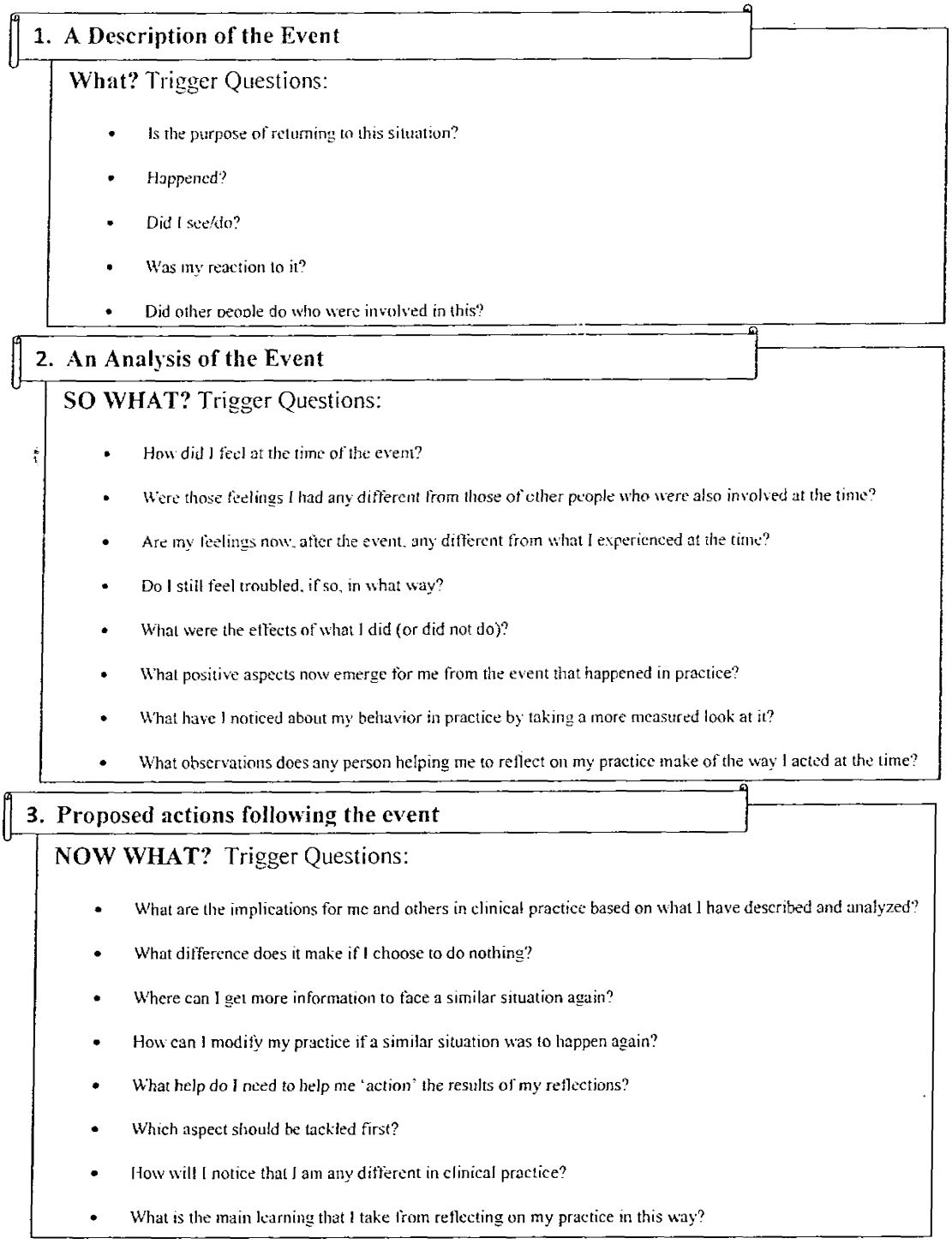

FIG 2.7: The WHAT? Model of Structured Reflection and associated Trigger Questions

those new to reflection or supervision" (van-Ooijen, 2003, 18). Each component of the model is further explained by Driscoll (2000. p.28) with certain trigger questions, as shown in the figure 2.7, can be effective used for the guidance of supervisee through reflective process (Lynch et al, 2008).

The "WHAT" model provides many people, who work in the field, to devise their own model for reflective practice qualifying their needs and requirements (Driscoll, 2000). A model of the same three components (i.e. What? So What? And Now What) has also been presented by Rolfe (2001).

2.11.4 Kolb's Experiential Learning Cycle

Child centered education led to experiential learning, and therefore, considerable attention has been paid to it in the educational literature. Experiential learning is nothing but 'learning by doing', however, it involves the "whole person in the learning process" (Chuaprapaisilp, 1997, p. 248), which is restricted not only to intellectual involvement, but all the other domains of human participation are ensured equally.

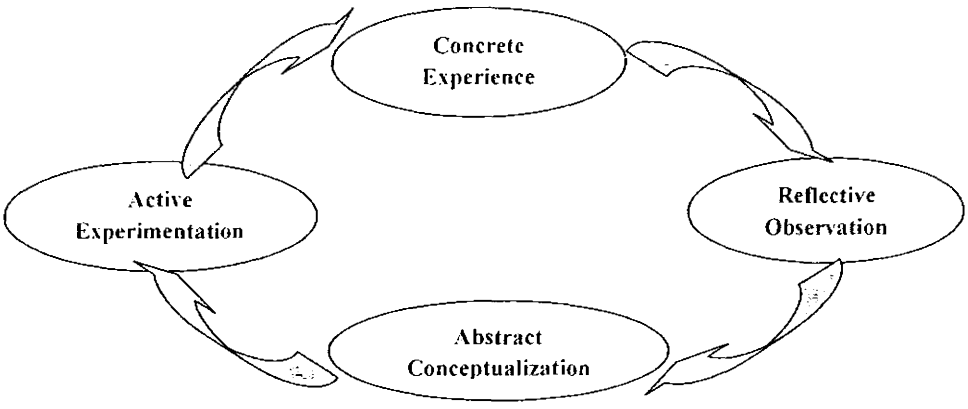

FIG 2.8: Kolb's Experiential Learning Cycle

David Kolb has greatly influenced the notion of experiential learning, by writing a book entitled as, "Experiential Learning: experience as the source of learning and development" in 1984, where he has explained that experiential learning is a "four stage cycle involving four learning modes: concrete experience, reflective observation, abstract conceptualization, and active experimentation" (Kolb, 1984, 40) that provides a model for experiential learning (Davies, 2008), as shown in the figure 2.8.

Kolb's concept of experiential learning is based on constructivism, where knowledge is created from "the combination of grasping experience and transforming it" in the new situation and solving new problems (Kolb, 1984, 41).

The concrete experience is the awareness of actual happening of the events to any or all of the five senses. Reflective observation is the attention and deliberate thinking upon the events and their happening. The abstract conceptualization can be also called as generalization where conclusions are drawn (Davies, 2008), where as the active experimentation provides that whatever the conclusion is drawn in at the third stage may be applied practically in the real situation.

However, Kolb's cycle of experiential learning has been greatly criticized by the experts in the field of experiential learning. Reynolds (1997) and Holman et al (1997) contend that Kolb's cycle has greatly influenced the education system in US and UK; however, it stressed cognitive psychology tradition ignoring people's sociocultural as well as historical aspect of thoughts and actions. Holman et al (1997) have criticized the so-called sequence in the cycle:

> Learning can be considered as a process of argumentation in which thinking, reflecting, experiencing and action are different aspects of the same process. It is practical argumentation with oneself and in collaboration with others that actually forms the basis for learning. (p.145)

The criticism raised on the Kolb's cycle seems biased and irrational, as the terms that he has used in his cycle are not narrowly-pitched, as both Reynolds (1997) and Holman et al (1997) contend. The concrete experience can be based on social as well as cultural foundations. Furthermore, the objection on sequential order is also futile, as the deliberate and purposeful activities are taking place quite in order.

2.11.5 FEU Model

One of the important models of reflection is presented by British Further Education Curriculum Review and Development Unit (FEU), which is known after its name as FEU model of reflective practice, as cited in Boud et al (1985, p.13) and illustrated in figure 2.9.

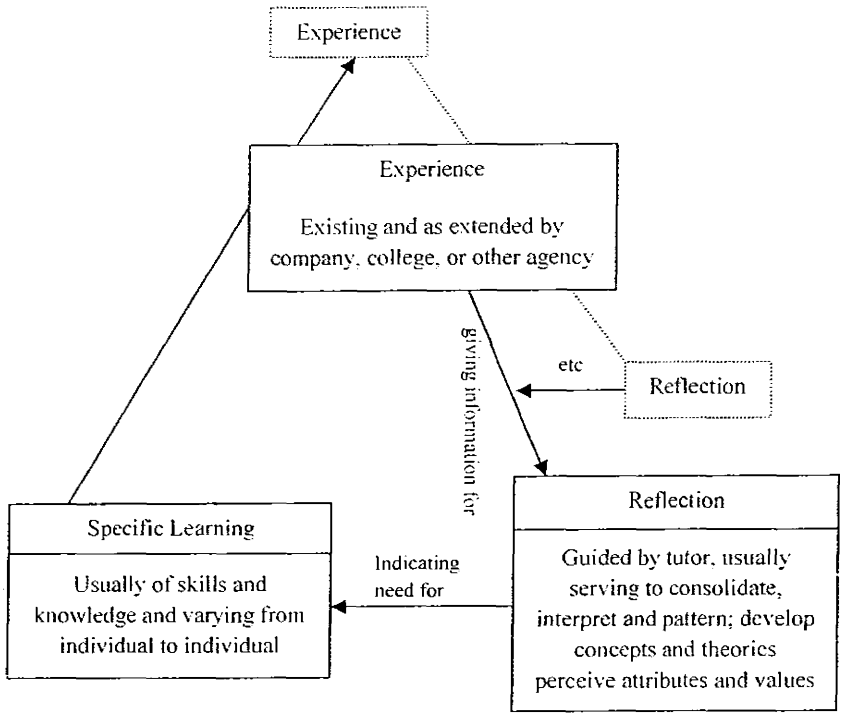

FIG 2.9: FEU Model

It has three phases that are experience, reflection and specific learning. Reflection on past experience offers stuff for more experience; however, the model "does not adequately explains the role of reflection in the learning process to help learners turn experience into learning" (Chuaprapaisilp, 1997, p.249).

The FEU model attempts to establish a link between "training and education, that is, between initial, or pre-vocational preparation training and progression from that to further training and education" (Edwards, 1984, p.61)

2.11.6 Dale's Cone of Experience

Experience is the basic element for reflection in the reflective process. Learning experiences are of many types and hence classified in different ways as done by Edgar Dale (1946) in his

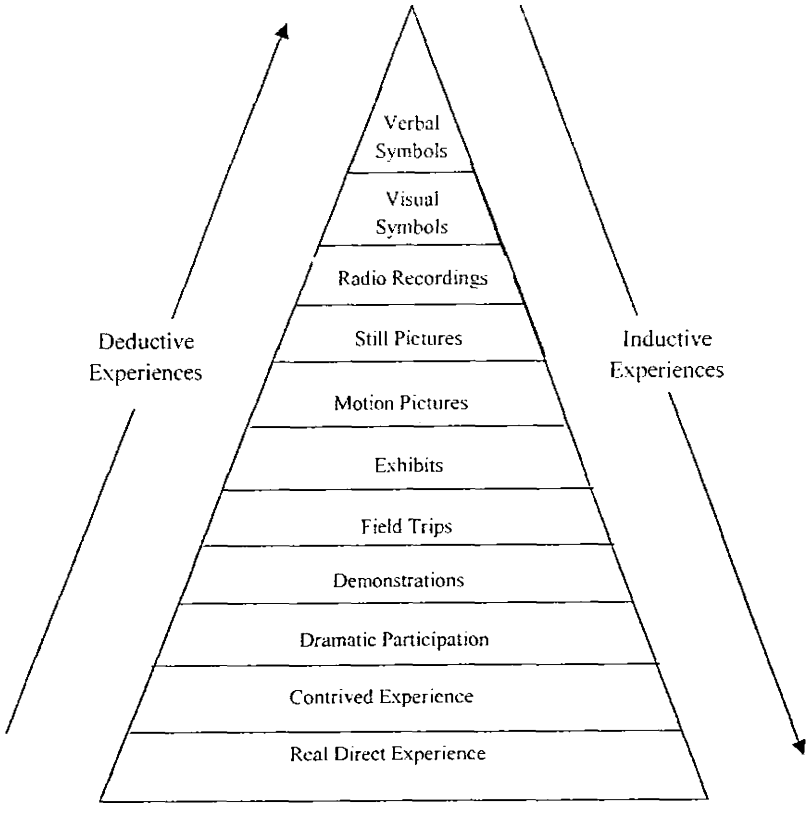

FIG 2.10: Dale's Cone of Learning Experience

'cone of learning experiences' (illustrated in figure 2.10.), which is a "visual aid to explain the interrelationships of the various types of audio-visual materials as well as their individual position in the learning process" (Dale, 1946, p.37) describing it as an appealing "visual metaphor of learning experiences in which the various kinds of audio-visual materials appears in the order of increased abstraction as one proceeds from direct experience" (Dale, 1946, p.38)

Dale's cone of learning experience provides a detailed account of experience which get more and more abstract when moving from bottom to top explaining deductive and inductive experiences.

2.11.7 Ghaye's Model of Reflective Practices for Enhancing Human Flourishing

Most of the theorists and practitioners consider reflective practice as a problem-solving strategy; however, it may not be taken so narrowly. Ghaye (2011) considers it an effective tool for the advancement of human flourishing, provided that it can be used for positive purposes by diverting the attention from "problems and more towards strengths" (p.13) that results in the reduction of human sufferings and more productivity at work.

Ghaye (2011) draws a model of reflective practices for enhancing Human Flourishing, as shown in figure 2.11, which emphasizes possible foci of the practices. In this model, the starting point is having positive emotions that ensure positive engagements with other people that give meaning to life and provide a purpose in life. The situation leads to a positive relationship among the members of the workgroup, based on "quality of interpersonal action, trust, honesty, openness and positive regard" (Ghaye, 2011, p.14).

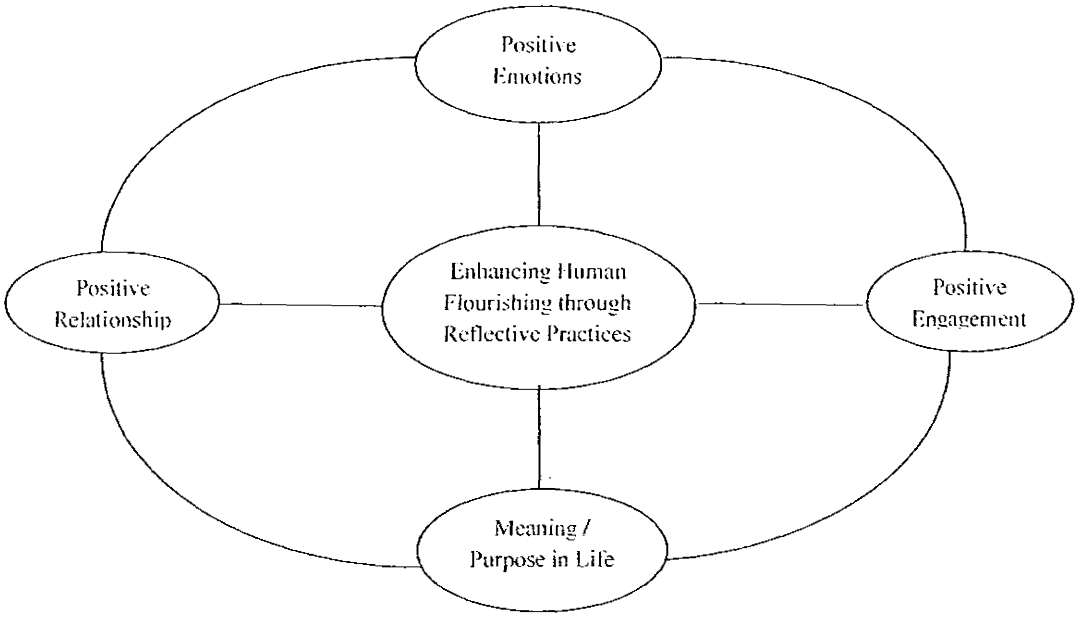

FIG 2.11: Reflective Practices for enhancing Human Flourishing

In this manner the unpleasant and awesome picture of reflection can be replaced with the possibilities to find out balanced working environment in the form of positive interaction among the members of an organization, as humans are positive by nature but are changed by their experience in the world at different levels.

2.11.8 Peters' DATA Model

Peters (1991) identifies that reflective practice requires critical thinking and knowledge of the past for the comprehensive self-development. He explains that "the reflective practitioner is a student of his or her own actions and that the study of these actions is conducted in a systematic, analytical manner" (Peters, 1991, p.90), for which he suggested a four-step model. Peters' model focuses reflection-on-action, introducing it to the unacquainted individuals and provides base for reflection-in-action (Merriam & Brockett,

2007). Peters' Model of reflective practice can also be called as DATA Model, comprising four steps:

1) DESCRIBE the dilemma, or event happened during the practice of an activity;
2) ANALYZE the situation that aroused as well as the best possible way-outs;
3) THEORIZE for the sought out way-outs as well as the alternate ways for handling the situation; and
4) ACT according to plan sought out earlier.

2.12 Forms of Reflective Practice

Richards & Lockhart (1994), Hall (1997), Richardson et al (2009), Hillier (2005) and Qing (2009) identified the following practices in reflective teaching based on the literature; however, these are neither final nor exhaustive:

2.12.1 Action Learning

Action learning is a continuous social process of learning and reflection, where the individuals learn from each others and each member of the group attempts to provide for the obvious shortcomings of the other with proper knowledge and skills (Revans, 1997; McGill & Beaty 2001) in order to ensure the wellbeing of the group as well as to broaden human vision in the group providing the group members with effective leadership skills and self-consciousness. It focuses upon the real problems, analyze its different dimensions, operationalize the possible solutions, and follow up the results so that the prospects of problem solving are made better (Garratt, 1997; Marquardt, 2006).

Action learning is the brainchild of Reg Revans, President of the International Management Center in the United Kingdom (Marquardt, 2006) but the notion was popularized in 1971 across the globe; however, active learning, in different forms, was in vogue since very early as "the most primitive creatures must have learnt from their own experience, by carrying on with what they found good for them and by refraining from what they found to be harmful" (Revans, 1997, p.4). Future actions are constructed through reflection on the learning (McGill & Beaty, 2001) from the real situation that make provision for the "people to make and learn from mistakes", which makes "action learning attractive"; however, simultaneously making "it much harder to plan for, control, and contain" (O'Neil & Marsick, 2007, p.1).

As it is action and reflection, hence the individuals learning by doing creating a real situation as similar as we learn from our past experience by pondering about it that provides the opportunity to react the prospective problems in a positive way, establishing a link between past and future (McGill & Beaty, 2001). It has six parts (Marquardt, 2004, p.2-4):

1. a problem(project, challenge, opportunity, issue, or task);
2. an action learning group or team;
3. a process of insightful questioning and reflective listening;
4. an action taken on the problem;
5. a commitment to learning; and
6. action learning coach

2.12.2 Collaborative Action Research

Kurt Lewin used the term 'action research' for the first time. Action research is a limited "investigative projects in the teacher's own classroom, and consists of a number of phases which often recur in cycles: planning, action, observation and reflection" (Richards &

Lockhart, 1994, p.12) applied "for improving conditions and practice in classrooms and in other practitioner-based environments such as administrative, leadership, social and community settings" (Craig, 2009, p.3) and solving the current problems through a purposefully structured and efficient inquiry.

Collaborative action research, which is also called as collegial inquiry, is an offshoot of action research that provides for improving of practices by the individuals and groups (Mills, 2007). It is "a learner-centered approach to staff development" (Cunningham, 2011, p.3), which is crucial as the "social reality is determined and improved as part of the overall common goals and visions of an entire school" (Craig, 2009, p.5). It is a "disciplined, recursive approach to professional learning with a cycle of behaviours that involves establishing a focus; generating questions; taking action; collecting and analyzing data; reflecting; adjusting course; and often, generating new questions to pursue" (Cunningham, 2011, p.3) with the collaboration of group members.

To understand collaborative action research, the following examples, as cited in (Cunningham, 2011, p.17) may be helpful in explaining the procedure:

> **Example 1:** Four administrators, six classroom teachers, and two literacy specialists explore the question, "What does quality assessment practice look like in the classroom?" They meet one to two times per month for an entire year to identify indicators of quality assessment and draft tools to use with teachers. They consider feedback from others in the school community, read related literature, and revise the tools over time.
> **Example 2:** A group of 2nd grade teachers decide to analyze their students' written responses to literature using a literature-response rubric. Over the course of the school year, they analyze samples from select children in the classroom, who represent the range of abilities, in an effort to answer the question, "How will students' abilities to respond to literature change over time?"

2.12.3 Course and Unit Reviews

In common practice, programme reviews are carried out at different level of educational institutions, but course and unit reviews are rarely made; however, it can be used more effectively for reflective practice in instructional programmes (Zuber-Skerritt, 1992).

Course and unit reviews enable the learners to refresh their information and knowledge as well as provide a feedback to the teachers, if made purposefully and in planned manner. The review in either case may not be offered by the teacher in a single breath, rather carried out through enquiry method, where learners are asked the key concepts and required them to explain them. This will require teachers to have proper homework regarding the questions. It provides the strengths and weaknesses of the learners.

2.12.4 Individual and Group Projects

Spoon feeding the learners hampers their creative thinking and leads them to be dependent for ever. Keeping in view this, teachers attempt to engage them in some sort of assignments, and therefore, different projects are assigned both individually as well as in groups. In both the cases, clear-cut guidelines and adequate planning is necessary.

Individual projects are sometime comparatively easy as no coordination is required as in the case of group project. Group project need more careful planning and crystal clear procedures as Hillier (2005, p.142) maintains that:

> The dynamics involved in individuals, working together. They also require time for the individuals to meet together to plan and then undertake the activities required...some members tend to lead and organize, and others will 'coast'...to make a presentation at the end of the project, there may be competition between the individuals to be the presenter, or there may be a reluctance to do so.

In such a situation, the prior distribution and assignment of work to each member of the group, under the supervision of teacher as facilitator, might minimize the mishaps later. On the contrary, individual projects are tedious as the whole project is prepared by a single person, which may be sometime difficult to manage the costs, time, materials, and even expertise as well as some people "hated the sense that in the large group [they] were all so exposed" (Hillier, 2005, 8).

2.12.5 Clinical Supervision

Clinical supervision is one of the important reflective practices, and is used for the "promotion of individual learning and the development of the learning organization" (Johns, 2009, p.235), therefore, is often considered as "one of the ways in which organizations can demonstrate to their staff that they matter" (van-Ooijen, 2003, p.4); hence it demands that "clinical supervisee/supervisor [must be] interested in developing the necessary skills and attributes to be reflective in practice" (Driscoll, 2000, p29)

The notion of 'clinical supervision' was adopted in 1950s by When Morris Cogan and associates from the medical profession to incorporate in the teaching-learning process and become part of the classroom practices, proposing a sort of professional learning where the learner and his/her context is taken prime. Supervision has been playing its role in educational administration since very early but its influence in the classroom behaviour of the learners is a new concept and therefore, little literature is available on instructional supervision (Anderson, 1986).

It is a complex and complicated phenomenon, which consists of "planning conference, classroom observation, and feedback conference" (Gall & Acheson, 2011, p.3).

In planning conference, the supervisor plan for the classroom observation with the consultation of teacher; the supervisor observes classroom activities in order to judge the achievement of the preset objective in the earlier phase; and finally in feedback conference, the supervisor analyzes and interprets the observation along with the teacher and make decision for onward activities (Gall & Acheson, 2011).

2.12.6 Lesson Reports

Lesson report provides the main features of a lesson. It is a planned and structured inventory that provides the teacher "a quick and simple procedure for regularly monitoring what happened during a lesson? How much time was spent on different parts of a lesson? And how effective the lesson was?" (Richards & Lockhart, 1994, p9); however, it also explains the proposed activities of the teacher undertaken during a lesson in a usual way. It helps in ensuring that how much the goals and objectives of the lesson will be and have been achieved.

2.12.7 Critical Incident Analysis

Critical incident is reflection that rests upon the analysis of practice where the practitioner has taken action, which has important results for quarters concerned (Thomas, 2004). Brookfield (1987, p.97), as cited in Thomas (2004) maintains that an incident is, "that for some reason was of particular significance, [and where] the emphasis is on specific situations, events and people", which resulted in some important consequences.

The idea of critical incident analysis has been developed by Flanagan (1954), where commonalities of different approaches are sought out. Results are combined with the procedural analysis in order to describe matter for the instruction (Morrison et al, 2011). The

critical incident analysis procedure asks certain question that provides information for the analysis of the incident as Morrison et al (2011, p.91-93) and Hillier (2005, p.7) maintain:

- What were the conditions before, during and after the incident?
    - Where did the incident occur?
    - When did it occur?
    - Who was involved?
    - What equipment was used, and what was its condition?
- What did you do?
    - What did you do physically?
    - What did you say and to whom?
    - What were you thinking?
- How did this incident help you reach or prevent you from reaching your goals?
- What were the characteristics of that situation which helped to learn?
- What was difficult?
- Is there anything about these characteristics that we think we could attend to with our own learners?

2.12.8 Engaging a Critical Friend

The number of participants in any activity ensures the reliability of the activity; same is the case with research and other academic activities, furthermore, reviewing oneself is dangerous, when quality and success is necessary, therefore, the role of a foreign element

will be of great value to ensure objectivity as well as support (MacBeath, 1999) and such a foreign element is better none other than a critical friend.

The idea of critical friend has been coined by Sagor (1992, p46); a critical friend, who "has your interests at heart when she gives you constructive criticism" and is invited in to "guard against incomplete or short sighted data collection" through critical questions in the activity.

The involvement of critical friends helps to refine the process and yield result by motivating the efforts of improvement. However, the critical friend will be helpful, if he has the "expertise in the task at hand and who might challenge the theoretical underpinnings, research methods, and content perspectives on the phenomenon being studied, though he is not a consultant" (Pavlish & Pharris, 2011, p.142) and therefore, needs an in-depth understanding of the context of the activity (Hoy, et al, 2000).

2.12.9 Drama /Role Play

Drama is quite useful in developing the affective domain of the learners and provides them a source of motivation. It empowers the learners to be reflective practitioners, as they have to concentrate on life moments that they have to perform. However, drama is a complex phenomenon, which addresses the complexities of real life, fiction and performance on the stage (Morrison et al, 2006). It is one of the sources 'to introduce new ideas and ways of working" in one's personal life as well as professional life (Nicholson, 2000, p.6).

Role play is a good way of personal development and is adopted for the promotion of client-centered approaches in different fields. It enables the individuals to have experience of what they like and provide the opportunity that how to behave in future real situation. The

individuals develop skills through role-play to do such things that are alien to them personally, and hence develop them kindhearted to others (Hillier, 2005).

2.12.10 Journal Keeping

A journal is "a written record of experiences, ideas, feelings, or reflections, that is used to increase one's self-awareness, deepen one's understanding, and develop new insights" (Gottlieb et al, 2006, p.87) that is maintained by either teacher or learner or even both simultaneously. It can also be defined as "a sequential, dated chronicle of events and ideas, which includes the personal responses and reflections of the writer (or writers) on those events and ideas" (Stevens & Cooper, 2009, p.5), which have occurred in classroom.

A journal has six features as it is "written, dated, informal, flexible, private and archival" (Stevens & Cooper, 2009, p5), and serves two basic purposes in education; the recorded events and activities provide material for reflection; and inculcate an insight regarding teaching-learning process. The practice of journal keeping opens up avenues for different novel activities in the classroom (Richards & Lockhart, 1994).

Journaling can be made through different formats, "ranging from the unstructured to the very structured" (Gottlieb et al, 2006, p.87) depending on the purpose and situation. The unstructured journaling is a freestyle having no rule and regulation; formats and instructions, while in structured journaling, the instructions are very much clear and specific and the event worth recorded are more focused (Gottlieb et al, 2006). Journaling enables students to combine and relate subject matters and skills in order to develop insights and new outlook (Stevens & Cooper, 2009).

2.12.11 Mentoring

Mentoring is now widely used in a number of professions, which reflects the potential of a professional relationship of mentor and mentee in order to improve practices (Fletcher, 2000). Mentoring is "a sustained relationship between a novice and an expert" where, "the expert provides help, support, and guidance that helps the novice develop the necessary skills to enter or continue on his or her career path" (Podsen & Denmark, 2007, p.10).

The term 'mentor' has it roots in the classic Homer's Odyssey where Ulysses nominated Alimus' son Mentor as tutor and advisor to his son, Telemachus as well as custodian of his property during Trojan War. Mentor's influence on Telemachus was beyond the status of a teacher and advisor. Young men were used to give in charge of an older wise and experienced person, who had to bring them up and inculcate values in the young people (Morton-Cooper & Palmer, 2000), therefore, mentor stands for a prudent, knowledgeable, expert and faithful guide.

Mentoring is the development of personal and professional strengths of the mentor and mentee (Fletcher, 2000) and a mentor has to play two major roles; as an expert and as a role model (Podsen & Denmark, 2007) making the "ways to change by building self-confidence, self-esteem and a readiness to act as well as to engage in ongoing constructive interpersonal relationships" through "smoothing the way, enabling, reassuring as well as directing, managing and instructing" (Fletcher, 2000, 1) throughout the activities.

A mentor helps the mentee in learning through different roles like a "teacher, coach, encourager, supporter, enabler, role model or critical friend" (Dymoke & Harrison, 2008,

p.3), who is sympathetic, lenient in criticism that challenge mentee's behavior, assumption, perception, values and not the mentee's self, his intellect, his judgment, so as his value.

2.12.12 Mind Mapping

Mind mapping is a technique that has great creative potential. It can be defined as "a whole brain, pictorial and associative way to capture thoughts and ideas on a problem" (Winstanley, 2005, p. 64) through "taking notes and organizing thoughts into key words and pictures that can condense mounds of data onto sheet of paper" (Nast, 2006, p8).

The notion of 'mind mapping' has been derived from Tony Buzan's work in 1970s, which had been refined with the passage of time and become a registered trademark of Buzan Corporation in 1995. However, different other variants were used for it as one such is 'spider gram' (Winstanley, 2005).

Mind mapping involves the following stages, which are adopted from Bond & Holland (1998, 110-111) and Klauser (1986, 47-55) as cited in Ooijen, (2003, p15-16):

- Writing the incident which can be a problem, an issue or a situation on the paper in the centre and draw a circle around it;
- Write down any thoughts that occur around the central circle; draw circles around each thought;
- Link all circles with a straight line to the central circle;
- Sit back, look at the map, and add any further thoughts as appropriate, linking them with straight lines; carry on until no further thoughts occur;
- Draw two more straight lines from the central circle;
- Add two 'wild' or 'silly' thoughts;

- Sit back; does anything else occur to you?
- This stage is optional but can be useful when people are doing a course or have just read a relevant book: with different colour pens, add further thoughts regarding your course or reading material if they seem relevant. Say how or why and use a different colour for each thought;
- Now you can rearrange your mind map by deciding which elements seem more important than others, and write them in the form of a main heading with various subheadings.

Mind mapping is useful in quick learning and promoting creativity as well as strengthen the power of organization of thought process. The techniques used in mind mapping, as mentioned in Kandula, (2003, p.216), are:

(i) Mnemonic mind map technique,
(ii) computer mind map technique,
(iii) hierarchy based mind map,
(iv) association based mind map,
(v) creative thinking mind map,
(vi) the mind map organic study technique,
(vii) knowledge mind map technique, etc.

2.12.13 Simulations

Some situations are such that cannot be created, and the learners are deficient in having experience of such situations. The introduction of simulations have greatly solved this problem as they provide the learner such a situation which almost resembles real in a safe environment, but demand proper planning for effective learning. The tutor role is very much

important in placing the learning in simulations that how they act, react and reflect (Hillier, 2005).

Simulation can be defined as "imitating a certain phenomenon (outward appearance or behaviour) by using another device", in other words, simulation is "the actual behavior of a system by making a duplicate having the same characteristics as the original, with the use of computer or a model" (Ohnari, 1998, p.1). It is "an experiment in a computer where the real environment is replaced by the execution of a program" (Le-Boudec, 2010, p.176).

Simulations were firstly introduced by Prussia army for the selection of their officers. The recruiting officers were dissatisfied with traditional system of recruiting, evaluation and ultimately conceived simulations to test behaviors of new officers as (Jones, 1995, p.41) maintains that, "instead of asking 'How would you cope with situation X?' the idea was to place the person in that situation, as far as was practical and desirable, and see what happened". British army later on followed the footsteps of Prussians.

Simulation provides the participants great autonomy, even the authority of committing mistakes, as it is not taught and "if it is taught then it is not a simulation" (Jones, 1995, p.10) rather it is an experiential learning and participants attempt to rectify their mistakes in the next simulation. Thus learners are highly motivated as the activities are carried out according to their own pace as well as decision-making (Hertel & Millis, 2002), however, the simulations must be authentic, reliable, providing unrestricted choices that tap the participants' emotions and feelings and compel them to act (Aldrich, 2004).

2.12.14 Concept Mapping

Concept mapping can also be called as flow chart, idea mapping and is rooted in the mind mapping procedure (Nast, 2006). It is an "explicitly cognitive psychology of learning and an explicit constructivist epistemology" (Novak & Canas, 2009, p.3) that ensures high level of productivity and creativity in learning and develops organization of thoughts and ideas.

Concept mapping is a "process whereby a graphic representation is created of the various concepts and linkages of knowledge and understanding" (Martin & Kompf, 1996, p.93) through "colourful visual picture of the issue at hand ... all on a single sheet of paper" that gives a holistic approach to understand the problem at a glance (Nast, 2006, p.2).

Concept mapping demands deep reflections on the part of both teacher and taught (Afamasaga-Fuata'i, 2009), so that brain can view, think and comprehend the situation. It deviates the traditional ways of thinking and "to plan, learn, increase productivity, save time, improve recall, and create using the logic of association" (Nast, 2006, p.2).

2.12.15 Peer Observation

No human being is perfect and at the advantage to possess all the abilities and capabilities of doing a particular job, hence always there is a room for improvement through different means. Peer observation is one such means that greatly contribute to individuals' enhancements of abilities and capabilities. Peer observation can be made both of teachers' teaching as well as learners' learning. It must be kept in mind here as Thompson (2002), cited in Black, (2010, p.38-39) states that it is "not evaluative but is instead part of peers helping peers process that grows out of a desire for individual and community

improvement" so it implies that peer observation has no judgmental value rather a support to the individuals' work progress in a friendly and cooperative way.

Peer observation is the way where the individuals have "to learn from and support each other's work. It can help them build a community of learners, develop habits of reflective practice and work together to improve instruction" (Thompson, 2002 as cited in Black, 2010, p. 41).

It strengthens the concept of collaborative team work as it provides the opportunity to "novice teachers to see what more experienced teachers do when they teach a lesson and how they do it. But experienced teachers can also benefit from peer observation" (Richards & Farrell, 2005, p86) as it proved "effective in building community as well as fostering self-reflection" (Boye & Meixner, 2011, p.19) through varying experiences of other members of the community.

2.12.16 Brainstorming

Brainstorming is one of the important reflective practices and the notion has been introduced by Alex Osborn through his work 'Brainstorming, applied imagination' in 1953, which is to him, coming up with more good ideas – 'potentially useful and relatively unique' (Duggan, 2003).

It is a technique used in classroom and workshops "to stimulate the maximum flow of information and ideas" (Nieuwenhuizen, 2008, p.173) that pre-censoring responses to questions posed (Ooijen, 2003). Duggan (2003, p.152) quotes a dictionary definition of brainstorming is as "a group problem-solving technique that involves the spontaneous contribution of ideas from all members of the group".

Brainstorming is carried out in groups, who attempt to answer a question and pouring ideas without any editing. It yields better results when there is "more unrealistic the idea or proposal" as it challenges the mind of the participants in better way (Nieuwenhuizen, 2008, p.173). It serves both as identifying problem on one hand and the ways how to get rid of it on the other hand as it "taps people's creative ability to identify and solve problems, and brings out a lot of ideas in a very short time" through group work (Amsden et al, 1998, p.150).

2.12.17 Self Accounting

Reflective practice includes self-accounting on the part of practitioner, as to be more effective. It demands an active conscience that enable the individuals to distinguish between the right and wrong and have the courage to rectify their wrong done. It optimized the performance of both the practitioners and learners.

Self-accounting though a difficult process; however, critical analysis of the work and performance help out to judge one's own performance. Analysis of the performance is made by comparing one's own work with the work of other people. One other parameter for determining the quality of performance by an individual is that how much it is useful and productive in the setting situation.

2.12.18 Storytelling

Human beings across the globe remained fond of stories to hear and then tell them in their childhood, even the same continue in the later life to the extent as it satisfies human instincts of having to store and recall memories. Storytelling is an easy, organized, interesting, and economical source of sharing memorable things and events among the people.

Storytelling is a "unique human experience that enables us to convey, through the language of words, aspects of ourselves and others, and the worlds, real or imagined, that we inhabit" (McDrury & Alterio, 2003, p.31) as the narrative experience of human beings implies that "storytelling is first and foremost a human communication practice" (Langerllier & Peterson, 2004, p.2).

As a reflective practice, storytelling is one of effective learning tools that "stimulate students' critical thinking skills, encourage self-review and convey practice realities" (McDrury & Alterio, 2003, p.8) that establish a "communication relationship" between the storyteller and listeners within no time as "the utterance 'let me tell you a story' is performative in that it does what it says it is doing" (Langerllier & Peterson, 2004, p.2).

2.12.19 Teaching Portfolios

Individuals and communities are now more concerned with the quality and effectiveness of education in general and teaching in particular. Therefore, detail account of teachers' activities and performance is required to be available to the quarters concerned, which is served through maintaining teaching portfolios.

A teaching portfolio "offers an effective and professional means by which teachers can display their credentials" (Davis & Huss, 2002, p.145); and includes, "factual description of a professor's [teacher's] teaching strengths ad accomplishments. It includes documents and materials that collectively suggest the scope and quality of a professor's teaching performance" (Seldin et al, 2010, p.4).

Teaching portfolio focuses the goals that facilitate thinking and practice as well as provide an opportunity to question the beliefs and practice. Its structure is based on the

documented research and professional experiences (Spronken-Smith & Stein, 2009); however, it does not encompass all the teaching materials and activities and hence presents collection of "selected information on teaching activities and solid evidence of their effectiveness" (Seldin et al, 2010, p.4).

Teaching portfolio facilitates "thinking and reflection" that offers a forward looking and enquiry-based approach to teaching (Spronken-Smith & Stein, 2009, p.200) The main purpose of teaching portfolio is the improvement of teaching through reflection on the work, and enrichment of student learning (Devamas, 2010) through the continued scrutiny of their observation and experiences. It also strengthens the consciousness, which lacking earlier and enables teachers to present their professional accomplishments for external assessment and evaluation, therefore, become a priority of the institution (Spronken-Smith & Stein, 2009).

2.12.20 Written Accounts of Experiences

The materials stuff for reflection are the past experiences of the practitioners, therefore, experiences must be recorded in someway. Keeping written accounts of experiences provide the practitioners themselves as well as others to utilize them whenever and wherever they are deemed required.

Written account of experience is a narrative description of the happenings in one's personal or/and professional life. In this form experiences can be adequately analyzed and scrutinized eliminating the irrelevant aspects and more focusing on the pertinent portions that can be utilized during the practice.

2.12.21 Self-Reports

Introspection approach reveals what nothing can approach except the individuals themselves, as humans have best knowledge of themselves. therefore, self-report is a unique and primary source of information in the behavioural sciences. It also provides a source for self reflection of the experiences, as the people to learn about individuals' feelings, emotions, thoughts and experiences of the concerned persons but the self-reporting person should attempt to be "informative, truthful, relevant, and clear" so that the audience may interpret reports adequately and correctly (Schwarz, 1999, p.94).

Self report is the account of personal experiences of an individual, which the other people do not know and the only source to describe them is the individuals' own reporting. It can be made in two situations; firstly, there is no source of information other than self-report and secondly, the sources, if available are either inaccessible or unaffordable (Baldwin, 2000). However, self reports are "incidental, rather than intentional learning" as no one records learning through experiencing the events in daily life; nonetheless, learning can be controlled in the laboratory (Jobe, 2000, p.26).

The fluctuation of mood and memory always question the credibility of self-reports; however, this approach has it own limitations. Therefore, retrospective reports of experiences are considered just as they can be verified (Kihlstrom et al, 2000).

2.12.22 Problem-Solving

It is an established fact that problems and their solutions are part and parcel of the changing world (Robertson, 2001); therefore, understanding of problems and their solution mechanism is essential for human beings to survive and utilize the sources and resources

available to him for his wellbeing. Thus problem is a situation when an individual is "required to act but ... don't know what to do" (Robertson, 2001, p.2) or create a dilemma for him. Similarly, the solution part refers to "two aspects of problem solving: either the final solution (answer) or the means of finding the answer (the solution procedure)" (Robertson, 2001, p.4).

Problem solving is "the process of identifying a problem or something you want to accomplish, thinking of ways to solve it, and trying out your ideas" (Church, 1993, p.6). Anderson (1980), as cited in Robertson (2001, p.4), defines problem solving as, "any goal-directed sequence of cognitive operation" of human endeavors and clear thinking is the beginning of problem solving mechanism. Human thinking is either scientific that is critical, logical, procedural, straight-line, analytical, convergent as well as predictable or creative, which is inspirational, intuitive, divergent, investigative, divergent and unpredictable (Mackall, 2004).

The ability of problem solving can be developed by regular practice, and children put the ability since early when they are playing by having experiment and investigating their world (Church, 1993). The problem solving begins with statement of problem, which lead to a solution through prior knowledge and experience and sometime experiments. (Robertson, 2001).

2.12.23 Autobiographies

Autobiography is a written account of the author's life that provides the readers a reflection of his life and experience (Skura, 2008). Philippe Lejeune (1973), as cites in Skura (2008, p.2), defines autobiography as "a retrospective prose narrative produced by a real person

concerning his own existence, focusing on his individual life, in particular on the development of his personality". However, the autobiographers seldom share each and everything of his life; even omit many things unconsciously (Skura, 2008).

Autobiography can be utilized effectively in the teaching practices inside the class, if the subjective is controlled, as both the teachers have to contribute through reflection on their own life and experiences. In the instructional programme, the autobiographies are unpublished and unofficial, therefore, the objective can be ensured to great extent, and serve the purpose in better way.

2.12.24 Collaborative Diary Keeping

Generally people maintain their individual personal diaries, to have the record of life. It often a hobby and little purposeful, but can be utilized purposefully. The personal diaries are seldom shared with other people and therefore, contain best expression of the events and experiences.

The keeping of Collaborative Diary, is a form of diary writing but this is in the form of group activity. This is normally focused on recording of certain activities and encompassed the unanimous experiences of the individuals involved in the activities; however, each group member's individual experience also make the part.

Collaborative diary keeping is better to maintain, as the fear of forgetting the events and activities is minimized due to the involvement of people more than one; however, teachers should "narrowing their focus to a few salient teaching issues" in maintaining collaborative diary (Wallace,1998, p.64).

2.13 Critical Reflection

Critical reflection is a cyclic process with "three stage of reflection: reflective thinking, self-assessment, and goal setting" (Copeland, 2005, p.77) and can be made through four lenses that help individuals to see things, those includes, self, colleagues, learners and literature Brookfield (1995).

Critical reflection offers great freedom to the individuals as well as groups to change things on the bases of experience. Thus, the process can be considered as "a two-stage process, moving from changed awareness to changed practices" (Harrison 2008, p.38).

2.14 Merits and Demerits of Reflective Practice

The thorough review of the literature on reflective practices has provided both merits and demerits of the practices. The merits and demerits of reflective practices are mentioned in the following line.

2.14.1 Merits of Reflective Practice

Reflective practices have great benefits for almost all the quarters concerned with teaching-learning process. The most important benefits of reflective practices are the following:

1. It improves the quality of practitioners' work.
2. It enables practitioners to view events objectively.
3. It enables practitioners to transfer what they do well to other similar situations.
4. It improves practitioners' professional judgment.
5. It identifies staff development needs.

6. It identifies the situations that need changes.
7. It helps the practitioners to plan the future.
8. It develops positive attitude of the practitioners towards change.
9. It develops confidence and competence in the practitioner.
10. It enables practitioners to take ownership of their work.
11. It is less rigid but requires great responsibility and self-direction.
12. It makes learners autonomous and their learning restrictions are abolished.
13. It enables practitioners to have better understanding of learners' reactions.
14. It gives a practical outlook to the theory.
15. It provides for learning of both the teachers and taught.
16. It provides for personalized learning.
17. It provides for continuous improvement.

2.14.2 Demerits of Reflective Practice

The demerits are the following:

1. Some of the practices require a lot of time, which is seldom available to the teachers as well as participants due to the prevailing subject based curriculum instead of learner centered one;
2. Some of the practices also demand for material facilities which can be rarely managed by the institutions, teachers, and learners.
3. Some of the learners may feel endangered by the severe staring, when they have no dedication and devotion to practice of study.

4. It demands comparatively harder work than conventional learning because it requires the analysis and concurrence of theory with practice.
5. The teacher or guide may not be prepared for it as they consider it as educational technology instead of an evolving process.
6. Many look reflective practice quite complex and rather obscure.
7. It involves students' worries reacting to their personal revealing of things that they do not want to share.
8. Some think that past is past and it has no relations with the current situation, hence reflection on the past experiences makes no sense.

2.15 Thinking

Human being has the ability to think and ponder. The thinking can be varied. The thinking process contributes to the development of human intellect greatly. The different forms of thinking are discussed below:

2.15.1 Critical Thinking

Critical thinking is "the art of analyzing and evaluating thinking with a view to improving it" (Paul & Elder, 2009, p.4) that provides for "deliberate metacognitive (thinking about thinking) and cognitive (thinking) act whereby a person reflects on the quality of the reasoning process simultaneously while reasoning to a conclusion" (Moore, 2010, 2).

It requires clarity in thoughts and communication, accuracy and precision of the facts that are communicated as well as the judgment, relevance to the issue in hand as well as the

situation and depth in handling the situation (Sen, 2010). It involves four steps: "identify the problem and break it down; collect information/perform research; form opinions (hypothesis); and draw conclusion" (Robertson, 2001, p.25).

Critical thinking is also called as convergent thinking, which was used by Joy Paul Guilford for the first time that means the skill to identify a correct answer for a question from all the available information, which seldom requires creativity on the part of individual. This sort of thinking is predominant in the school setup and students are required to memorize the available information and then utilize them in the case of solving a problem. This is workable, when there is only single answer pertaining to a question; however, many situations demand beyond critical thinking.

2.15.2 Parallel Thinking

Problems arise out of contending thinking, where the individuals attempt to prove or reject something. Instead of contending thinking, parallel thinking provides the opportunity to arrive at a conclusion more positively. It is a constructive method of thinking. The 'Six Thinking Hats' present parallel thinking and offer alternative for argumentation (De-Bono, 2000). De-Bono's Six Thinking Hats lead the individual in a direction that enable them on concentrating issues, ideas and reaching a conclusion.

2.15.3 Creative Thinking

Creative thinking is primarily focused on "exploring ideas, generating possibilities, looking for many right answers rather than just one" (Harris, 1998, para 1). It is a "leap in the dark" (Adair, 2007, p.17) that involves "encountering gaps, paradoxes, opportunities, challenges,

or concerns, and then searching for meaningful new connections" (Treffinger et al, 2006, p.3) that leads into "new paths of creative activity" (Adair, 2007, p.1).

Creative thinking is also called as divergent thinking, which is generated by J. P. Guilford in 1950s, provides for the ability to frame new and original ideas and generate many solutions for a question. Creativity is the product of human's divergent thoughts and action. It demands fluency, flexibility and originality (Meador, 1997) and involves a comprehensive and detailed search for solution options in connection to a problem that lack an exclusive answer. In a divergent process, "the generation of alternatives involves finding many combinations of elements that may provide many possible answers" (Proctor, 2010, p. 57)

Critical and Creative thinking are considered as antithesis of each other and hence incompatible. This is because of, that critical thinkers are considered as "serious, deep, analytical, and impersonal" whereas creative thinkers are mostly considered as "wild and zany, eccentric, or at least a little bit weird or strange and who thrives on 'off the wall' ideas that are usually impractical" (Treffinger et al, 2006, p.3); however, this is neither true nor useful rather both are complementary notions and can be applied simultaneously in successful problem solving.

2.16 DeBono's Six Thinking Hats

It is common to human, to encounter problems and dilemmas, but their solutions are easier if people resort to discuss the issues objectively putting aside their egos and emotions as the

solution speaks more than the winning a debate, providing for the right behavior on the part of the participants of the discussion (DeBono, 2000). However, thinking issues has strong relation with the emotions and feelings and closely connected with the situation (Smith & Roberts, 2011).

Edward de Bono (2000) presented a unique framework in the form of 'Six Thinking Hats' providing that the process of thinking and reflecting in a situation or making

The white hat – provides information. Is neutral and objective	What information do you know? What information is missing? What questions should I ask? Whom should I ask? How can I get this information?
The red hat – provides feelings and emotions	How do I feel? How does the patient [learner] feel? What emotions do I feel? What emotions does the patient [learner] feel?
The black hat – provides caution and asks for care. Highlights weakness and risk	What judgment can be made in light of the facts? What policies and procedures are in place? Were these followed? What risks are there to the patient [learner]? What risks are there to me and my colleagues? What ethical considerations are there?
The yellow hat – provides optimism and positively. Looks at the benefits	What is good about this situation? What are the benefits? What values are being expressed?
The green hat – provides creativity and new ideas, allows for growth and development	What ideas and solutions do we have? What alternative actions could we use?.
The blue hat – provides control and organization of thinking	What have we achieved so far? What have we reflected upon?

FIG 2.12: DeBono's Thinking Hats

arguments, is just like wearing thinking hats on the head as "there are two sides to every argument [or situation]" (DeBono, 2000, 2). Each hat has its own colour code identifying varying pattern of thinking in a particular situation, with a comprehensive understanding. The colours of six hats are white, red, black, yellow, green and blue that represents a particular thinking (Smith & Roberts, 2011). The six thinking hats and their corresponding thinking patterns are illustrated in the figure 2.12, as cited in (Smith & Roberts, 2011).

DeBono' thinking hats promote constructive thinking (Smith & Roberts, 2011) that provides a structured mode of brainstorming regarding a problem, an event or a situation; however, only one hat can be put on at a time. It is an effective focus approach for those who encounter hardships in creating new ideas (Winstanley, 2005).

2.17 Application of De Bono's Hats in Education

De Bono's thinking hats has great importance and application in almost all the applied fields providing an opportunity for parallel thinking to the individuals. It is equally applicable to the situations in Education. Rizvi et al (2011) have explained the application of De Bono's hats in different situations in the field of Education that include classroom management, leadership, decision making and problem solving, literacy and reading comprehension. In every situation, at first the information are gathered by wearing white hat, which is guided by emotions, feeling and intuition when red hat is put on. The putting on of black hat enables the individuals to make right and judicious decisions whereas the yellow hat provides for optimism and positivity in the situations. The individuals go for innovation and

creativity when put on the green hat. The wearing of blue hat provides for a review of the entire process that demanded by the situation.

2.18 Creativity

Creativity is a complicated and challenging notion, which lacks unanimity in definition (Isaken et al, 2011) and therefore, different scholars have viewed it differently. Mumford, (2003, p. 110) defines the term as, "Creativity involves the production of novel, useful products". This definition communicates that everyone has creativity though the degree may vary in different individuals. This variation indicates that it can be developed by deliberate attempts. Liu & Liu (2011) affirm that everyone has the ability of creativity irrespective of his educational background; however it can be improved by education.

Creativity is considered as ability, an attitude, a habit and a process. As ability, creativity is "to imagine or invent something new" (Harris, 1998, para.3) in a restrictive sense, as Almighty Allah alone can create from nothingness. Creativity as an attitude is, "to accept change and newness, a willingness to play with ideas and possibilities, a flexibility of outlook, the habit of enjoying the good, while looking for ways to improve it" (Harris, 1998, para.5). Creativity as a habit is "a natural part of being human" (Isaken et al, 2011, p.3) and "often obvious in young children, but it may be harder to find in older children and adults because their creative potential has been suppressed by a society that encourages intellectual conformity" (Sternberg, 2007, p.24) that can "either be encouraged or discouraged" (Sternberg, 2007, p.3).

Creativity is a process, which deals with "the mechanics of how creative ideas are produced is used" (Green, 2010, p.4) that is "to be novel, at least for the individual producing it... and ... it should be of value, or be appropriate to the cognitive demands of the situation" (Ronen, 2003, p.33).

2.19 Aspects of Creativity

Kozbelt et al (2010) opine that it is generally observed that the creativity in individuals varies to a large extent rather it depends primarily on "4P" which provides for Process, Product, Person and Place; however, this is extended to "6P" by adding Persuasion (Simonton, 1990) and Potential (Runco, 2003).

Process describes thought mechanism and creative thinking whereas the product deals with the creation of framing ideas into concrete objects. Creative person is one which has the qualities of open-mindedness, keenness, autonomy, expertise, exploratory behaviour and inquisitive nature. Similarly in creativity place considers the best circumstances in which creativity flourishes, which include degrees of autonomy, access to resources and the nature of people behaviours. Creative persuasion provides for the attachment and affiliation with new ideas and new things while the potential presents for the individual to have the ability to do something unique.

2.20 Characteristics of Creative Persons

People live in communities with varying personality characteristics that classify them into different categories such as, intelligent, hard worker, handsome, critical, analytical, etc. Similarly creative persons have their own characteristics that enable people to identify them among others.

People may attain development and can express their creative ability through different ways (MacKinnon, 1978, as cited in Isaksen et al, 2011) that can be included "flexibility, playfulness, fluency, originality, curiosity, risk-taking, elaboration, openness, complexity, high energy, imagination, independence, tolerance of ambiguity, capacity to make order from chaos" (Isaksen et al, 2011, p.9)

The characteristics of a creative person to Runner (as cited in Hota, 2000, p.205) includes that he/she must be adventurous, disorganized, witty, like unpredictability, challenge the authority, tolerant, open minded, positive, disciplined but impulsive and does not persist upon a single action.

Harris (1998, para.96) identifies characteristics of a creative person as he/she has to be "curious, seeks problems, enjoys challenge, optimistic, able to suspend judgment, comfortable with imagination, sees problems as opportunities, sees problems as interesting, problems are emotionally acceptable, challenges assumptions, and doesn't give up easily: perseveres, works hard".

A creative child has certain personality characteristics, which include "(i) having strong self image; (ii) can easily recall earlier experiences even though they may have been unpleasant; (iii) humorous; (iv) accept himself creatively and possesses greater self-awareness; (v) exhibiting greater independence from the environmental influences and readiness to respond to them; and (vi) showing less conformity to parental values (Weihberg and Springer as cited in Hota, 2000, p.204).

Lowenfield (as cited in Hota, 2000, p.205) has enlisted eight characteristics which are considered essential for creative persons, including, "sensitivity to the problem, fluency, flexibility, originality, redefinition, ability to abstract, ability to synthesize and coherence of organization".

In nutshell, a creative person has to be flexible, curious, fluent, humorous, witty, positive, tolerant, open-minded, risk-taking, imaginative, adventurous, challenging, disciplined but impulsive, optimistic, problem seeker, reflective, self-aware, think abstractly, and see problems as opportunities.

2.21 Barriers to the Development of Creativity

There are a number of barriers to the development of creativity, which are built both inside the individuals as well the outer circumstance. Sloane (2006), Ronald (2010) and Cowley (2005) have identified some most important barriers to the development of creativity. These barriers include criticism, neglecting brainstorms, problem hoarding, outsourcing change, convergent teaching practices, teacher' attitudes and beliefs about creativity, motivational

environment, students' own creativity-related beliefs, feeling of being not creative, fear of risk taking, product bias, lack of experience, lack of technique, and over-reliance on techniques.

2.21.1 Criticism

Criticism is one of the important barriers to the development of creativity. The new ideas are criticized and termed as bad by the critics for variety of reasons. However, nothing is absolutely bad or wrong. The criticism discourages the individuals who attempted to create new ideas. The once criticized ideas and things are subsequently praised and admired by the critics. As "Decca Records turned down the Beatles, IBM rejected the photocopying idea that launched Xerox, DEC turned down the spreadsheet and various major publishers turned down the first Harry Potter novel", but the same were later on adopted and earned great appreciation (Sloane, 2006, p.117).

2.21.2 Teacher' Attitudes and Beliefs about Creativity

The main barrier in the way of creativity is the negative attitude of the teacher towards creativity. They consider the learners have nothing to do neither new thing nor they can generate a new idea. The approach depicts in the mal-treatment and rejection when the learners attempt for new ideas and innovation (Ronald, 2010).

2.21.3 Product Bias:

One most important barrier in the way of creativity is the demand for an end product. The end product is considered tangible and easy to understand by the general public, but this seems totally irrational (Cowley, 2005). However, the creative process might not be as

product oriented as is demanded. It only paves the way for subsequent product. Ronald (2010, p.456) explains thus:

> A teacher might applaud the creativity of a small group of eighth-grade students who produced an original *i-movie* (which they used to illustrate the process of photosynthesis); yet that same teacher may fail to recognize the creativity potential of another group of students (who needed more support to take their ideas from potential to product).

2.21.4 Neglecting Brainstorms

Brainstorming is an effective technique in generating new ideas. Though it is a time consuming and needs sessions, but it really works to create new idea or find a solution a problem (Sloane, 2006). The main barrier in developing creativity is neglecting the brainstorms and considering it as a waste of time.

2.21.5 Convergent Teaching Practices

Mostly the teachers in the classroom stand in front of the class and communicate some factual information to the learners. The stereotype sharing of information blocks learners' creativity. The three-fourth of the total time in a class is devoted to instruction, where teacher has to speak all the time and learners are the passive receivers (Ronald, 2010).

2.21.6 Motivational Environment

The motivational environment of the class greatly influences the creativity of the learners. The teachers generally display the best work of the learners and never bother for the efforts of the learners. It is natural that some learners make their level best but could not achieve the desired objectives that consequently subject them to the anger of the teachers. The method of motivation normally used by the teachers might be beneficial for some individuals but it equally causes the reverse. Ronald (2010, p.456) summarizes the various research findings

that, "creativity generally flourishes under conditions that support intrinsic motivation ... and can suffer under conditions that stress extrinsic motivators".

2.21.7 Problem Hoarding

The elders should take the responsibilities in all most all the major situation in all the organization. They should go for the solution and shouldn't be sarcastic in a problematic situation, blaming their juniors. They generally point out the problems and seldom go for the plus point of their juniors. To point out the problems block the creativity of the individuals and they never go for any thing new for the solution of problems as well as for the development.

2.21.8 Students' Own Creativity-Related Beliefs

One of the important barriers to the development of creativity is the students' own creativity related beliefs. The students mostly consider that they are inefficient and therefore, do not take into account their creative imagination for their ability to create something new. They are sometime misled by the prevailing notions regarding creativity and the approaches towards it (Ronald, 2010).

2.21.9 Feeling of Being Not Creative

The feeling of being not creative is an important barrier to the development of one's creativity. Such a feeling is a result of lack of confidence in one's own abilities and capabilities. The feeling develops when the individual treated in a rough manner when he/she goes for new and innovative things instead of encouraging (Cowley, 2005).

2.21.10 Fear of Risk Taking

Creativity demands risks. The important barrier in the way of creativity is the fear of risk taking. The people fear risk taking just to avoid criticism from others in case of failure and even in the case of success but something new that are difficult to digest for them (Cowley, 2005). The fear of risk taking rests in the fear of unknown things a "new ideas aren't proven" that place people in odd situation (Monahan, 2002, p.217).

2.21.11 Lack of Experience

Creativity is contextual and requires background knowledge and experience. The lack of experience blocks the creative competencies of the individuals. The individuals can benefit from the experience of others as well. The exposure to the creative experiences of the past rarely happened sometime (Cowley, 2005).

2.21.12 Lack of Technique

One of the barriers in the way of development of creativity is the lack of technique. Students do not "have sufficient experience or knowledge of the relevant techniques and structures used in the different subject area" that consequently hamper the development of creativity of the learners (Cowley, 2005, p.11).

2.21.13 Over-Reliance on Techniques

The importance of techniques occupies it own place for the development of creativity, but over-reliance upon them prove detrimental in this regard as well. Cowley (2005, p.11) provides that "over-reliance on the techniques of a subject will stifle creativity", therefore, students should be given that much technique that help them in the development of their creativity rather than curb it.

2.21.14 Outsourcing Change

The innovations are deemed to be made by the highly professionals and the other find no association with it. The new ideas are most frequently happen at the base level, which are seldom paid attention. The avoidance of such new and innovative ideas is a barrier to the development of creativity in the individuals as they consider it useless in future (Sloane, 2006).

2.22 Related Research Studies

Various research studies have been carried out on reflective practice and creativity as Isshii & Miwa (2002) state that earlier research studies have highlighted the significance of mutual relationship between the intellectual and circumstantial operations process in the creative actions.

Educators enable learners to be competitive by improving their capacity of thinking and flourishing their feelings, their developing creativity through their special attention and new practice (Davis & Rimm, 2003).

Isshii & Miwa (2005, p.157) suggest that "the importance of increasing the opportunities for reflective activities and leading learners to apply their experiences to other creative activities in various domains" supports the idea that learners' response is the production of the environment that they are exposed to in order to develop intellectually and yield creatively (Cowan, 2004).

Critical inquiry stirs the mind of individuals and enhances their creativity. The questioning strategy enable the students to be innovative and creative so that to design methods for the solution of their queries and satisfy their frustrations (Taylor et al. 2008). This critical inquiry method is of great use in science education that prompted the learners to collect their data and draw their conclusion to a question arisen. The Science-Technology Society movement can apply the creativity and can pose question-strategy in the solution of local problem (Barrow, 2010).

The new situation generally arises to be a problem-ridden, due to its novelty. The exposure of individuals to reflective practice like problem solving enable them to be so creative that easily cope with any sort of such situation arise anywhere and at anytime. Murray (2004, p.9) provides that "The individual uses problem-finding and problem-solving strategies to generate solutions. Researching, consulting with other individuals, and experimenting using various techniques are some approaches that creative individuals use to alter their original ideas".

Similarly Murray & Lafrenz (2006) identify two reflective practices such brainstorming and team work as the main tools for developing creativity. They state quote respondents of a study saying that "brainstorming in made them creative...and...being in a team allowed them to combine their ideas and arrive at new solutions" (p.4). Mirzaie, et al, (2009, p.87) discuss brainstorming thus:

> This method provides suitable environment for free expression of ideas without any hesitation and criticism. These conditions intend to psychic security for learner. These situations cause to express new ideas with more details by learners. Therefore brainstorming teaching method affect creativity

> by elaboration item in Torrance's Test. On the other hand, at this state learners express their ideas without limit. With increasing number of learner's ideas, fluency as a one of creative thinking factors would be developed. Expression of more ideas will intend to produce suitable and more various ideas by doing science activities.

Collaborative learning is a widespread reflective practice and easily conducted across the globe. In collaborative learning, web-based interaction played a pivotal role, therefore, internet is considered as an ideal medium for it. It also emphasizes the learning environment for the overall development of the learners and stimulate their creativity in business (Cheng, 2011).

Eyadat & Eyadat (2010) provide that instructional technology greatly contribute to the learners' creativity in comparison to other traditional methods. Supporting the idea, Kesim (2009, p.86) states that "ICTs provide easy access to learning resources, individualized learning experiences and cover innovative learning tools and resources, which in turn enables lifelong learning. As such, infrastructure investments are further utilized through the development and initiation of lifelong learning. In this regard, innovation and change must be integral parts of education".

Perez-y-Perez & Sharples, 2004) explain the role of storytelling strategies in writing for the development of creativity among the individuals. They concentrated on the individuals involved with the computer programming, but their work has equal implication for the other fields.

2.23 Conceptual Framework of the Study

The review of literature enables the researcher in formulating concepts and developing understanding. The conceptual framework of this study developed on the basis of the available literature is as depicted in the figure 2.13 below, showing a relationship between reflective practices and creativity.

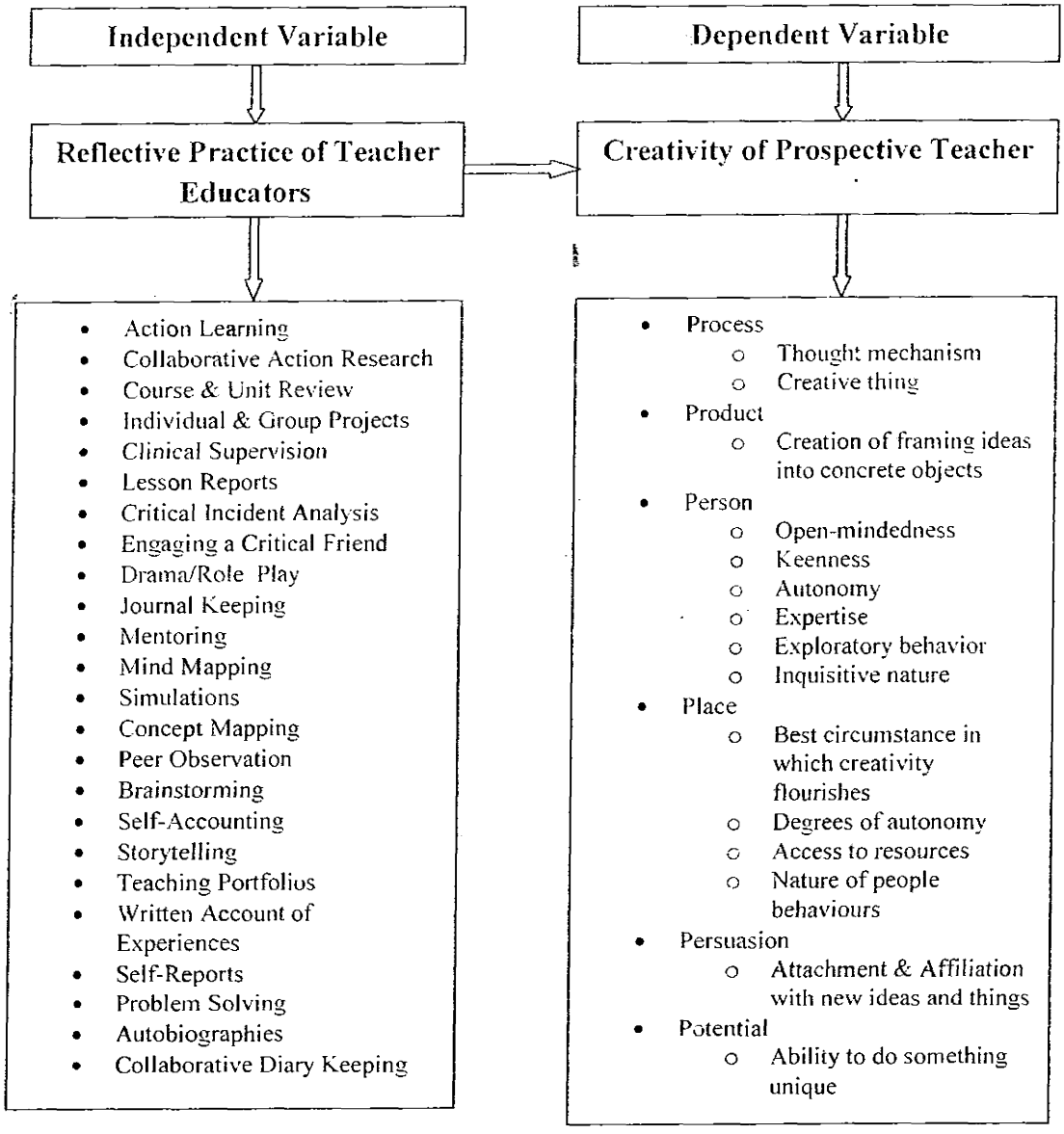

FIG. 2.13: Conceptual Framework of the Study

(Relationship between the Reflective Practice of Teacher Educators & Creativity of Prospective Teachers)

2.24 Summary of the Literature Review

The review of the available literature related to the study reveals that the concept of reflective practice was, though introduced by John Dewey on the onset of twentieth century, however, it has its roots in the works of ancient philosophers like Socrates, Plato and Aristotle. The study of literature shows that at all ages, reflective practice was used with different and specific nomenclature. Nonetheless, as an independent instructional strategy, reflective practice got attention among the academicians and practitioners of other applied fields in the last quarter of the previous century. Since then a number of research studies were carried out about the practice and its implications on various aspects of the academic performance in the various fields.

Reflective practice is an effective instructional strategy that is based on the practitioners' experiences. It provides for the utilization of known in a situation that is novel and unknown or abstract. It can be made during or after the activity or instruction as Schon states, but before the activity it would be more result oriented and productive as compare to the earlier ones. The practitioners can use either of the modes of reflection such as contextual, dispositional or experiential, according to the situation.

For the benefit and ease of the practitioners, different models of reflective practice are available. The different forms and types of reflective practice can be helpful to the practitioner in order to practice reflective activities. They may include, active learning, action research, collaborative learning, team teaching, micro teaching, storytelling, unit review, course review, programme review, brainstorming, blogging, individual and group projects, critical incident analysis, clinical supervision, lesson report, and many more.

Reflective practice is an evidence-based inquiry that is meant for the attainment of aims and strives for outcomes through judgment and insight takes place in a cyclic process. It demands collaboration, cooperation, responsibility, wholeheartedness, open-mindedness and creative mediation from the practitioners. It provides thinking opportunity to the practitioners in a new situation, whenever arise.

Creativity is generated and flourished though various means, if desired so. It is ability, an attitude, a habit and a process of doing things in a different and innovative way. It is looked upon in different manners, such as process, product, person, place, persuasion, and potential. It is intangible, and can only be recognized by the characteristics a person possesses, when s/he is creative. These include ability to solve problem, curiosity, humour, fluency, tolerance, flexibility, open-mindedness, imaginative, witty, positivity, adventurous, risk-taking, optimism and reflectivity.

Creativity, as can be developed by different means, similarly has adversely affected by many factors. These factors include undue criticism, product bias, neglecting brainstorming, convergent practices, negative attitude, lack of motivational environment, problem hoarding, person's feelings about creativity, fear, lack of experience, lack techniques, over-reliance on techniques and outsourcing change.

The conceptual framework of the study provides for the close inter dependence of the reflective practice and creativity as it is shown that 'creativity mediation' is required for reflective practitioners and on the other hand 'reflectivity' is one of the characteristics of the creative individual.

CHAPTER 3

RESEARCH METHODOLOGY

The purpose of the study was to find out the relationship between the reflective practice of teacher educators and the creativity of prospective teachers. Research methods and procedures that were adopted in the study discussed in the following lines.

3.1 Research Design

The study was a survey by design and correlational by purpose. It was designed to find out the prevailing reflective practices of the teacher educators. It aimed at to find out a relationship between the reflective practice of teacher educators and creativity of prospective teachers for their professional development.

3.2 Population of the Study

Population of the study comprised of the prospective teachers enrolled in Bachelor of Education (B. Ed.) programme of session 2010-11 in the Departments/Institutes of Education in universities of Khyber Pakhtunkhwa Province of Pakistan. As the B.Ed. programme is one-year programme, therefore, those students were included in the study who were studying in their second (final) semester where semester system in vogue; however, no such specification was possible in the annual system programme. There were eleven universities in the province; one university namely Shaheed Benazir Bhutto Women University (earlier Frontier Women University), Peshawar was excluded due to having only female prospective teachers. Among the rest of the universities, two universities have no Department of Education, and the two universities have the Department of Education but have no B. Ed. Programme. Hence the population consisted of the prospective teachers enrolled in six universities. The university-wise population breakup is given in Table 3.1.

Table 3.1

University-wise Population Breakup

Universities	Prospective Teachers (B.Ed. Students)
University of Peshawar	253
Gomal University, D.I. Khan	127
Hazara University Mansehra	68
University of Malakand	24
University of Science & Technology, Bunnu	15
Abdul Wali Khan University, Mardan	25
Total	**512**

3.3 Sample of the Study

The sample size for the purpose of study selected through Proportionate Random Sampling Technique. The total sample size was chosen as 220, following the technique presented by Krejcie & Morgan (1970, p.608), which is also adopted by L. R. Gay (2005). As the chosen sample size constitutes almost 43% of the total population, so the proportionate selection of the sample size from individual university was 43% of its total population. The relative proportionate sample of the universities is given below in table 3.2.

Table 3.2:

University-wise proportionate sample size

Universities	Population	Proportionate Sample Size @ 43 %
University of Peshawar	253	109
Gomal University, D.I. Khan	127	55
Hazara University Mansehra	68	29
University of Malakand, Chakdara (Lower Dir)	24	10
University of Science & Technology, Bunnu	15	06
Abdul Wali Khan University, Mardan	25	11
Total	**512**	**220**

3.4 Research Instruments

Two questionnaires were developed for the purpose of data collection.

1. A tailor-made questionnaire was used for identifying the forms of reflective practices practiced by teacher educators and their frequencies.

2. A custom-made questionnaire was used for calculating the creativity quotient (CQ) of the prospective teachers. The questionnaire is a quiz adopted from www.quizmoz.com/quizzes/personality-Test/c/Creativity-Quotint-Test.asp. The publisher encourages using the quiz as the site states, "Go ahead and find out what you know about yourself and the world around you" (www.quizmoz.com/quizzes/personality-Test/c/Creativity-Quotint-Test.asp, para 1).

3.5 Construct of Questionnaire for measuring Creativity Quotient

The questionnaire for measuring creativity quotient (CQ) was consisted of 25 items, which cover all the six aspects of creativity namely process, product, person, place, persuasion and potential. The division of items under each aspect of creativity is given in table 3.3:

Table 3.3

Division of Items under the Aspects of Creativity

Item #	Aspect of Creativity	Item #	Aspect of Creativity	Item #	Aspect of Creativity
1	Persuasion	10	Place	19	Potential
2	Product	11	Process	20	Product
3	Process	12	Place	21	Product
4	Process	13	Place	22	Potential
5	Persuasion	14	Person	23	Person
6	Person	15	Product	24	Person
7	Potential	16	Persuasio	25	Potential
8	Potential	17	Place		
9	Persuasion	18	Place		

3.6 Scoring of the Research Instruments

The instruments were scored by assigning each option a particular score ranging from 0 to 4 for finding out the relationship between the reflective practice of teacher educators and creativity of prospective teachers. Each item has five options such as "completely true", "mostly true", "may be true or false", "mostly false" and "completely false". These options were scored in the way that 4 points were assigned to option "completely true", 3 points were assigned to option "mostly true", 2 points were assigned to option "may be true or false", 1 point was assigned to option "mostly false" and 0 point was assigned to "completely false".

3.7 Validity and Reliability of the Instruments

The instruments were administered for validity and reliability tests to the students of B.Ed. of Fall 2010 at the female campus of International Islamic University, Islamabad. The instruments were improved on the basis of pilot study (see Appendix – C). Cronbach's α (alpha) was calculated to measure the internal consistency of the tool for reflective practice. The value of α for the tailor-made questionnaire, identifying the types and frequency of the teacher educators was calculated as 0.82 whereas the value of α for the custom made questionnaire, measuring the Creativity Quotient (CQ) was calculated as 0.87. The face validity of the tool was established on the basis of the pilot study and with consultation of teachers of the Department of Education, International Islamic University, Islamabad. The wording was simplified and made easy to make it understandable by the respondents.

3.8 Data Collection

The data was collected by the researcher personally administering the instruments in some universities while the instruments was sent to the other universities for administration through mail due to variety of reasons such as security situation of the area, time and resources, etc. The raw scores were listed in appendix – D.

3.9 Data Analysis

Both the univariate and bivariate data were analyzed, tabulated and interpreted for the general readers. The univariate data were analyzed through percentage, while the bivariate data were analyzed through the application of Pearson Product Moment Correlation Method.

CHAPTER 4

PRESENTATION & ANALYSIS OF DATA

The data was collected from the randomly selected sample of respondents and analyzed, tabulated and interpreted for the understanding of readers. The data analysis has made in two parts:

4.1 Analysis of Univariate Data

4.2 Analysis of Bivariate Data

4.1 Analysis of Univariate Data

The analysis of univariate data is aimed at to identify the use and frequency of different forms of reflective practice used by teacher educators during their instruction.

Table 4.1

Conducting Learning Activities

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	76	72	24	06	03
Percentage	41.99	39.78	13.26	3.31	1.66

Table 4.1 shows that 41.99% of the prospective teachers viewed that teacher educators often conduct various learning activities during their instruction. Whereas 39.78% prospective teachers consider that teacher educators undertake learning activities mostly during their instruction and 13.26% considers that learning activities are arranged sometime by the teacher educators. Very meager number of prospective teachers (1.66%) view that teachers educators avoids learning activities during their instruction.

Table 4.2

Summarizing the Units

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	71	51	42	10	07
Percentage	39.23	28.18	23.20	5.52	3.87

Table 4.2 reveals that 39.23% prospective teachers consider that teacher educators often summarize the unit at the end, while 28.18% view that teacher educators go for it mostly. The 23.20% prospective teachers believe that teacher educators sometime do unit review whereas 5.52% think that they rarely do it.

Table 4.3

Reviewing the Course

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	00	58	81	26	16
Percentage	0.00	32.04	44.75	14.36	8.84

Table 4.3 depicts that 32.04% prospective teachers believe that teacher educators mostly do course review whereas 44.75% consider that teacher educators do it sometime. However, 14.36% prospective teachers view that teachers rarely go for course review and 8.84% suppose that teacher educators do not undertake course review at all.

Table 4.4

Narrating Stories

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	50	62	39	14	16
Percentage	27.62	34.25	21.55	7.73	8.84

Table 4.4 reveals that 27.62% prospective teachers consider that teacher educators are often relying on storytelling during their instruction whereas 34.25% believe that they mostly resort to the storytelling method in their instruction. However, 21.55% prospective teachers consider that teacher educators sometime go for storytelling to make the concept understand for their learners and only 7.73% suppose that teacher educators never opt for storytelling during their instruction.

Table 4.5

Journal Keeping by Teacher

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	00	52	88	29	12
Percentage	0.00	28.73	48.62	16.02	6.63

Table 4.5 indicates that teacher educators never record all the activities, however, 28.73% prospective teachers consider that teacher educators mostly keep records of their activities that are taking place and have taken place in the class. The 48.62% view that teacher educators keep the journal of the activities sometime whereas 16.02% believe that teachers rarely keep the record of the classroom activities. 6.63% prospective teachers consider that teacher educators never keep the record of their activities.

Table 4.6

Journal Keeping by Students

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	00	65	87	29	00
Percentage	0.00	35.91	48.07	16.02	0.00

Table 4.6 shows that none of the teacher ask the students to keep journals. However, 35.91% prospective teachers consider that teachers mostly ask the students to keep journals to record the activities, whereas, 48.07% consider that the teacher educators ask students to maintain journals sometimes. The 16.02% prospective teachers believe that teachers rarely ask student to keep the journal.

Table 4.7

Conducting Group Work

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	51	59	41	25	05
Percentage	28.18	32.60	22.65	13.81	2.76

Table 4.7 reveals that 28.18% prospective teachers consider that teacher educators always conduct group work/assignments. However, 32.60% view that teacher educators mostly do assign work in groups whereas 22.65% prospective teachers believe that teacher educators opt for group project/assignments sometime. The 13.81% prospective teachers feel that teachers rarely resort to group assignments while 2.76% believe that teachers do not go for group tasks.

Table 4.8

Supervising Group Work

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	86	49	32	06	08
Percentage	47.51	27.07	17.68	3.31	4.42

Table 4.8 indicates that 47.51% prospective teachers view that teacher educators always monitor and guide the group activities of the learners, while 27.07% consider that teachers mostly perform their mentoring role in the group tasks. The 17.68% prospective teachers believe that teachers supervise group work of the learners sometime, while 3.31% consider that teacher educators rarely monitor and guide the group activities. The 4.42% prospective teachers believe that teacher educators never monitor the group activities.

Table 4.9

Students Peers Observation

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	39	70	50	13	09
Percentage	21.55	38.67	27.62	7.18	4.97

Table 4.9 tells that 21.55% prospective teachers consider that teacher educators completely allow learners to check their fellows' work whereas 38.67% view that teachers mostly allow the learners to do so. The 27.62% of prospective teacher believe that teacher educators allow learners to observer their fellows' work sometime while 7.18% think that teachers very rarely go for it.

Table 4.10

Brainstorming by Asking Questions

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	60	71	38	08	04
Percentage	33.15	39.23	20.99	4.50	2.21

Table 4.10 reveals that 33.15% prospective teachers believe that teacher educators always start the new topic by asking questions, while 39.23% view that teachers do it mostly during their instruction. The 20.99% prospective teachers consider that teacher educators do the practice of asking questions at the start of new topic sometime. A very little number of teachers (4.50%) rarely go for such brainstorming techniques either considering it useless, or due to time constrains.

Table 4.11

Brainstorming by Leaving Query/Questions

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	32	42	61	25	21
Percentage	17.68	23.20	33.70	13.81	11.60

Table 4.11 shows that 17.68% prospective teachers opine that teacher educators often end their discussion on a topic leaving a query for the learners to find it out, while 23.20% believe that teachers mostly do the practice. The 33.70% prospective teachers believe that teacher educators put a question at the end and require the learner to find out the answer sometime and 13.81% believe that teachers rarely go for creating a situation for their learners where they go for the solution of a query.

Table 4.12

Engaging other teachers in the classroom activities

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	04	66	71	33	07
Percentage	2.21	36.46	39.23	18.23	3.87

Table 4.12 tells that only 2.21% prospective teachers consider that teacher educators always engage a critical friend/colleague in the classroom activities but 36.46% believe that teachers mostly go for this option during their instruction. The 39.23% prospective teachers express that teachers do engage their critical friends/colleagues in their classroom activities sometime, while 18.23% believe that teachers rarely engage others in the classroom activities. However, 3.87% prospective teachers opine that teachers never want to engage anyone in the classroom activities. Engaging friends in the classroom activities or even consulting them anyway for the improvement of learning depends on the teachers' own nature. Some people do not want anyone to be involve in their activities and even they do tolerate any sort of interference by others, while on contrary, others also seeks the advice and suggestion of other people like friends and colleagues.

Table 4.13

Students Mind Mapping

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	62	49	48	11	11
Percentage	34.25	27.07	26.52	6.08	6.08

Table 4.13 shows that 34.25% prospective teachers consider that teacher educators always engage learners in mind mapping whereas 27.07% believe that teachers mostly go for mind mapping during their instruction. However, 26.52% prospective teachers believe that teachers do it sometime and 6.08% think that teacher educators rarely practice mind mapping. The 6.08% of prospective teachers believe that teachers do not go for concept mapping. The concept mapping requires background knowledge of the individuals and also consume time, therefore, some teachers do not engage in this activity due to time constraints.

Table 4.14

Students' Activities of Problem Solving

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	45	59	53	16	08
Percentage	24.86	32.60	29.28	8.84	4.42

Table 4.14 indicates that 24.86% prospective teachers believe that teacher educators often adopt problem solving methods during their instruction, while 32.60% consider that teachers mostly go for it. The 29.28% prospective teachers opine that teacher educators resort to problem solving sometime. However, 8.84% prospective teachers reveal that teachers rarely do it.

Table 4.15

Teachers' Self-Accountability

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	51	66	47	11	06
Percentage	28.18	36.46	25.97	6.08	3.31

Table 4.15 tells that 28.18% prospective teachers opine that teacher educators perform self-accountability during instruction completely and let their learners to know the mistakes committed earlier during the instruction whereas 36.46% believe that teachers do it mostly. The 25.97% prospective teachers believe that teacher educators go for self-accounting sometime during their instruction while 6.08% consider that teachers rarely go for self-accounting.

Table 4.16

Students' Individual Writing Assignment

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	51	68	42	12	08
Percentage	28.18	37.57	23.20	6.63	4.42

Table 4.16 reveals that 28.18% prospective teachers consider that teacher educators frequently involve learners in individual writing assignments whereas 37.57% believe that teachers mostly go for individual assignments in the classroom. The 23.20% prospective teachers think that teacher educators put learners in individual writing assignments sometime. However, 6.63% prospective teachers believe that teachers rarely go for it during instruction and only 4.42% teachers do involve learners in any sort of individual assignments. Writing assignments/projects serve many purposes during instruction like hard work on the part of learners, develop writing skills, enabling individual learners to organize thoughts into a compact and concise piece of writing, and above all develop study habits among the learners.

Table 4.17

Students' Self Report

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	37	56	58	23	07
Percentage	20.44	30.94	32.04	12.71	3.87

Table 4.17 tells that 20.44% prospective teachers believe that teacher educators made by all means the learners to write self-reports regarding different things what the learners thought interesting and mention-worthy. The 30.94% prospective teachers opine that teachers offer the opportunity mostly and 32.04% teachers for it sometime in the class. However, 12.71% consider that teacher educators rarely ask for self-report and 3.87% prospective teachers believe that teachers never ask for such things to the learners in the classroom.

Table 4.18

Students' Written Account of Life Experience

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	00	72	82	24	03
Percentage	0.00	39.78	45.30	13.26	1.66

Table 4.18 shows that 39.78% prospective teachers believe that teacher educators mostly ask their learners to write a written account of their experiences while 45.30% consider that teachers do the practice sometime. The 13.26% prospective teachers opine that teachers do ask the students to write an account of their experiences rarely. Written account of experiences unveils the past of individuals and provides stuff for the future activities not only to the individuals concerned but also to other people as well.

Table 4.19

Students' Classroom Presentations

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	69	54	40	12	06
Percentage	38.12	29.83	22.10	6.63	3.31

Table 4.19 tells that 38.12% prospective teachers deem that teacher educators often want the learners to have presentation in the classroom whereas 29.83% teachers mostly ask learners for presentation. However, 22.10% prospective teachers believe that teacher educators go for students' presentation sometime, while 6.63% consider that teachers resort to it rarely and 3.31% believe that teachers never go for it altogether.

Table 4.20

Students' Critical Enquiry

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	65	63	38	09	06
Percentage	35.91	34.81	20.99	4.97	3.31

Table 4.20 reveals that 35.91% prospective teachers consider that teacher educators always encourage the learners to ask critical question during their instruction, while 34.81% teachers mostly encourage it. The 20.99% prospective teachers believe that teacher educators allow the learners to ask question sometime. However, 4.97% prospective teachers opine that teachers reluctantly allow the learners for asking question while 3.31% think that teachers do not allow any question at all during instruction.

Table 4.21

Reinforcement by Teachers

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	50	60	55	13	03
Percentage	27.62	33.15	30.39	7.18	1.66

Table 4.21 reveals that 27.62% prospective teachers think that teacher educators frequently reinforce the learners' views and comments, whereas 33.15% believe that teachers mostly reinforce learners' contributions. However, 30.39% prospective teachers believe that teachers do the practice sometimes during their instruction. A negligible number of prospective teachers consider that teachers either rarely (7.18%) go for it or never (1.66%) reinforce the learners' responses.

Table 4.22

Teachers' solving of instructional problems

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	00	67	79	27	08
Percentage	0.00	37.02	43.65	14.92	4.42

Table 4.22 depicts that not a single prospective teacher provides that the teacher educators solve the instructional problem completely. However, 43.65% prospective teachers consider that the teacher educators mostly address the root causes of instructional problems, whereas, 43.65% view that teacher educators go for action research sometime during their instruction. But 14.92% prospective teachers consider that teacher educators mostly do not solve the instructional problems. A small section of prospective teachers (4.42%) consider that teacher educator never address the root causes of instructional problems.

Table 4.23

Teachers' Collaborative Efforts for Solving Instructional Problems

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	51	53	50	13	14
Percentage	28.18	29.28	27.62	7.18	7.73

Table 4.23 illustrates that 28.18% prospective teachers believe that teacher educators always go for collegial inquiry, whereas, 29.28% consider that teacher educators mostly go for it. The 27.62% prospective teachers opine that teachers sometime engage other colleagues to solve instructional problems while 7.18% view that teachers rarely resort to it. However, 7.73% prospective teachers think that teacher educators do not conduct collegial Inquiry altogether.

Table 4.24

Use of Audio-Video Aids during Instruction

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	50	62	46	19	04
Percentage	27.62	34.25	25.41	10.50	2.21

Table 4.24 tells that 27.62% prospective teachers observe that teacher educators always rely on audio-visual aids for the clarification of concepts during instruction whereas 34.25% consider that teachers do the practice mostly. However, 25.41% prospective teachers believe that teachers sometime use audio-visual aids while 10.50% think that teachers rarely use it and 2.21% consider that teacher educators never use the audio-visual aids.

Table 4.25

Use of Real Life Examples by the Teachers

No. of Respondents (N)	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
181	80	60	29	07	05
Percentage	44.20	33.15	16.02	3.87	2.76

Table 4.25 shows that 44.20% prospective teachers opine that teachers always use daily life real example while explaining the concepts in the classroom, while 33.15% believe that teachers mostly do it. The 16.02% prospective teachers think that teacher educators go for it sometime. However, 3.87% consider that teachers rarely refer to daily life examples during instruction and 2.76% teacher educators never use examples in their instructions. Reference to the daily life real example main depends on the teachers' insight, capacity and sharpness of mind, association ability, etc.

Table 4.26

Creativity quotient of prospective teachers at the University of Peshawar

N	Total CQ	Average CQ
89	6294	70.72

Table 4.26 shows that the total value of creativity quotient for 89 prospective teachers at the University of Peshawar was 6294. The average creativity quotient was thus 70.72, which shows high creativity level of the prospective teachers.

Table 4.27

Creativity quotient of prospective teachers at Hazara University, Mansehra

N	Total CQ	Average CQ
29	2102	72.48

Table 4.27 shows that the total value of creativity quotient for 29 prospective teachers at Hazara University, Mansehra was 2102. The average creativity quotient is thus 72.48, which shows high creativity level of the prospective teachers.

Table 4.28

Creativity quotient of prospective teachers at University of Malakand, Chakdara (Dir Lower)

N	Total CQ	Average CQ
07	515	73.57

Table 4.28 shows that the total value of creativity quotient for 07 prospective teachers at University of Malakand, Chakdara (Dir Lower) was 515. The average creativity quotient is thus 73.57, which shows high creativity level of the prospective teachers.

Table 4.29

Creativity quotient of prospective teachers at University of Science & Technology, Bunnu

N	Total CQ	Average CQ
05	400	80.00

Table 4.29 shows that the total value of creativity quotient for 05 prospective teachers at University of Science & Technology, Bunnu was 400. The average creativity quotient is thus 80.00, which shows high creativity level of the prospective teachers.

Table 4.30

Creativity quotient of prospective teachers at Gomal University, D. I. Khan

N	Total CQ	Average CQ
43	2777	64.58

Table 4.30 shows that the total value of creativity quotient for 43 prospective teachers at Gomal University, D. I. Khan was 2777. The average creativity quotient is thus 64.58, which shows high creativity level of the prospective teachers.

Table 4.31

Creativity quotient of prospective teachers at Abdul Wali Khan University, Mardan

N	Total CQ	Average CQ
08	597	74.62

Table 4.31 shows that the total value of creativity quotient for 08 prospective teachers at Abdul Wali Khan University, Mardan was 597. The average creativity quotient is thus 74.62, which shows high creativity level of the prospective teachers.

Table 4.32

Creativity quotient of prospective teachers of all universities of Khyber Pakhtunkhwa

N	Total CQ	Average CQ
181	12685	70.08

Table 4.32 shows that the total value of creativity quotient for 181 prospective teachers at the universities of Khyber Pakhtunkhwa was 12685. The average creativity quotient is thus 70.08, which shows high creativity level of the prospective teachers.

4.2 Analysis of Bivariate Data

The bivariate data analysis is aimed at to find out the relationship between the reflective practice of teacher educators' and creativity of prospective teachers (B.Ed. Students).

Table 4.33

Relationship of Reflective Practice (X) and Creativity (Y) at University of Peshawar

N	ΣX	ΣY	ΣXY	ΣX^2	ΣY^2	$(\Sigma X)^2$	$(\Sigma Y)^2$
89	5670	6294	402024	363142	448658	32148900	39614436

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = 0.40097346$$

$r = 0.205 \quad @\alpha = 0.05$

Table 4.33 shows that the Pearson product-moment correlation coefficient for University of Peshawar is 0.40097346, which is greater than the table value of "r", which was 0.205 at 0.05 level of significance, hence the relationship between reflective practice of teacher educators and creativity of the prospective teachers at the University of Peshawar is positive and significant.

Table 4.34

Relationship of Reflective Practice (X) and Creativity (Y) at Hazara University Mansehra

N	ΣX	ΣY	ΣXY	ΣX^2	ΣY^2	$(\Sigma X)^2$	$(\Sigma Y)^2$
29	2094	2102	152413	152346	153638	4384836	4418404

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = 0.52399471$$

$r_{tab} = 0.3493 \qquad @\alpha = 0.05$

Table 4.34 indicates that the Pearson product-moment correlation coefficient for Hazara University Mansehra is 0.52399471 that is greater than the table value of "r", which was 0.3493 at 0.05 level of significance, hence the relationship between reflective practice of teacher educators and creativity of the prospective teachers at the Hazara University Mansehra is positive and significant.

Table 4.35

Relationship of Reflective Practice (X) and Creativity (Y) at University of Malakand, Chakdara (Dir Lower)

N	ΣX	ΣY	ΣXY	ΣX^2	ΣY^2	$(\Sigma X)^2$	$(\Sigma Y)^2$
07	490	515	36207	34480	38077	240100	265225

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = 0.85411183$$

$r = 0.7545 \qquad @\alpha = 0.05$

Table 4.35 indicates that the Pearson product-moment correlation coefficient for University of Malakand, Chakdara (Dir Lower)is 0.85411183 that is greater than the table value of "r", which was 0.7545 at 0.05 level of significance, hence the relationship between reflective practice of teacher educators and creativity of the prospective teachers at the University of Malakand, Chakdara (Dir Lower), Bannu is positive, strong and significant.

Table 4.36

Relationship of Reflective Practice (X) and Creativity (Y) at University of Science & Technology, Bannu

N	ΣX	ΣY	ΣXY	ΣX^2	ΣY^2	$(\Sigma X)^2$	$(\Sigma Y)^2$
05	367	400	29374	26955	32012	134689	160000

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = 0.97448058$$

$$r = 0.8783 \qquad @\,\alpha = 0.05$$

Table 4.36 indicates that the Pearson product-moment correlation coefficient for University of Science and Technology, Bannu is 0.97448058 that is greater than the table value of "r", which was 0.8783 at 0.05 level of significance, hence the relationship between reflective practice of teacher educators and creativity of the prospective teachers at the University of Science and Technology, Bannu is positive, strong and significant.

Table 4.37

Relationship of Reflective Practice (X) and Creativity (Y) at Gomal University, D. I. Khan

N	ΣX	ΣY	ΣXY	ΣX^2	ΣY^2	$(\Sigma X)^2$	$(\Sigma Y)^2$
43	2725	2777	177635	175747	182353	7425625	7711729

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = 0.54403733$$

$$r = 0.2875 \qquad @\alpha = 0.05$$

Table 4.37 indicates that the Pearson product-moment correlation coefficient for Gomal University, D. I. Khan is 0.54403733 that is greater than the table value of "r", which was 0.2875 at 0.05 level of significance, hence the relationship between reflective practice of teacher educators and creativity of the prospective teachers at the Gomal University, D. I. Khan is positive, strong, and significant.

Table 4.38

Relationship of Reflective Practice (X) and Creativity (Y) at Abdul Wali Khan University, Mardan

N	ΣX	ΣY	ΣXY	ΣX^2	ΣY^2	$(\Sigma X)^2$	$(\Sigma Y)^2$
08	555	597	41454	38545	44597	308025	356409

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = 0.84703433$$

$r = 0.7067 \qquad @\alpha = 0.05$

Table 4.38 indicates that the Pearson product-moment correlation coefficient for Abdul Wali Khan University, Mardan is 0.84703433 that is greater than the table value of "r", which was 0.7067 at 0.05 level of significance, hence the relationship between reflective practice of teacher educators and creativity of the prospective teachers at the Abdul Wali Khan University, Mardan is positive, strong and significant.

Table 4.39

Cumulative Relationship of Reflective Practice (X) and Creativity (Y) at Universities in Khyber Pakhtunkhwa

N	ΣX	ΣY	ΣXY	ΣX^2	ΣY^2	$(\Sigma X)^2$	$(\Sigma Y)^2$
181	11898	12685	838906	790828	899335	141562404	160909225

$$r = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

$$r = 0.53318639$$

$r = 0.1946 \qquad @\alpha = 0.05$

Table 4.39 indicates that the Pearson product-moment correlation coefficient for cumulative relationship for the universities in Khyber Pakhtunkhwa is 0.53318639 that is greater than the table value of "r", which was 0.1946 at 0.05 level of significance, hence the cumulative relationship between reflective practice of teacher educators and creativity of the prospective teachers for the universities in Khyber Pakhtunkhwa is positive, strong and significant.

4.3 Summary of the Data

The data is summarized for the understanding of the readers in the following table.

Table 4.40

Summary of Relationship between Reflective Practice (X) and Creativity (Y)

No.	University	N	Calculated value of "r"	Table value of "r"	Result
1	University of Peshawar	89	0.40	0.20	Positive & significant
2	Hazara University, Mansehra	29	0.52	0.35	Positive & significant
3	University of Malakand	07	0.85	0.75	Positive, strong & significant
4	University of Science & Technology, Bannu	05	0.97	0.87	Positive, strong & significant
5	Gomal University, D. I. Khan	43	0.54	0.29	Positive, & significant
6	Abdul Wali Khan University, Mardan	08	0.85	0.77	Positive, strong & significant
7	Cumulative Relationship	181	0.53	0.19	Positive & significant

The reflective practice focuses on aims and outcomes, evidence-based inquiry, judgment and insight. It is a cyclic process that repeats again and again. It demands

responsibility, collaborative, cooperative, relativity, whole-heartedness, open-mindedness, and creative mediation on the part of practitioners.

Similarly the characteristics of creative people are ability of problem solving, curiosity, humour, fluency, responsibility, tolerance, flexibility, open-mindedness, imaginative, wit, positivity, adventurous, risk-taking, optimism, and reflectivity.

The characteristics of reflective practitioners are compatible with those of creative people such as collaboration, cooperation and relativity demands tolerance, flexibility, and the ability of problem solving. Both are aught to be open-minded and responsible. In nutshell, the reflective practitioner must have practice creative mediation and on the other hand creative person is required to be reflective.

4.4 Discussion on the Results

Reflective practice focuses on aims and outcomes, evidence-based inquiry, judgment and insight. It is a cyclic process that repeats again and again. It demands responsibility, collaborative, cooperative, relativity, whole-heartedness, open-mindedness, and creative mediation on the part of practitioners. Similarly the characteristics of creative people are ability of problem solving, curiosity, humour, fluency, responsibility, tolerance, flexibility, open-mindedness, imaginative, wit, positivity, adventurous, risk-taking, optimism, and reflectivity.

The earlier studies and literature strongly support the study findings and endorse the direct relationship between reflective practice and creativity.

The relationship between reflective practice and creativity is positive as the calculated "r" is 0.53318639, which is greater from the table value of "r" that is 0.1946 at 0.05 level of significance. The studies conducted by Davis & Rimm, (2003); Cowan (2004) and Isshii & Miwa (2005) are in support of the study that educator reflective practice has positive effects on the development of creativity in learners.

Critical inquiry as an effective reflective practice at the disposal of educator plays an immense role in the development of innovation and creativity and more than 70% prospective teachers consider that teacher educators frequently use it during their instruction. Taylor et al, (2008) and Barrow (2010) endorse that it is an effective tool for satisfying the learners' frustration.

Another frequently used reflective practice is problem solving strategy as 57.46% prospective teachers believe that teacher educators utilize the strategy during their instruction. Its practice enables the learners to cope with the new situation and find solution to the problems by their own. Murray (2004) maintains that problem-finding and problem-solving enables the individuals to find out solution to the problems instigating their creative faculties of mind.

Brainstorming techniques are most frequently used strategies of reflective practice adopted by the educators and other practitioners. The 72.38% prospective teachers view that their teachers use brainstorming during their instruction as a regular strategy. Murray &

Lafrenz (2006) and Mirzaie et al. (2009) consider brainstorming an effective tool for developing creativity among the learners.

Similarly collaborative learning activities are equally contributing towards the fostering of creativity. Among the prospective teachers, 60.78% consider that teacher educators conduct group work to ensure learners' understanding. Murray & Lafrenz (2006) reports that the participant of the experimental study, that he had conducted, provides that they can better yield in the team work instead of individual tasks as the team member combine their ideas for the solution of new situation. Cheng (2011) provides that the environment for collaborative learning activities is very much important and a conducive, innovative and well-to-do environment stimulate learners' creativity.

Students' self report about their development and performance is an effective reflective practice that generally teacher' trainers use during their instruction. The study finding reveals that 51.38% prospective teachers view that their teachers ask them to write about their own experiences, development and performances. Schwarz, (1999) studied self-reports provides the opportunity for the students to more imaginative, innovative and productive.

Storytelling is the most interesting and attention-drawn and economical strategy that teachers generally adopt for making their abstract concepts more clear and understandable to their learners. The 61.87% of the prospective teachers consider that their teachers frequently use stories for making their points clear and understandable. Perez-y-Perez & Sharples, 2004) explain that how the storytelling strategies work in the development of creativity.

Their work is primarily in computer field: however, it has an equal importance in other applied fields especial the teacher training programmes.

Audio-Visual (A.V) Aids are considered indispensible for the effective instruction programme. However, they are also very much important for the fostering of creativity in the learners. In this study, 61.87% prospective teachers consider that teacher educators use A.V Aids for making their instruction effective and productive. Eyadat & Eyadat (2010) contends that modern innovative instructional technology is more effective for development of creativity among the learner than the traditional ways of teaching. Similarly, Kesim (2009) argues that ICTs offer affordable learning resources that can be utilize for the development of individual for the lifelong learning (i.e creativity).

In nutshell, it can be concluded that reflective practice not only makes the instructional programme more effective, but equally develop individuals for the practical life. The preparation for future practical life requires a good deal of creativity on the part of individuals as the life is not what they have lead so far, rather new situations will arise, new problems will take place in the way of life, which will need due attention and proper handling.

CHAPTER 5

SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study was designed to highlight the reflective practice of teacher educators, and then to find out its relationship with the creativity of the prospective teachers. The study was carried out for these objectives (1) To identify the types of reflective practice of teacher educators; (2) To identify the frequency of reflective practice of teacher educators; (3) To determine the creativity level of the prospective teachers; and (4) To find out the relationship of reflective practices of teacher educators with creativity of prospective teachers.

The study was descriptive survey by method and correlational by purpose. The universe of the study was the B.Ed Students in the six public sector universities of Khyber Pakhtunkhwa province, numbering 512 constituted the population for the study. A sample of

220 B.Ed. students, selected through proportionate random sampling technique, was used for the collection of data.

The data was collected through questionnaires. Two questionnaires were designed for the collection of data; one questionnaire was tailor-made while the other was custom-made. The custom-made questionnaire was used for measuring the creativity quotient while tailor-made questionnaire was used for identifying the reflective practice of teachers and their frequency.

5.2 Findings of the Study

The findings of the study are divided in three parts, as present below:

5.2.1 Type and Frequency of Reflective Practice

The findings concerning the types and frequency of reflective practice were as follows:

1. The 41.99% prospective teachers reported that learning activities are used by the teacher educators most often whereas 39.78% view that they carry out learning activities mostly during their instruction. (Table No. 4.1)

2. The 39.23% prospective teachers believe that the unit review is frequently made by their teachers while 28.18% think that teacher educators go for it mostly and 23.20% consider that the teacher educators do unit review sometime while 5.52% think that they rarely do it. (Table No. 4.2)

3. The 32.04% prospective teachers consider that the review of course at the end is mostly done by the teacher educators whereas 44.75% prospective teachers view that their teachers do it sometime and 14.36% consider that teachers rarely go for course review. (Table No. 4.3)

4. The 27.62% prospective teachers consider that storytelling is usually used by their teachers for making their teaching effective whereas 34.25% believe that teacher educators do it mostly during their instruction and 21.55% view that teacher educators sometime use storytelling to make the concept understandable for their learners. (Table No. 4.4)

5. The 28.73% prospective teachers believe that teacher educators mostly keep records of the classroom activities and 48.62% consider that teacher educators keep the journal of the activities sometime. (Table No. 4.5)

6. The 35.91% prospective teachers deem that teachers mostly ask the students to keep record (journal) of the classroom activities, while 48.07% consider that students sometimes asked to maintain journals and 16.02% believe that teachers rarely ask the students to maintain the journal. (Table No. 4.6)

7. The 28.18% prospective teachers think that Group works/assignments are always given by teacher educators. The 32.60% prospective teachers consider that teacher educators mostly assign work in groups whereas 22.65% view that teacher educators sometime opt for group project/assignments. (Table No. 4.7)

8. The 47.51% prospective teachers consider that their teachers completely monitor and guide the group-activities of the learners while 27.07% believe that teachers mostly perform their mentoring role in the group tasks. (Table No. 4.8)

9. Learners are completely allowed to check their fellows' work by teacher educators according to 21.55% prospective teachers while 38.67% view that teachers mostly allow the learners to do so and 27.62% think that teachers sometime allow learners to observer their fellows' work. (Table No. 4.9)

10. The 33.15% prospective teachers view that their teachers often start new topic with making questions while 39.23% consider that their teachers do it mostly during their instruction. The 20.99% prospective teachers opine that teacher educators sometime do the practice of asking questions at the start of new topic and sometime don't go for it. (Table No. 4.10)

11. The 17.68% prospective teachers consider that teacher educators often end their discussion in a query for the learners to find it out while 33.70% believe that their teachers put sometimes a question at the end and require the learner to find out the answer. (Table No. 4.11)

12. The 36.46% prospective teachers opine that teachers educators mostly engage critical friends/colleagues in the classroom activities, for the improvement of instructional procedures while 39.23% view that teachers sometime do engage their critical friends/colleagues in their classroom activities. (Table No. 4.12)

13. The 34.25% prospective teachers view that mind mapping activity is often carried out by teacher educators whereas 27.07% believe that teachers mostly go for mind mapping during their instruction and 26.52% think that they do it sometime. (Table No. 4.13)

14. The 24.86% prospective teachers consider that teacher educators often use problem solving methods during their instruction while 32.60% deem that teachers mostly go for it and 29.28% believe that teacher educators sometime resort to problem solving. (Table No. 4.14)

15. The 28.18% prospective teachers opine that their teachers often acknowledge the mistakes before the students in the class that were committed during instruction whereas 36.46% believe that teachers do it mostly. The 25.97% prospective teachers think that teacher educators go for self-accounting sometime during their instruction. (Table No. 4.16)

16. The 28.18% prospective teachers view that teachers often assign individual writing assignments to the learners while 37.57% deem that their teachers mostly go for individual assignments in the classroom. The 23.20% prospective teachers consider that teacher educators sometime assign individual writing assignments to the students. (Table No. 4.16)

17. The 20.44% prospective teachers view that Learners are often asked for writing self-reports regarding different things what the learners thought interesting and mention-worthy by the teacher educators while 30.94% consider teachers mostly offer the

opportunity and 32.04% believe that teachers go for it sometime in the class. (Table No. 4.17)

18. The 39.78% prospective teachers consider that the students are mostly asked to write a written account of their experiences by teacher educators while 45.30% view that teachers do the practice sometime and 13.26% opine that teachers do it rarely. (Table No. 4.18)

19. The 38.12% prospective teachers believe that the teacher educators often ask the students to present different topic before the class, whereas 29.83% think that teachers mostly ask learners for presentation and 22.10% deem that teacher educators sometime go for students' presentation. (Table No. 4.19)

20. The 35.91% prospective teachers believe that learners are often encouraged to ask critical question during their instruction by teacher educators whereas 34.81% deem that teachers encourage it mostly and 20.99% think that teacher educators sometime allow the learners to do so. (Table No. 4.20)

21. The 27.62% prospective teachers view that teacher educators often reinforce students' views and comments whereas 33.15% consider that the teachers mostly reinforce learners' contributions and 30.39% opine that teachers do the practice sometimes during their instruction. (Table No. 4.21)

22. The 43.65% prospective teachers view that Action Research is mostly conducted by teacher educators to some extent while 43.65% consider that teacher educators go for action research sometime during their instruction. (Table No. 4.22)

23. The 28.18% prospective teachers believe that teacher educators often carry out collaborative action research whereas 29.28% think that teacher educators mostly go for it. The 27.62% prospective teachers consider that teachers sometime engage other colleagues to solve the students' academic problems. (Table No. 4.23)

24. The 27.62% prospective teachers consider that audio-visual aids are always used by 27.62% teacher educators for the clarification of concepts during the instruction whereas 34.25% think that teachers do the practice mostly and 25.41% deem that they sometime use audio-visual aids. (Table No. 4.24)

25. The 44.20% prospective teachers opine that teacher educators often use real examples from daily life for explaining the concepts in the classroom, while 33.15% believe that teachers do it mostly and 16.02% think that teacher educators go for it sometime. (Table No. 4.25)

5.2.2 Creativity

The findings regarding creativity were as follows:

1. The average creativity quotient for the students of University of Peshawar was 70.72. (Table No. 4.26)

2. The average creativity level calculated for the students of Hazara University, Mansehra was 72.48. (Table No. 4.27)

3. The average creativity level point for the students of University of Malakand was 73.57. (Table No. 4.28)

4. The average creativity quotient for the students of University of Science and Technology, Bannu was 80.00. (Table No. 4.29)

5. The average creativity quotient for the students of Gomal University, D. I. Khan was 64.58. (Table No. 4.30)

6. The average creativity level of the students at Abdul Wali Khan University, Mardan was 74.62. (Table No. 4.31)

7. The over all average of creativity quotient for the B.Ed. students at different universities was 70.08. (Table No. 4.32)

5.2.3 Relationship between Reflective Practice and Creativity

The findings about the relationship between reflective practice and creativity were as follows:

1. The relationship between reflective practice and creativity level is positive and significant at the University of Peshawar as the calculated r value (i.e. 0.40576131) is greater than that of table value of r (i.e. 0.205) at $\alpha = 0.05$. (Table No. 4.33)

2. The relationship between reflective practice of teacher educators and creativity of the prospective teacher at the Hazara University, Mansehra is positive and significant as the calculated value of r (i.e. 0.52399471) is greater than that of the table value of r (i.e. 0.3493) at $\alpha = 0.05$. (Table No. 4.34)

3. The calculated value of r is 0.85411183, which is greater than that of the table value of "r" that is 0.7545 at $\alpha = 0.05$ for University of Malakand, Chakdara, Dir Lower, so relationship is strong, positive and significant. (Table No. 4.35)

4. The relationship between reflective practice and creativity is positive, significant and strong as the calculate r= 0.97448058 is greater than the table r= 0.8783 at 0.05 level of significance for the University of Science and Technology, Bannu is strong, significant as well positive. (Table No. 4.36)

5. At Gomal Univeristy, D. I. Khan, the relationship between the reflective practice and creativity level is positive and significant as the calculated value of r=0.54403733 is greater than its table value 0.2875 at the level significance 0.05. (Table No. 4.37)

6. The r=0.84703433 is greater than the table value 0.7067 at $\alpha = 0.05$ for Abdul Wali Khan University, Mardan that show as positive, significant and strong relationship between reflective practice and creativity. (Table No. 4.38)

7. Over all the relationship between the reflective practice of teacher educator is positive, significant and strong as the calculated r is 0.53318639 that is greater than the table value of r= 0.1946 at the probability level of 0.05. (Table No. 4.39)

5.3 Conclusions of the Study

On the basis of research findings, the following conclusions were made:

- The teacher educators realize and recognize the effectiveness of reflective practice and they do their level best to train and educate the individuals for the education of new generation of the society. They generally use different forms of reflective practice during their instruction. The types/forms that they use include storytelling, unit review, brainstorming, mind mapping, critical enquiry, learning activities, group assignment, mentoring, students' presentations, referring daily life examples, course review, journal keeping, peer observations, engaging critical friends, problem solving, self-accounting, individual writing assignments, self-reports, writing account of life experiences, reinforcement, action research, collaborative action research, using audio-visual aids. (Objective No. 1)

- The frequency of different forms of reflective practice practiced by teacher educators was different. The teacher educators regularly use storytelling, unit review, brainstorming, mind mapping, critical enquiry for the intellectual development of their learners. The most often conduct learning activities, group assignment, supervising group work, students' presentations, and referring daily life examples to make clear the concepts to their learners and ensure effective learning. (Objective No. 2)

- Teacher educators go less frequently for course review, journal keeping as well as students' journal keeping during their instruction. They also not work out the peer observations, engaging critical friends, Problem solving, self-accounting to the level it need to be addressed. The procedures of individual writing assignments, self-reports, writing account of life experiences, reinforcement, limited action research, collaborative action research, using audio-visual aids are typically practiced by the teacher educators. (Objective No. 2)

- The creativity quotient of the students at different universities individually as well as the overall creativity quotient shows high level of creativity. The average point of creativity quotient was higher than the mean score. (Objective No. 3)

- The relationship between the reflective practice of teacher educators and the creativity of prospective teachers was highly significant, strong and positive. Both, the reflective practice and creative, have a direct relationship between themselves. (Objective No. 4)

5.4 Recommendations

In the light of the research findings and conclusions, the following recommendations are made:

- The teacher educators may concentrate on the new and more effective reflective practice during their instruction, so that their learners are trained in a better way for

the discharge of their future responsibility of the nation building. They may rely on the practices that are contributing more and more to the intellectual development of the learners.

- The courses of teacher education programmes may be designed in such a way that teacher educators do reflective practice under compulsion.

- The evaluation procedures of the teacher education programmes may be made so innovate and dynamic that the teacher educators should not follow the stereotype methodology and materials during their instruction. Research studies may be carried out to delineate the creativity of learners through the evaluation system.

- Teachers' reflective practice requires creativity on their part. In future, research studies may be carried out on the effects of teachers' creativity on their reflective practices during their instruction at various levels.

- Individual differences matter a lot, particularly gender differences in instructional practices; therefore, research studies may be conducted on the basis of gender-based difference in reflective practice and effects on the creativity of their heterogeneous-gender learners. A study of the gender role in the effectiveness of reflective practices on the creativity of learners

- Last but not the least; reflective practice journal may be introduced in the institutions of teacher education. And research studies may be carried out on the effectiveness of reflective practice journals.

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Appendix – A

Questionnaire ID:

Questionnaire for Reflective Practice

Assalam-o-Alaikum
Dear Prospective Teachers,

The following questionnaire is meant purely for research purpose. Your cooperation and fair responses will ensure the quality of my research study.
You are required to tick one option from the given options that seems most appropriate to you.

Name: _____ Class: _____ Semester: _____
University: _____

No.	Items	Completely True (100% True)	Mostly True (75% True)	May be True or False (50% True)	Mostly False (75% False)	Completely False (100% False)
1	Activities are conducted for effective learning inside/outside of the classrooms.					
2	Teachers present summary of the unit at the end of the class/unit.					
3	Teachers review the course at the end of semester/session.					
4	Teachers narrate stories related to topic during instruction.					
5	Teachers keep record in writing, of what have been done in the class.					
6	Students are asked to write summary of the activities held in the class.					
7	Teachers conduct group work in the classroom.					
8	Group work in the classroom is supervised by the teachers.					
9	Students check fellows' work.					
10	Teachers start a concept/topic by asking questions.					

11	Teachers finish the topic in a query to find out understanding by the learners.					
12	Teachers involve other teachers in the classroom activities.					
13	Students are encouraged to express their views on the topic.					
14	Students are asked to respond to the topic without providing anything by the teachers.					
15	Teachers acknowledge and rectify their mistakes, if committed during teaching.					
16	Students are asked in the class for writing a piece of writing on a topic given by teacher.					
17	Students are asked in the class for writing a piece of writing on a topic chosen by them.					
18	Students are asked to write an account of their life experiences.					
19	Students are making presentations on topic in the classroom.					
20	Students are encouraged to ask questions.					
21	Teachers reinforce students' views and comments.					
22	The problems arising during teaching in the classroom are sought out by addressing their root causes.					
23	Teachers involve other teachers to solve the instructional problems of the students.					
24	Audio-Video materials/clips are presented for the clarification of the concepts.					
25	Teachers explain concepts with examples from daily life.					

Date: ____/____/2011

Appendix – B

Questionnaire ID:

Questionnaire for Creativity Quotient

Assalam-o-Alaikum
Dear Prospective Teachers,

The following questionnaire is meant purely for research purpose. Your cooperation and fair responses will ensure quality of the research study.

You are required to tick the option that seems most appropriate to you by using the following key:

A: This statement about me is completely true
B: This statement about me is mostly true
C: This statement about me may be true or false
D: This statement about me is mostly false
E: This statement about me is completely false

Name: _____ Class: _____ Semester: _____
University: _____

No.	Items	A	B	C	D	E
1	I do not like to stick to old methods or ideas.					
2	I like to think "outside the box".					
3	I am always on the lookout for things with which I can let my creativity improve.					
4	I am not judgmental about things as I believe in the saying 'to each his/her own'.					
5	Art is one of my biggest passions.					
6	I believe that everybody have the right to express himself/herself as long that expression does not hurt anybody.					
7	I believe that one should be original and dare to be different.					

8	I never let myself be dominated by what others think is right or wrong.					
9	I tend to find my work monotonous unless my creativity is challenged regularly.					
10	I like to work with creative, rather than overtly cautious people.					
11	It is absolutely imperative to me that I challenge my imagination and myself and that I do so regularly.					
12	I do not stick to the instructions if they are too inflexible.					
13	I cannot work in a restricted environment.					
14	I have the ability to think on my feet.					
15	Creativity is more than just an idea for me. It is an extension of who am I as a person.					
16	My mind is constantly overflowing with new and unexplored ideas and solutions.					
17	I love to be given an opportunity where I can play and experiment with my creativity.					
18	I like to give myself the opportunity to think creatively and to come up with unusual answers to usual problems.					
19	People seek my advice on things that are creative and original.					
20	I am usually able to explain my ideas to others without any misunderstandings.					
21	At work, most of the solutions I come up with are original and different.					
22	People around me are not always as enthusiastic about my ideas as I am but they eventually see my originality sooner or later.					
23	I can not restrict my thinking to conventional and conservative ideas and thoughts.					
24	I have faith in my intuitiveness.					
25	People usually think of me as being a little (if not more) over the top.					

Date: ____/____/2011

Appendix – C

Improvement of the Questionnaires after the Pilot Study

Questionnaire for Reflective Practice

No.	At. No.	Before the Pilot Study	After the Pilot Study
1	2	Teachers summarize the unit.	Teachers present summary of the unit at the end of the class/unit.
2	4	Teachers demonstrate while teaching.	Teachers narrate stories related to topic during instruction.
3	11	Teachers directly start the topic when the class starts.	Teachers finish the topic in a query to find out by the learners.
4	16	Students are directed for writing on a topic, given by teacher.	Students are asked in the class for writing a piece of writing on a topic given by teacher.
5	17	Students are directed for writing on a topic chosen by them.	Students are asked in the class for writing a piece of writing on a topic chosen by them.
6	23	Students are grouped for carrying out various activities inside/outside the classroom.	Teachers involve other teachers to solve the instructional problems of the students.

Questionnaire for Creativity Quotient

No.	At. No.	Before the Pilot Study	After the Pilot Study
1	3	I am always on the lookout for things with which I can let my creativity loose.	I am always on the lookout for things with which I can let my creativity improve.
2	14	I have the ability to think on my feet.	I have the ability to react to events decisively, effectively, and without prior thought.
3	16	My mind is constantly brimming with new and unexplored ideas and solutions.	My mind is constantly overflowing with new and unexplored ideas and solutions.
4	18	I like to give myself the opportunity to think ingeniously and to come up with unusual answers to usual problems.	I like to give myself the opportunity to think creatively and to come up with unusual answers to usual problems.
5	22	People around me are not always as enthusiastic about my ideas as I am but they eventually see my ingenuity sooner or later.	People around me are not always as enthusiastic about my ideas as I am but they eventually see my originality sooner or later.

Appendix – D

Raw Data of the Study

Hazara University, Mansehra

Sr.	Resp. ID	RP	CQ	Value of "r"
1	001	71	72	
2	002	72	71	
3	003	72	63	
4	004	81	78	
5	005	59	59	
6	006	67	79	
7	007	74	72	
8	008	78	69	
9	009	84	74	
10	010	63	72	
11	011	71	71	
12	012	76	78	
13	013	75	84	0.52
14	014	78	73	
15	015	77	84	
16	016	77	69	
17	017	72	69	
18	018	58	67	
19	019	73	71	
20	020	75	70	
21	021	75	79	
22	022	76	87	
23	023	70	63	
24	024	77	72	
25	025	63	63	
26	026	60	66	
27	027	74	71	
28	028	74	81	
29	029	72	75	
Total		2094	2102	

University of Peshawar

Sr.	Resp. ID	RP	CQ	Value of "r"
1	030	77	78	
2	031	67	69	
3	032	57	70	
4	033	67	80	
5	034	65	70	
6	035	70	75	
7	036	65	70	
8	037	75	86	
9	038	63	62	
10	039	58	64	
11	040	69	66	
12	041	67	67	
13	042	61	81	
14	043	58	75	
15	044	68	70	0.40
16	045	NR	NR	
17	046	65	75	
18	047	62	61	
19	048	60	72	
20	049	66	74	
21	050	63	76	
22	051	59	77	
23	052	66	78	
24	053	65	87	
25	054	NR	NR	
26	055	59	62	
27	056	60	63	
28	057	NR	NR	
29	058	68	71	
30	059	68	74	
31	060	65	65	
32	061	66	74	
33	062	63	65	
34	063	76	70	
35	064	69	69	
36	065	68	67	
37	066	62	70	
38	067	67	74	
39	068	68	78	
40	069	59	66	

41	070	60	71	
42	071	69	76	
43	072	59	89	
44	073	66	69	
45	074	62	82	
46	075	67	92	
47	076	NR	NR	
48	077	60	62	
49	078	63	68	
50	079	60	65	
51	080	61	64	
52	081	NR	NR	
53	082	NR	NR	
54	083	65	68	
55	084	NR	NR	
56	085	61	70	
57	086	62	67	
58	087	66	67	
59	088	62	65	
60	089	58	66	
61	090	NR	NR	
62	091	68	77	
63	092	59	68	
64	093	NR	NR	
65	094	69	73	
66	095	57	73	
67	096	62	71	
68	097	60	72	
69	098	NR	NR	
70	099	NR	NR	
71	100	NR	NR	
72	101	58	60	
73	102	62	61	
74	103	58	67	
75	104	60	66	
76	105	NR	NR	
77	106	69	76	
78	107	60	63	
79	108	60	64	
80	109	68	73	
81	110	63	74	
82	111	67	70	

83	112	60	68	
84	113	61	71	
85	114	62	77	
86	115	73	78	
87	116	61	68	
88	117	70	74	
89	118	NR	NR	
90	119	NR	NR	
91	120	60	68	
92	121	62	67	
93	122	NR	NR	
94	123	59	66	
95	124	64	69	
96	125	60	65	
97	126	62	74	
98	127	NR	NR	
99	128	66	64	
100	129	61	67	
101	130	NR	NR	
102	131	59	64	
103	132	76	76	
104	133	55	70	
105	134	67	74	
106	135	58	65	
107	136	62	69	
108	137	NR	NR	
109	138	NR	NR	
Total		5670	6294	

University of Malakand

Sr.	Resp. ID	RP	CQ	Value of "r"
1	139	66	73	
2	140	71	71	
3	141	NR	NR	
4	142	79	83	
5	143	69	68	
6	144	62	68	
7	145	NR	NR	0.85
8	146	69	73	
9	147	NR	NR	
10	148	74	79	
Total		490	515	

University of Science & Technology, Bunnu

Sr.	Resp. ID	RP	CQ	Value of "r"
1	149	73	79	0.97
2	150	72	79	
3	151	NR	NR	
4	152	77	83	
5	153	72	79	
6	154	73	80	
Total		367	400	

Gomal University, D. I. Khan

Sr.	Resp. ID	RP	CQ	Value of "r"
1	155	81	80	0.54
2	156	79	65	
3	157	62	72	
4	158	62	69	
5	159	68	72	
6	160	NR	NR	
7	161	74	64	
8	162	78	63	
9	163	78	83	
10	164	NR	NR	
11	165	NR	NR	
12	166	71	76	
13	167	NR	NR	
14	168	57	55	
15	169	72	67	
16	170	57	54	
17	171	64	63	
18	172	56	55	
19	173	56	56	
20	174	NR	NR	
21	175	56	62	
22	176	65	56	
23	177	NR	NR	
24	178	NR	NR	
25	179	70	72	
26	180	72	76	
27	181	NR	NR	
28	182	52	56	
29	183	55	63	
30	184	55	63	

31	185	55	57	
32	186	65	57	
33	187	69	52	
34	188	65	55	
35	189	50	61	
36	190	61	60	
37	191	62	54	
38	192	51	58	
39	193	69	83	
40	194	51	66	
41	195	50	56	
42	196	60	53	
43	197	NR	NR	
44	198	66	77	
45	199	NR	NR	
46	200	NR	NR	
47	201	69	72	
48	202	65	67	
49	203	65	72	
50	204	64	65	
51	205	56	67	
52	206	52	68	
53	207	66	63	
54	208	74	72	
55	209	NR	NR	
Total		2725	2777	

Abdul Wali Khan University, Mardan

Sr.	Resp. ID	RP	CQ	Value of "r"
1	210	NR	NR	
2	211	73	77	
3	212	NR	NR	
4	213	71	79	
5	214	69	74	
6	215	66	71	
7	216	68	74	0.85
8	217	NR	NR	
9	218	72	76	
10	219	67	73	
11	220	69	73	
Total		555	597	

NR = not responded