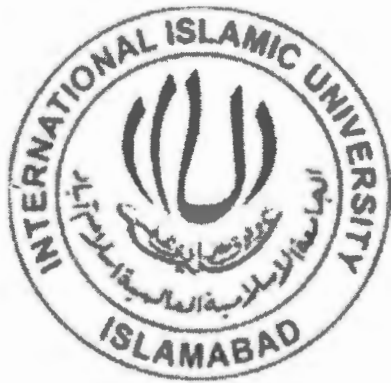


**TEACHER EDUCATION IN PAKISTAN: BRIDGING GAPS
BETWEEN THEORETICAL KNOWLEDGE AND
PROFESSIONAL PRACTICE**



BY

MUHAMMAD BILAL

73-FSS/PHD/EDU/S-11

DEPARTMENT OF EDUCATION

FACULTY OF SOCIAL SCIENCES

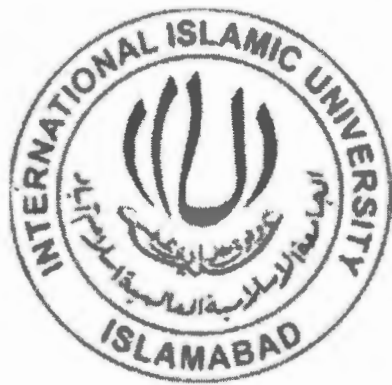
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Submitted in partial fulfilment of the requirements for the degree of Doctor
of Philosophy in Education at the Faculty of Social Sciences,
International Islamic University,

Islamabad

SUPERVISOR:

DR. SAYYAD ASAD ABBAS RIZVI

**DEPARTMENT OF EDUCATION
FACULTY OF SOCIAL SCIENCES
INTERNATIONAL ISLAMIC UNIVERSITY
ISLAMABAD**

2017



In the Name of Allah,
The Most Beneficent, the Merciful

DEDICATED

To,

All my family members who have always
been a source of inspiration for me

APPROVAL SHEET

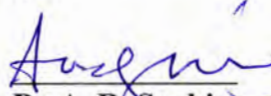
TEACHER EDUCATION IN PAKISTAN: BRIDGING GAPS BETWEEN THEORETICAL KNOWLEDGE AND PROFESSIONAL PRACTICE

By

MUHAMMAD BILAL

Accepted by the Department of Education, Faculty of Social Sciences, International Islamic University Islamabad as partial fulfilment of the requirements for the award of the degree of "DOCTOR OF PHILOSOPHY IN EDUCATION"

Co- Supervisor


Dr A. R. Saghir

Supervisor: _____


Dr. Asad Abbas Rizvi

Internal Examiner: _____


Prof. Dr. N. B. Jumani


External Examiner 1: _____


Prof. Dr. Umar Ali Khan

External Examiner 2: _____


Prof. Dr. M. Aslam Asghar

Date 6-1-17


Head,
Department of Education,
International Islamic University,
Islamabad



Dean,
Faculty of Social Sciences,
International Islamic University,
Islamabad

SUPERVISOR'S CERTIFICATE

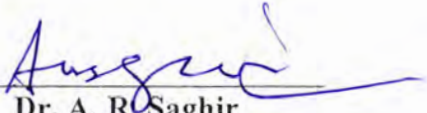
It is certified that the contents and forms of thesis entitled, "**Teacher Education in Pakistan: Bridging Gaps between Theoretical Knowledge and Professional Practice**" submitted by Muhammad Bilal, Registration No. 73-FSS/PHD/EDU/S-11, have been found satisfactory for the requirement of the degree.

Dated 21 / 02 / 2017

Supervisor


Dr. Sayyad Asad Abbas Rizvi

Co-supervisor


Dr. A. R. Saghir

ABSTRACT

The research study was aimed to find out the application level and gaps between the theoretical knowledge and professional practice of teacher education in Pakistan. The study was designed to meet the following objectives; (1) To find out the level of application of the theoretical knowledge by the student teachers during their teaching practice. (2) To explore the differences among the perceptions of student teachers, teacher educators and the observation records of the researcher. (3) To find out the gaps between theoretical knowledge and professional practice of student teachers. (4) To develop strategies to fill the gaps between theoretical knowledge and professional practice of student teachers.

All the student teachers, enrolled in the B.Ed (elementary) one year program, and the teacher educators, in the campuses of the University of Education Lahore as well as in the Government Colleges of Elementary Teachers (GCETs), comprised the population of the study. Multi-stage cluster random sampling technique was used to select the sample. Eight teacher education institutions from both streams of GCETs and UE campuses were selected in equal proportion. 522 student teachers and 100 teacher educators comprised the sample of the study.

The mixed method approach was used to collect the data through observation checklist, questionnaires for student teachers and teacher educators, focus group discussion and interview technique. Data triangulation design was used through the cross tabulation on SPSS for analysis of the quantitative data. Mean score, chi-square test and Tukey's HSD were applied to analyze the quantitative data. Whereas, the qualitative data was analyzed through the thematic analysis.

A mixed picture of application of the theoretical concepts, regarding the different categories of pedagogical skills, were found with considerable, significant, moderate and critical gaps. The observation records usually identified the low level of application of the concepts with greater level of gaps as compared to the perceptions of student teachers and teacher educators. It was also found that the student teachers did not succeed to apply the theoretical concepts regarding the innovative methods of teaching as well as the computer applications in the classroom. Different challenges and problems were identified for the application of theoretical concepts during the teaching practice of student teachers.

The coordination and collaboration among schools and teacher education institutions, freedom and power for student teachers, availability of resources for technology integration, training of school teachers for helping student teachers, expansion in the duration of teaching practice, feedback and reflective practices and the concept of laboratory schools associated with teacher education institutions were identified as the strategies to fill the gaps between theoretical knowledge and professional practice in teacher education.

Close collaboration and coordination, with integrated concept of schools and teacher education institutions, expanded duration of teaching practice, free hands on experience of student teachers, availability of resources and necessary materials as well as the curriculum of teacher education program compatible to the needs of schools were recommended to fill the gaps between theoretical knowledge and professional practice in teacher education.

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LIST OF ACRONYMS

Sr. No.	Abbreviation	Detail
1.	ADE	Associate Diploma in Education
2.	B.Ed	Bachelor of Education
3.	BoC	Bureau of Curriculum
4.	C. T.	Certificate of Teaching
5.	D.Ed	Diploma in Education
6.	DSD	Directorate of Staff Development
7.	DCTE	Directorate of Curriculum and Teacher Education
8.	ETUCE	European Trade Union Committee for Education
9.	GCETs	Government Colleges of Elementary Teachers
10.	GCE	Government College of Education
11.	HSD	Highly Significant Difference
12.	ISATT	International Study Association on Teachers and Teaching
13.	ITE	Initial Teacher Education
14.	KP	Khyber Pakhtoonkhwa
15.	MS	Mean Score
16.	NCATE	National Council of Accreditation for Teacher Education
17.	NIE	National Institute of Education
18.	NR	Negative Responses
19.	OECD	Organization of Economic Cooperation & Development
20.	PBTE	Performance Based Teacher Education
21.	PR	Positive Responses
22.	P. T. C.	Primary Teaching Certificate
23.	QST	Quality Science Teaching
24.	REEC	Regional Education Extension Centre
25.	RITE	Regional Institute of Teacher Education
26.	SAP	Social Action Program
27.	TEIs	Teacher Education Institutions
28.	TTP	Teacher Training Program
29.	TPD	Teacher Professional Development
30.	UE	University of Education
31.	UNESCO	United Nation Education Scientific Cultural Organization
32.	USAID	United States Agency for International Development

CHAPTER 1

INTRODUCTION

1.1. Background of the Study

This research study was aimed at investigating the issues concerning the most important challenge of gaps between theoretical knowledge and professional practice in teacher education. Pre-service teacher education provides knowledge and skills to the student teachers that are practicum to their workplace as a teacher. Professional development starts with a specific experience and an abstract understanding of the situation is created through the analysis of the experience which results in its transfer value (Ulvick, 2014).

The most important problem in teacher education is the preparedness of teachers for their workplace. The studies attested the relationship of the theoretical knowledge and practical skills provided to the students in their pre-service education with effectiveness in the classroom as a beginning teacher (Good, McCasline, Tsang, Yhong, Willy, Bozack, et al., 2006). The common perception about the teacher education is that the teacher education programs focus on what students know rather than on how they use this knowledge (Fraser & Spiller, 2005). There are also great concerns about the lack of

integration between different types of theoretical knowledge or university course work (knowing what) and teaching practice (knowing how) (Sim, 2006, Wilson, 2006).

There has been a perception of student teachers about the teaching practice regarding the B.Ed program in Pakistan to be ineffective from the implementation perspectives (Qazi, Rawat, Sharjeel & Devi, 2008). The significant inadequacies, between theory and practice, have been identified in the research (Bates, 2008). The effectiveness of pre-service and in-service teacher education depends on narrowing down the disparities lying between theory and practice provided to the student teachers in their pre-service teachers' training (Singh, 2005).

The teacher education regarding the Bachelor of Education lasts for a year consisting of theoretical and practical components. The objective of the theoretical component is to prepare the student teachers in keeping with the expansion of pedagogic horizons in their respective domains of expertise in real classroom settings. The practical component lasts for four to six weeks which is assumed to give the in-depth exposure to the student teachers in a realistic context of classroom teaching (Qazi, et al., 2008). Thiessen, (2000) argued that the concurrent use of knowledge in each pedagogical phase and context should be experienced by the student teachers on campus with focus on strategies relevant to the propositional knowledge.

The previous literature has repeatedly revealed a disparity between the theoretical knowledge and professional practice of student teachers through the studies regarding initial teacher training programmes (Allen, Butler-Mader & Smith, 2010; Cheng, Cheng & Tang, 2010; Korthagen, 2010). Cheng et al (2010) defined the phenomenon of gap between theoretical knowledge and professional practice in teacher education as the

“inconsistencies between the selection of the best teaching strategies and the most commonly employed teaching strategies” (p. 94). Vigorous attempts of researchers have been made to address this problem, however, it has been acknowledged as a long standing problem of teacher education. Jumani (2013) identified the lack of research studies regarding the issue of integrating theory and practice in teacher education in Pakistan.

The rationale of the study was;

1. The common phenomenon in teacher education programs is that, the tension between the good practice in faculties of education and the realities of classroom teaching exists (Hargreaves, 1995). One major role of teacher education is to provide sound knowledge to the student teacher for its application in the classroom (Beck & Kosnick, 2002). Separating theoretical knowledge from professional practice can result in a false dichotomy in the teaching profession in which the theory is embedded in and cannot be separated from the practice (Schon, 2003). Therefore, to see, how do the theoretical and practical components in teacher education are embedded in? and how do the student teachers are capable of applying the concepts they obtain through their theoretical component of teacher education program?, there is a need to study the phenomenon, to avoid the false dichotomy in the teaching profession, within the borders of teacher education in Pakistan
2. Falkenberg, Goodnough & MacDonald (2014) identified that the differences in understanding theory and practice in ITE, a problem of integrating theory and practice as well as the proposals how to address this problem reflect views of

scholars writing on this issue. These scholars though are, for the most part, also teacher educators involved in ITE; they represent a subgroup of all teacher educators. By inquiring into student teachers and teacher educators' perceptions, ways of integrating theory and practice and by surveying main stake holders of ITE (student teachers and teacher educators) from one program (B.Ed elementary one year) in one region of Pakistan (Punjab), the study fills the aspect of the lack of understanding identified by Cracker and Dibbon (2008) about the integration of theoretical knowledge and professional practice in ITE.

1.2. Theory Behind the Study

While conducting the study, the theory of social efficiency was followed through which the teacher education is dealt with as a result of research conducted in different dimensions of teacher education. Considering the scientific study of the teacher's work as the best basis for teaching in the training programs, the concept of performance based teacher education (PBTE) emerged and became popular in 1960 to 1970. In this approach the outcomes of teacher education are assessed in the form of teacher's practices in the classroom. The period of mid 1990s has been considered as an age of standardization (Hargreaves and Goodson, 2006). Being associated with professional standards, this approach has widely affected the reforms in the field of teacher education (Zeichner & Liston, 1990; Coacheran- Smith & Fries, 2001).

1.3. Statement of the Problem

The study was in the context of teacher education in Pakistan as the teachers' training through the pre-service teacher education is a major part of the education system

in Pakistan. The close relationship between theoretical knowledge and professional practice in teacher education results in the form of quality teachers. The main purpose of the study was to investigate the gaps between theoretical knowledge and professional practice in teacher education, as well as to develop strategies for bridging these gaps. The problem of the study can be stated as "What is the level of application and gaps between theoretical knowledge and professional practice in teacher education and what strategies can be developed to bridge these gaps?"

1.4. Objectives of the Study

The main objectives of the study were;

1. To find out the level of application of the theoretical knowledge in the professional practice of student teachers in teacher education program.
2. To find out the gaps between the theoretical knowledge and professional practice of student teachers in the teacher education program.
3. To explore the differences among student teachers, teacher educators and observations of the researcher about the level of application and gaps between theoretical knowledge and professional practice of student teachers.
4. To develop strategies for bridging the gaps between theoretical knowledge and professional practice of student teachers in teacher education program.

1.5. Research Questions

The following research questions were investigated in the study:

1. How do student teachers apply the theoretical knowledge in their professional practice?

- i. How do student teachers succeed to put into practice the theoretical knowledge, received through the course content, in their professional practice?
- ii. How do student teachers, teacher educators and observation records differ regarding the application of theoretical knowledge in teacher education?
2. What are the gaps between the theoretical knowledge and professional practice in teacher education program?
 - i. What is the level of gaps between theoretical knowledge and professional practice of student teachers in teacher education program?
 - ii. What challenges and problems are there in teacher education regarding the gaps and application of theoretical knowledge in professional practice?
3. What are the strategies to fill the gaps between theoretical knowledge and professional practice of student teachers in teacher education?
 - i. How do student teachers perceive to fill the gaps between theoretical knowledge and professional practice in teacher education?
 - ii. How do teacher educators perceive to fill the gaps between theoretical knowledge and professional practice in teacher education?

1.6. Significance of the Study

The present study is significant for a number of reasons regarding the teacher education programs;

Firstly, it is helpful to make reasonable contribution in the body of research elaborating the ways in which the theoretical knowledge aligns with the practices of the pre-service teachers at their work place. Korthagen et al. (2006) have identified that the

voices of candidates are rarely used to ascertain whether their teacher education programs achieve their goals? Therefore, for better understanding of the social reality of turning theoretical knowledge into practice, this study will be helpful to explore the perceptions of the student teachers who face the actual situation.

Secondly, the study will be a source to develop understanding of the links between pre-service teacher's knowledge and skills during their practical training in the schools. According to Coachran-Smith & Fries, (2005), there has been focus of the research studies regarding teacher education on the knowledge, beliefs, and attributes of teachers in the teaching profession. Therefore, it is necessary to investigate how the practices of student teachers are in line with the knowledge and skills obtained through the theoretical component of teacher education?

Thirdly, the gaps between theoretical knowledge and professional practice of teachers define the quality of education. What strategies can be adopted to fill these gaps according to the perceptions of student teachers and teacher educators? A little attention has been diverted to this field, an overall neglected field of research in education (Ali, 2011). The study identified the application level and gaps of theoretical knowledge in professional practice as well as the strategies necessary to fill these gaps.

The findings of the study will help the policy makers in the field of teacher education to understand the needs and requirements of student teachers to make them quality practitioners. It will help them to make decisions regarding the overall improvement of education through the quality development of student teachers.

The study will help the administrators of school education as well as of teacher education institutions to understand what should be emphasized by the teacher educators

to train the student teachers with innovative practices to make them real world practitioners. Thus the training institutions that apply the recommended strategies derived from the results of the study will be able to train the student teachers better.

1.7. Methodology

Pragmatist worldview with concurrent triangulation design also called convergent parallel design (Cresswell, 2007) of mixed method approach was used for the collection of data. The study was descriptive, as well as qualitative and quantitative in nature. Through gathering both numeric information (e.g., on instruments) and text information (e.g., on interviews) the final database represents both quantitative and qualitative information (Creswell, 2003, p. 20).

1.7.1. Population

All the 4178 student teachers of the B.Ed (elementary) one year program and 632 teacher educators, in the public sector teachers' training institutions affiliated with the University of Education Lahore, were considered as the population of the study.

Table 1.1. Number of Student Teachers and Teacher Educators w.r.t. the Institutions

Sr. No	Institution Type	Number of Institutions	Teacher Educators	Enrolment of students
1	GCETs	33	361	3025
2	UE, Campuses	10	271	1153
	Total	43	632	4178

University of Education (2014)

1.7.2. Sampling

Multi-stage random sampling method (also called cluster sampling by Al-Shahomee (2012, p. 1)) was used to select the sample of the study. Intact groups, not individuals, are selected randomly in cluster sampling. Denscombe (1998) defined the cluster random sampling method as selecting of samples from samples.

Four institutions (clusters) from each stream of GCETs and UE campuses were selected through the criteria of institutions with high, medium and low level of enrolments in the B.Ed elementary one year program. Five hundred and twenty two 522 student teachers (327 from four GCETs and 195 from four UE campuses) comprised the sample of the study. One hundred (100) teacher educators from both streams of teacher education institutions (50 from GCETs and 50 from UE campuses) were also selected as the sample of the study.

1.7.3. Instruments

The following instruments were used to collect the data from different sources according to the nature of the data.

Table 1.2. Instruments for Data Collection

Sr. No.	Instrument	Annexure
1	Observation for Student Teachers	(Appendix, A)
2	Questionnaire for Student Teachers	(Appendix, B)
3	Questionnaire for Teacher Educators	(Appendix, C)
4	Focus Group Discussion of Student Teachers	(Appendix, D)
5	Interview of Teacher Educators	(Appendix, E)

1.7.4. Data Collection

For data collection, the researcher visited the student teachers during the practice sessions with the permission of authorities in education department. Records of the data were established through the electronic and manual resources with the students' concern. For collection of data from teacher educators, the questionnaire was delivered and collected personally. For the establishment of interview schedule the researcher visited the teacher educators after taking their consent.

1.7.5. Data Analysis

For different types of data, collected through different instruments, the following methods of data analysis were used;

1. Data triangulation method was used among the responses of student teachers, teacher educators and observation records through cross tabulation. Chi- square was used to determine the differences among the responses of student teachers, teacher educators and observation records of the researcher. Tukey' s HSD was used to compare mean scores of the responses of student teachers, teacher educators and observation records.
2. Data collected through FGD was analyzed by coding and developing themes through qualitative analysis.
3. Data collected through interview schedule was analyzed qualitatively by applying coding method and developing themes.

1.8. Delimitations

Due to the time constraints and limitations of resources, the study was delimited to B.Ed elementary one year program in public sector teachers' training institutions affiliated with the University of Education Lahore.

1.9. Limitations of the Study

The study might be extended with the consideration of following approaches that were not employed. These approaches were the major limitations of the study.

1. The researcher could not include the sequential explanatory or exploratory design which might be helpful for in-depth study of the problem with a longitudinal nature. Due to a short duration of teaching practice, the researcher employed only the concurrent triangulation design for the study.
2. Only the teacher educators were included for interviews and the researcher could not include the administrators of the school education department and teacher education institutions. There were five different types of instruments used in the study for different subjects which made it difficult to include the administrators for interviews.
3. The study might be conducted with case study and comparative approaches including the universities and teacher education institutions all over the country. There was a need of time, finance and physical support to adopt these approaches which was a difficult task to complete with short time and limited resources.

1.10. Assumptions

1. All the teacher education institutions provide same opportunities to the student teachers regarding pedagogical knowledge and skills.
2. Student teachers had equal level of opportunities to use the concepts obtained through the theoretical component of teacher education program.

1.11. Definition of Key Terms

Teacher Education

The teacher education in the study was regarded as the training program established through the departments of education in the universities, as well as in the teachers' training institutions affiliated with the universities. Pre-service training programs was dealt as the teacher education programs. According to Goods Dictionary of Education Teacher Education means all the formal and non-formal activities and experiences that help to qualify a person to assume responsibilities of a member of the educational profession or to discharge his responsibilities more effectively.

Theoretical Knowledge

In this study the term "theoretical knowledge" was referred to as the skills and knowledge provided to the student teachers through the course content of teacher education programme at campus.

Professional Practice

The term “professional practice” was used for the concepts associated with the classroom activities and pedagogies used by the student teachers during their teaching practice at schools in the training program.

Student Teachers/Prospective Teachers

The students enrolled in the pre-service training programme were considered as the student teachers or prospective teachers.

Teacher Educators

The teachers teaching as trainers at the teacher education institutions were dealt as teacher educators in the study.

CHAPTER 2

LITERATURE REVIEW

Teacher education, with a vocational concept, is supposed to emphasise the perspectives of the professional practice in which teachers operate. Teaching is not only a profession but it is an art and a craft, or a highly sophisticated type of craft (OECD, 1990). To strike a balance between the theoretical knowledge and professional practice is a long standing challenge in the pre-service teacher education programs (Bates, 2010; Korthagen, Loughran, & Russell, 2006; Smith, 2008).

The study deals with the deep understanding of implementation of theoretical knowledge in classroom practice. The ways of bridging the gaps of application of the theoretical knowledge have also been investigated in the study. This section is designed to present the literature review with regards to the prior research work done in the context of gaps between theoretical knowledge and professional practice in teacher education. The analysis of previous related research studies, at national and international level, has also been given at the end of this chapter.

2.1. Teacher Education in Pakistan

Teachers are the major players of the education system and they play a role of an agent of change in the society. Teacher education provides the quality product of teachers responsible to the development and enhancement of quality education in the country. In general term quality is the position of a 'product' or a 'process' attribute on good, bad scale. It is often associated or linked with defects and deficiencies in products or process (Chauhan & Sharma, 2015). According to Johnson (1987)- Quality is the capability of products or services to knowingly satisfy those preconceived composite wants of the user(s) that are intelligently related to the characteristics of performance, and do not cause major overt or covert reactions or actions by other people. Deming (1986) defines quality as a predictable degree of uniformity and dependability at low cost and suited to the market. There are four dimensions of the quality discussed in the literature; a) From customer point of view: quality means fitness for use and meeting customer satisfaction. b) From process point of view: quality means conformance with the process design, standards and specifications. c) From product point of view: quality means the degree of excellence at an acceptable price. d) From the cost point of view: quality means best combination between costs and features (<https://qualitygurus.atlassian.net>).

Isani and Virk (2005) observed the process of teaching as an activity and they perceived the nature of teacher education as a process of specialized grounding for teachers. Almost all the policies and plans for education in Pakistan acknowledged the need and importance of teacher education in promoting quality teachers for the well being of the education system in Pakistan (Ranjha, Tayyab & Alam, 2013; Kayler, 2009). Khan and Saeed (2009) pointed out no precise policy agenda for teacher

education in Pakistan to tackle absolutely the teachers' training and their professional enlargement. Sodhi (1993) claimed that the educational system of a country grows out of its historical background, geographical features, economic growth, social set up and political condition. It is therefore, necessary to describe the historical backgrounds of teacher education in Pakistan.

2.1.1. A Brief History of Teacher Education in Pakistan

Teacher education in Pakistan started in 1804 with the provision of pre-service training through non formal mode in two training institutions at Lahore and Karachi (Siddiqui, 2009). The training institutions at Karachi and Lahore were converted to normal schools with formal mode of training in 1854 and 1856 simultaneously. They started to provide training program of J.V (Junior Vernicular) certificate in teaching. Siddiqui (2009) further described the different training programs provided at certificate and bachelor level from the beginning of Pakistan. He identified J. V. (Junior Vernicular) certificate, S. V. (Senior Vernicular) certificate, C. T. (Certificate in Teaching), O. T. (Oriental Teacher) and B. T. (Bachelor in Teaching). All the programs were of one year nature with different levels of pre-academic qualifications as necessary requirements.

The departure point of the history of teacher education in Pakistan can be traced back to the time when Pakistan came into existence as an independent state in 1947. The national education policies and five years plans were developed and implemented over a period of 65 years and treated the teacher education as a sub-sector for education. The aspect of training the teachers with adequate planning remained second option in the

policies and practices of public sector development programs. Whereas, the significant effects of the pre-service teacher education through different professional development programs have been observed on the quality of teachers (Hattie, 2009, Darling-Hammond, 2010). Qvortrup (2008) considered the quality of teachers as the most important single factor for the overall quality improvement of education and for the efficient and qualitative learning of students.

Overview of the history of developments in teacher education in Pakistan suggests that there has been a significant quantitative expansion in terms of number of institutions established over a period of time. A large number of teachers are being trained in these institutions. At present, nearly 300 institutions in public and private sectors offer a variety of teacher education programs ranging from certificate courses to Ph.D in education (Government of Pakistan, 2009; USAID & UNESCO, 2009).

Reconsideration of teacher education was recommended according to the up-to-date requirements and large scale changes in the society through the National Education Conference, 1947. National Commission on Education, 1959 acknowledged the importance of teacher education with pointing out its incomparable role in coordination of education as stated "No system of education can be higher to the teachers who serve it." Reordering of the teacher education programs as well as the initiation of novel methods within the perspectives of teachers' training were recommended in National Education Policy, 1972-80 to meet the substantial ratios of quality teachers at all levels. A pioneering technique of distance education was also established for teacher education with the help of Allama Iqbal Open University (AIOU). A one year B.Ed program was started through the recommendations of National Committee of Experts on Secondary

School Teachers in 1976 (Government of Pakistan, 1976). The National Education Policy, 1978 also highlighted the teacher as an axle of education system and recommended to reinforce the teacher education programs all over the country (Ranjha, Tayyab & Alam, 2013).

Some innovative concepts of different organizations for teachers' training, mobile training, strengthening the teacher education institutions with well equipped nature, training of faculty and compulsory concept of teaching practice in pre-service training programs were recommended in the National Education Policy 1992 (Government of Pakistan, 1992). The National Education Policy 1998-2010 also gave much importance to the teacher training with its vision for the quality of education directly related to the quality of classroom instruction. The policy considered the teacher as the most crucial factor for the implementation of educational reforms at all levels. The policy also recommended the four years teacher education programs throughout the country. The policy recommended the initiation of B.Ed and M.Ed programs for administrative concept. The policy acknowledged the need for the revision of teacher education curriculum as well as the development of special cadre for teacher educators (Government of Pakistan, 1998).

A major shift can be seen through the recommendations of the National Education Policy, 2009. The teacher education programs at PTC and C.T levels were recommended to be phased out by developing the concept of graduate teachers at elementary level. The standardization and accreditation concepts of teacher education programs as well as the concept of research based needs of training were also recommended to be developed. An important step for the adjustment of the curriculum of teacher education programs with

the school requirements was identified. The separate cadre for specialized teacher trainers was also recommended to be developed (Government of Pakistan, 2009).

A study conducted by Mah-e-Rukh (2012) revealed the factors effecting the initial teacher education in Pakistan within the historical perspectives of policy network.

According to the findings of the study;

1. Vision, tradition and culture affected the policies and practices of ITE (Initial Teacher Education Program).
2. The political regimes and interaction were observed with most pernicious impact on ITE.
3. Lack of financial resources and the dependence of Pakistan on international donor agencies resulted in the addition of the complexity of the problem regarding ITE.
4. Unclear mandate of teacher education institutions, with no professional and institutional autonomy as well as unsuccessful in developing the professional attitude of prospective teachers, had a clear impact on ITE.
5. New skills, innovations and up to-date educational experiences of other countries within the context of global trends were identified as the requirement for teacher education curriculum in Pakistan.
6. New technologies and innovations with basic necessary skills were identified necessary for professional development of prospective teachers.

2.1.2. Current Situation of Teacher Education in Pakistan

Different teacher education programs of PTC, CT & OT were upgraded through the colleges of elementary education in late 1960s. New institutions, in the fields of in-

service and pre-service teacher education, emerged during the last decade of the century. No significant changes can be seen except the foreign funded projects of Social Action Program (SAP), Teacher Training Program (TTP) and Science Education Project (Academy for Educational Development, 2006).

2.1.2.1. Organizational structure

Teacher education in Pakistan is being organized through different departments of education in universities as well as through teachers' training institutions. The major portion of the teacher education is about the pre-service training programs.

Table 2.1. Teachers' Training Institutions in Pakistan

Sr. No.	Province	Institutions	Public	Private
1	Punjab	82	75	07
2	Sindh	80	56	24
3	KP	47	39	08
4	Balochistan	30	28	02
5	AJK	16	13	03
6	FATA	05	05	---
7	FANA	05	03	02
8	Federal Area	10	08	02
	Total	275	227	48

USAID, (2009)

Diversity of organization and administration can be observed in different provinces. However, in all the provinces and federally administered areas of the country, teacher education is provided largely under the administration of provincial departments of education. Curriculum for pre-service teacher education is also followed commonly in all the provinces with the variation of understanding and expertise.

Huma (2013) has described four different kinds of public institutions that provide pre-service and in-service teacher education programs around the country of Pakistan;

1. Faculties of Education or Institutes of Education and Research (IER) at Universities.
2. Public Colleges including Government Colleges for Elementary Teachers (GCETs), Government Colleges of Education (GCE), Government Elementary Colleges of Education (GECE) and Government Elementary Colleges for Teachers (GECTs).
3. Bureaus of Curriculum (BoC) or in case of Punjab, Directorate of Staff Development (DSD).
4. Provincial or Regional Institutes of Teacher Education (PITEs or RITEs).

Bureau of Curriculum & Extension Wing (BC & EW) and the Provincial Institute of Teacher Education are the major sources of teacher education in Balochistan province. Bureau of Curriculum with Provincial Institute of Education is also playing a major role in the field of teacher education. However, in contrast to Sindh province, the PITE works under the administration of Curriculum Wing.

In the context of Khyber Pakhtoonkhwa (KP), Directorate of Curriculum and Teacher Education (DCTE) is responsible for the administrative, financial and academic control of Regional Institutes of Teacher Education. Provincial Institute of Teacher Education KP which is of totally independent nature, is working directly under the control of the Secretary of Education Schools.

Regarding the province of Punjab, Education Department and the University of Education Lahore play a significant role for the provision of teacher education. Directorate of Staff Development Lahore, redesigned in 1993 and already working as Regional Education Extension Center (REEC), is considered to be responsible for the in-service training of teachers under the financial and administrative umbrella of the Secretary of Education Schools. In 1972-74, with the dissolution of west Pakistan into

provincial units, the Education Extension Centre took over the administrative responsibilities of 36 Normal Schools. The Normal Schools were then redesigned as Government Elementary Colleges of Education responsible for the provision of PTC and CT programmes.

A major revolutionary shift was occurred in 2002 with the establishment of the University of Education Lahore. All the government elementary colleges of education (GECEs) affiliated with different universities, Directorate of Staff Development (DSD) and Provincial Institute of Teacher Education (PITE) were taken over by the University of Education Lahore with their administrative and financial responsibilities. However, after the passage of time due to complex nature of administrative and financial issues except for the University of Education campuses, all the Government Elementary Colleges of Education (GECEs), Directorate of staff Development (DSD) and Provincial Institute of Teacher Education (PITE) were redesigned under the financial and administrative responsibilities of the Secretary of Schools in the province. The GECEs were then renamed as Government Colleges of Elementary Teachers (GCETs) (USAID & UNESCO, 2009; www.aed.org; www.ue.edu.pk; pakteachers.com.pk).

2.1.2.2. Teacher education programs

Diversity in teacher education programs can be seen through the teacher education institutions in the country at elementary and secondary level. The teacher education can be bifurcated in terms of in-service and pre-service training programs. The pre-service training programs, also known as the initial teacher education programs, are being provided through the colleges and university departments of education throughout

the country, offering the bachelor, master, M.Phil and Ph.D level programs. There are 275 teacher education institutions according to the Directory of Teacher Education, 2009 including the departments of education as well as the Institutes of Education & Research in universities. PTC and CT level programs for elementary teachers have been recently declared redundant all over the country. However, there are some places as capital administered areas of FATA and FANA, including Allama Iqbal Open University, Islamabad where these programs still exist.

The current scenario of teacher education programs reveals the trend in teacher education programs with long term duration. Three years and four years bachelor level programs in the form of Associate Diploma in Education (ADE) and BS (4 Years) in Education or B.Ed (Honour) programs are being offered. Associate Diploma in Education (ADE) and Diploma in Education (D.Ed) have been started in 2008 with the collaboration of Academy for Educational Development funded by United States Agency for International Development (USAID) under the Pre-STEP program initiated with 75 million dollars (Khan, 2011). The Associate Diploma in Education is being offered at Government Colleges of Elementary Teachers (GCETs) as well as in the departments of education at universities in Punjab and Khyber Pakhtoonkhwa with pre-requisite qualification of F.A/F.Sc with limited number of seats.

Bachelor of Education B.Ed (Honour) is also being offered in the GCETs, University of Education campuses as well as in the departments of education in different universities. Intermediate level education has been considered as the pre-requisite for admission and the programme has been started with 64 credit hours in semester system. The concept of internship has been introduced in B.Ed honour and the programme is

considered equal to the master and M.Sc level programs being offered at different universities (University of Education, 2014).

A study conducted by Fatima and Naseer-ul-Deen (2010) observed different teaching methods and satisfactory evaluation system for students' performance in the training program of M.A. Education. However, they also recommended the required changes in the admission criteria, curriculum, duration of degree program, teaching practice, research work and rewards and incentives for the said program in Pakistan.

2.1.3. Curriculum in Teacher Education

What should be taught within the institution?, it can be determined through the critical and valued process of curriculum development. Social cultural, political and environmental factors plays an important role in the process of curriculum development. Darder (1991) described the curriculum as "Curriculum traditionally refers to the coursework offered by a educational institution for the successful completion of a degree or credentialing objectives" (p. 19). The question arises "what type of knowledge attitudes, behavior and skills, a teacher should possess?" The answer to this question can be found in the curricula of teacher education programs. What is curriculum development? In its most simplified form, curriculum development is the process of planning, implementing, and evaluating curriculum that ultimately results in a curriculum plan (Lunenburg, 2011). Taylor (1949) pointed out that curriculum goals can be derived from three sources that are studies of society, studies of learners and suggestions of subject matter specialists.

Historically, the teacher training in Pakistan at elementary level was a responsibility of the provincial governments through different teachers training institutions. Whereas at higher education level, it was being provided through the universities' departments of education. Different teacher education programs before 2002 have been given in the table below;

Table. 2.2. Teacher Education Programs before 2002

Training Program	Qualification Requirements for Admission	Duration of Training in Academic Years	Levels/classes that can be taught
P.T.C	Matriculation	1	I-V
C.T	Intermediate	1	I-VIII
Diploma Ed	Matric	3 years after matric	1-VIII
	Intermediate	1 year after intermediate	
B.S.Ed. (12 + 3)	Intermediate	3	VI-X
B.Ed	B.A/B.Sc.	1½ years after BA, B.Sc or 3 years after Intermediate	VI-X
B.A in Education	Intermediate FA /FSC, A Levels	4 years	1-VIII in Private Sector
M.A Education	BA, BSC, B.Ed.	M.Ed. 1½ years after B.Ed,	VI - XII + Students
MA in School Administration		MA and all specialized subjects in Education 2 years after BA/BSC	Teachers of PTC, CT and B.Ed + Supervision
MBE			Professional Institutions
MELTS			Universities
MTA			Management Positions
MA ECE *			
MPhil & PhD in Education	M.A. M.S.C, M.Ed	2 Years and 3 Years	Professional Institutions Universities Management Positions

USAID (2004)

The curriculum at elementary and secondary level teacher education programs was developed w. r. t. the needs of learners at the respective level. The coursework is perceived to be embedded in generalized theoretical approaches, with low practical

hands-on exposure (chaudhary, 1995). The examining body for PTC/CT and Dip Ed are the Boards of Intermediate and Secondary Education (BISE). The examining body for B.Ed, M.Ed. M.Phil and PhD programs was the conventional universities with which the pre-service institution is affiliated. the following subjects were taught at elementary and secondary level teacher education programs.

Curriculum at elementary level teacher education

1. Principles of education and methods of teaching
2. Child development and counselling
3. School organization and classroom management
4. Language and methods of teaching
5. Mathematics and methods of teaching
6. Science and methods of teaching

Curriculum at secondary level teacher education.

1. Perspectives of education
2. Educational psychology and guidance
3. School organization and management
4. Evaluation and measurement
5. Islamiat and Pakistan studies
6. Curriculum and instruction
7. Practice teaching

After 2002, with establishment of Higher Education Commission Pakistan as well as the development of the University of Education Lahore, different developments can be seen regarding the pre-service teacher education programs in Punjab Pakistan. The training programs at PTC and CT levels were phased out and the University of Education Lahore initiated a specific program, with the nomenclature of B.Ed elementary, in the different affiliated teacher education institutions (GCETs and University of Education Lahore campuses) in the province of Punjab Pakistan. The curriculum for B.Ed elementary was developed with different subjects specific to the needs of learners at

elementary level. At present, different courses are offered with compulsory and elective subjects given as under the table.

Table. 2.3. Curriculum of B.Ed Elementary with Weightage of Theoretical and Practical Components

Sr. No.	Compulsory courses	Credit Hours	Elective Courses (any two courses)	Credit Hrs/Marks
1	Introduction to Education & Teaching Profession	3	Methods of Teaching Science at Elementary Level	2
2	ICT in Education	3	Methods of Teaching ICT/Art and Craft at Elementary Level	2
3	English Language Communication Skills	3	Methods of Teaching Home Economics at Elementary Level	2
4	Cognition and Development	3	Methods of Teaching Art and Craft at Elementary Level	2
5	Assessment in Education	3	Methods of Teaching Social Studies at Elementary Level	2
6	Elementary School Curriculum	3	Methods of Teaching Islamiyat at Elementary Level	2
7	School and Classroom Management	3	Methods of Teaching Arabic at Elementary Level	2
8	Methods of Teaching Urdu at Elementary Level	2	Methods of Teaching Persian at Elementary Level	2
9	Methods of Teaching English at Elementary Level	2	Methods of Teaching Punjabi at Elementary Level	2
10	Method of Teaching Mathematics at Elementary Level	2		
11	Teaching Practice	6		
	Total credit hours	33		4

Theoretical component = 31 credit hrs (83.78%)

Practical component = 6 credit hrs (16.21%)

University of Education (2014)

2.1.4. Problems and Prospects in Teacher Education

Teacher education in Pakistan is under criticism with its low quality regarding curriculum content, knowledge level and methodology of teacher educators, evaluation techniques, effectiveness of teaching practice, quality of learning environment, professional development of student teachers, absence of creativity and reflective processes as well as for the use of technology (Rana, 2010; UNESCO, 2006; Siddiqi, 2010; Isani & Virk, 2005; Government of Pakistan, 2009). The absence of quality has been needed to be tackled immediately for teacher learner interactions through the supportive concept of management as well as through enabling of policy environment (UNESCO, 2008).

Academy of Educational Development (AED) conducted the evaluative study of "The performance Gap Analysis and Training Needs Assessment of Training Institutions" within the context of Pakistan in 2006. The study identified different problems and gaps in the teacher education system and concluded that;

1. The quality of pre-service as well as in-service teacher education was found below satisfactory level.
2. There was found a diversity of institutions, overlap and low level of interaction among the teacher education institutions.
3. The duration of certificate as well as of degree programs was found short with lengthy content and the programs were emphasized with theory based rather than practicum based nature. There was also no concept of institutional evaluation as well as for the appraisal of staff in the teacher education institutions. The training staff was ignorant of their needs, strengths and weaknesses in result.

4. There was a lack of the utilization of resource materials, labs, IT labs and appropriate rooms with their narrow availability in the institutions (AED, 2006).

Shah and Lu (2013) found that during the teaching practice, there was found a lack of collaboration among teacher education institutions and practicing schools. They also observed the disvaluing of student teachers' practices in the classroom by the class teachers as well as by the administrators of schools. A report published by USAID (2010) elaborated the true picture of teacher education programs in Pakistan as under:

Currently, a variety of prevailing teacher certification programs exists throughout the country. These programs are generally limited by outdated pedagogy, inadequate teaching of subject matter, lack of instruction in communication, critical thinking and creative teaching skills. The objective of the rationalization study was to review the prevailing pre-service teacher education programs, their curriculum, scheme of studies, and organizational structure and to make recommendations for a single qualitatively superior program aligned with and responsive to the National Education Policy of 2009.

Behlol and Malik (2013) conducted a study regarding the "Identification of the factors of quality teacher training and development of a model training program in Pakistan" and identified the factors affecting the quality product in teacher education. They revealed that the program admission requirements, knowledge of basic skills (language art and math) and knowledge of human growth and development were highest in ranking for the quality improvement of teacher education in Pakistan. However, a holistic approach is required with allover development and quality enhancement of content, methodology, infrastructure and faculty of teacher training institutions.

2.2. Theories of Teacher Education

Education can be considered as a key social activity through which the society reproduces the traditions and forms of life it considers desirable. It produces new

traditions and forms of life. It considers preferable to realize its aspirations for humanity. Although some writers described that teacher education had relatively little impact on classroom practice (Lampert & Ball, 1998; Stuart & Thurlow, 2000). However, it depends upon the type and design of teacher training being provided (Kennedy, 1999). A considerable body of research has marked that pre-service teacher education has a significant impact on early-career teachers' teaching skills and their philosophies of teaching (Darling-Hammond, 2000; Temmerman, 1997). The contemporary research about teacher preparation reveals in general the knowledge and skills acquired by the pre-service teachers are likely to be needed in the classroom. The well prepared teachers remain in teaching profession with their outer performance of students' achievement as well as there can be seen a high investment by the leading industrialized nations in pre-service teacher education (NCATE, 2010).

Ali (2011) described three types of theory approaches in teacher education and these theories have been elaborated through the concepts of; a) Reflective practice, b) constructivism, c) Action research and collaborative inquiry and, d) Partnerships and collaboration. Reflective practice has been considered as "A corner stone of many teacher education programs" (Laoughran, 2006 p. 129). Reflection has been rendered to guide research and reforms in teacher education programs as a viable construct (Ritter, 2009).

The constructivists rejected the concept of positivists about the transfer of meaning from teacher educator towards the trainee teacher (Glaserfeld, 2005). It depends on the concept of constructing one's own beliefs about teaching (Ali, 2011). Some reputed teacher education institutions in Pakistan from private sector have been reported

for adapting the constructivist approach specifically in the context of in-service training programs (UNESCO, 2006). Action research and collaborative inquiry, however, dealt with the contemporary discussion about building of professional learning communities in schools. In creating norms of cooperation and collaboration among the teachers, this approach has been adopted as intervention strategy for the development of teachers as well as for the improvement of schools (Louden, 1992).

The concept of partnerships and collaboration deals with the two major goals of teacher's professional development and evolution of institutional capacity building (Anderson, 2002). The partnership concept was attested through worldwide research literature for its benefits of working relationships to the educational institutions, teachers as well as to the students (Hergreaves, 1994).

Pre-service teacher education has been perceived to have relationship with quality development of teachers, students' achievement and effectiveness of teachers in the classroom. Therefore the teacher education has been seen and reformed from time to time in the context of these issues. Different questions have been raised to make teacher education more purposeful by the educationists regarding teachers' professional development. Four key questions by Coacheran-Smith (2002) have played a significant role to drive the teacher education reforms in America during the last century. Zeichner and Liston (1990) also provided theoretical basis of these questions in a different way. These questions have been considered as means to determine the evidences for effectiveness of teachers, prepared through the teacher education programs as well as for their effectiveness in the classroom. These four key questions have been documented in the logical order according to their role for determining teachers' effectiveness;

1. The attribute question

What are the attributes of good teachers, prospective teachers and teacher education programs?

2. The effectiveness questions

- I. What are the teaching strategies and processes used by effective teachers?
- II. What kind of teacher education processes ensure that prospective teachers learn these strategies?

3. The knowledge question

What should teachers know and be able to do?

4. The outcome questions

- I. What should the outcomes of teacher education be for teacher's learning, professional practice and students' learning?
- II. How, by whom and for what purposes these outcomes be documented, demonstrated and measured?

Coacheran-Smith (2002) has considered these outcome questions as the forefront of teacher education reforms. Zeichner and Liston (1990) observed that throughout the twentieth century there have been four clear traditions of American teacher education reforms, academic tradition, social efficiency, developmentalists and social reconstructionists.

2.2.1. Academic Tradition

The Academic Tradition focused on the importance of disciplinary knowledge for pre-service teachers, gained through a classical liberal arts education combined with an

apprenticeship in schools. Here, the “Mastery of subject matter was the most important goal in the education of teachers” (Zeichner & Liston, 1990, p. 4). As such, teachers should be educated in their subject matter at university, but should learn how to teach in the company of more experienced teachers once they get to the schools (a disciplinary and apprenticeship model). An academic approach to pre-service teacher education would attract academically talented students, who would otherwise be turned away by the ‘doubtful intellectual value’ of many education courses.

2.2.2. Social Efficiency

For exponents of the Social Efficiency Tradition, the scientific study of teaching provides the best basis for building a teacher education curriculum. This tradition tended to examine the nature of teacher work in order to provide a basis for studying teaching, and was largely influential in developing such reforms as Competency/Performance Based Teacher Education (C/PBTE) in the United States in the 1960s and 1970s. Here competencies (skills and knowledge) were specified in advance along with the criteria to measure mastery of these competencies. Once the competencies have been demonstrated, the teacher is viewed as ‘effective’. The trend towards C/PBTE became widely popular in teacher education literature in the United States and worldwide, although it attracted criticism regarding its behaviorist underpinnings (Zeichner, 2010).

Many contemporary teacher education reforms reflect the social efficiency perspective, under the label ‘research-based teacher education’. This perspective is evident in reforms that incorporate new versions of the (behaviorist) C/PBTE combined with broader (cognitive) reforms.

In this framework, the outcomes of teacher education should be consistent with the realities of teaching. Since 1990, this approach (which is associated with the terms 'outcomes' and 'professional standards') has become increasingly evident in teacher education reforms (Cochran-Smith & Fries, 2001).

2.2.3. The Developmentalists

The Developmentalist Tradition asserts that the "natural development of the learner provides the basics for determining what should be taught both to pupils in the public schools and to their teachers" (Zeichner & Liston, 1990: 9). Three metaphors can be used to describe its manifestation in the twentieth century as proposed by Perrone, they are; (a) The teacher as naturalist, (b) The teacher as artist, and (c) The teacher as researcher (cited in Zeichner & Liston, 1990).

This approach is also associated with 'humanistic teacher education' and the 'personalized teacher education program', grounded in Fuller's studies of teacher concerns. Fuller's assumption is that if a teacher education program is aligned with student teachers' developmental needs, it will guide them towards maturity as a teacher (Zeichner & Liston, 1990).

2.2.4. Social Reconstructionists

In the social reconstructionist Tradition, "Schooling and teacher education are crucial elements in a movement towards a more just society" (Zeichner & Liston, 1990: 12). This tradition encouraged student teachers to take a critical look at the prevailing social and political orders that are associated with education, and aims to break the poverty cycle by preparing teachers to teach in low-income areas.

2.3. Theoretical Knowledge & Professional Practice

2.3.1. Theoretical Knowledge in Teacher Education

A considerable debate about the questions, how do teachers learn to teach? or what type of knowledge is necessary for the teachers and how do they apply this knowledge in the practical situation?, has been found under the arguments of Shulman, (1986). These arguments are about sorting out of different forms of knowledge and their theoretical and practical constraints. He gave arguments about the nature of teachers' knowledge with research based principles as well as their theoretical and practical usage.

Propositional knowledge refers to the first of these forms of knowledge. First kind of propositional knowledge deals with research based principles. These principles come through empirical research, maxims of their practical value in the practice and norms of their ideological or philosophical commitments for justice, equality or fairness. Principles are the research based evidences of teaching or school effectiveness as observed by Shulman (1986) "A principle, typically derived from empirical research" (p. 11).

The second type of proposition observed by Shulman (1986) was as "The second type of proposition makes not a theoretical claim but a practical one" (p. 11).

The third kind of proposition discusses the norms for justice, equity and fairness, needed for teachers to apply in the practical situation. Shulman (1986) observed the third kind of proposition for its normative position as "They are neither theoretical nor practical but normative" (p. 11).

The second form of knowledge for a teacher is the case knowledge proposed by Shulman (1986). It has roots in the law education identified by the Dean of Harvard

School of Law as well as it has a value for teaching theory but not for practice. This form has been divided into prototypes, precedents and parables with its theoretical, practical and normative aspects simultaneously parallel to the division of propositional knowledge.

The third form of knowledge refers to the strategic pedagogical knowledge. It has a value in the situation where the principles contradict or the precedents of particular cases are incompatible whether their position is of theoretical, practical or normative. It is on the teacher to make the strategic knowledge helpful in the situation where the lessons from the single principle contradict each other (Shulman,1986).

With the discussion of different forms and domains of knowledge for teachers necessary for action in the classroom, it is easy to establish criteria for the assessment of teachers. It can be made possible on the basis of these forms of knowledge associated with other forms of knowledge for teachers, central to the teacher education programs. The other useful forms of knowledge helpful in examining the teachers as described by Shulman (1986) are, knowledge of general pedagogy, knowledge about learners and their backgrounds, principles of school organization, finance and management and the historical, social and cultural foundations of education.

2.3.2. Knowledge Base for Development of a Teacher

What type of knowledge is necessary for a teacher? It can be divided basically in two main areas, subject matter knowledge and pedagogical content knowledge (Fraser & Spiller, 2005). However, these two areas cannot be separated in classroom practices. How does a teacher relate his knowledge to the classroom practices? It depends upon the nature of theory taught in his pre-service training program. Teacher makes his

professional practice meaningful in the work place. The practice and the knowledge, when associated with evidence, become fruitful for students in an effective way. The above mentioned characteristics of teachers identified by Arends (1994) have been elaborated below:

2.3.2.1. Knowledge base to guide the art of practice

Teacher education is a field in which the concept of knowledge is not so simple. The student teachers are required to gain variety of knowledge and skills in different areas for future adjustment in the classroom to act in an effective way. The knowledge base in teacher education has been represented in a complex way and its stages, to be acquired by the student teachers, are multiple and interwoven (Wallace, 2003). Father Walter Ong was a first man who differentiated the content and pedagogical knowledge of a teacher. He established a chapter with name "Pedagogical Juggernaut" in his book titled "Ramus, Method and Decay of Dialogue." Till that this bifurcation was considered as an indistinguishable body of understanding (Shulman, 1986). The current research has suggested the identifiable base of knowledge for effective teachers and recommended that the practice must be based on what is known by the profession collectively. There is a need for professionals to be aware of "The current knowledge base" (Darling-Hammond, 2006; Fetler, 1999).

Professional teachers through effective and research based teacher education programs have control over the information that allows them to deal certain matters more insightful and effective than an average person does. At the same time, like other professionals (doctors, engineers and lawyers), the teachers have no complete knowledge

to answer all the questions and every problem cannot be solved by the use of best practice. It is important for the teachers to know and understand what is meant by the knowledge base for teaching? It is also necessary for teachers to understand the strengths and weaknesses of the scientific research that informs the current knowledge base for teachers.

For the purpose of knowledge base, three questions are important: (1) What does it mean to have a knowledge base about teaching and what domains of knowledge are most relevant? (2) How do teachers access and use knowledge? (3) What are the limits of the current knowledge on teaching and learning? The studies in education are about the variables, most studied and most relevant with learning to teach. These variables are associated with students' learning and how students' learning is affected by teachers' behavior and practices. Seven categories of knowledge, necessary for teachers, have been identified by Shulman (1987);

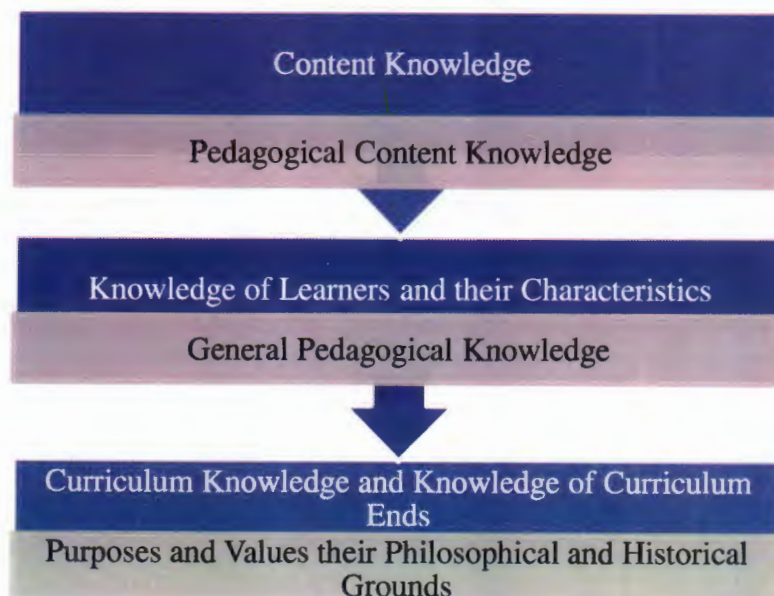


Figure 2.1. Knowledge necessary for a teacher (Shulman (1987))

2.3.2.2. Domains of content knowledge for teachers

Regarding the complexities of teachers' understanding and the transmission of knowledge in the minds of teachers, Shulman (1986) tried to answer the following questions: (1) What are the domains and categories of content knowledge in the minds of teachers? (2) In which form these categories are represented in the minds of teachers? (3) What are promising ways of enhancing acquisition and development of such knowledge? (4) What is the relation between the content knowledge and general pedagogical knowledge? With special emphasis on the content knowledge he introduced three categories of knowledge for teachers;

1. Subject matter content knowledge
2. Pedagogical content knowledge
3. The curricular knowledge

Despite the above three domains of knowledge, Shulman (1986) also identified some other categories with considerable importance i.e. knowledge about individual differences among students, generic methods of classroom organization and management, history and philosophy of education and school finance and administration. However, the above three categories may be considered as the general domains with greater importance of teachers' knowledge as under:

a. Subject matter knowledge

Positive correlations have been found in contemporary research, for teachers' preparation in subject matter knowledge and pedagogical content knowledge with their performance in the classroom as well as for students' achievements (Goldhaber, 2006).

Studies, regarding the predictive validity of trained teachers and teachers with no training for students' achievement, observed the better performance of the trained teachers than those with no such training. The training of teachers in subject specific methods showed higher correlations with the students' achievement than their additional training in the content area (Goe, 2007; Boyd, Grosman, Lankford, Loeb, Wyckoff , 2006). Monk and Dillon (1995) observed the good grasp of the knowledge about the necessary area of subject but not a single factor for teacher's effectiveness.

In the context of subject matter content knowledge, Shulman emphasized the structures of knowledge in different disciplines. These disciplines were developed in the mind of teachers through the Bloom's taxonomy of educational objectives, varieties of learning domains by Gagne's theory and organization of the structures of knowledge by Schewab. Schewab's structure of knowledge has been identified the most renowned form of the subject matter content knowledge.

Schewab cited in Shulman (1986) divided the structure of subject matter knowledge into two kinds of substantive structure and syntactic structure. Substantive structure deals with the ways in varieties to organize the basic concepts and principles for incorporation of facts of the discipline. Whereas, the syntactic structure discusses about the ways to establish truth or falsehood and validity or invalidity. Syntactic structure provides a set of rules to legitimate the concepts in a discipline and to find out what breaks the rules. The important thing for teachers is to know about the set of rules with their causes of truth.

b. *Pedagogical content knowledge*

Shulman's concept of pedagogical content knowledge refers to the knowledge of a teacher within the content knowledge most related to teachability beyond the concept of subject matter knowledge. It deals with the procedures through which the subject matter content knowledge is delivered effectively. Shulman, here, included the most regularly taught topics in one's subject area, the most powerful forms of representations, most powerful analogies, examples, illustrations, explanations and demonstrations through which the subject matter knowledge becomes comprehensive to others. Pedagogical content knowledge makes easy for students to understand the topics with the help of understanding of a teacher about what makes the specific topics easy or difficult.

Shulman (1986 p. 12) described this type of knowledge as;

Special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding, belonging of content and pedagogy and how particular topics, issues or problems are organized represented and adopted to the diverse interests and abilities of learners (Shulman, 1986).

c. *Curricular knowledge*

The third type of knowledge necessary for teachers identified by Shulman (1986) was a curricular knowledge. It was observed as the *materia medica* through which the teacher could draw different tools to exemplify the particular content. Shulman (1986) identified this knowledge as "With particular grasp of the materials and programmes that serve as tools of the trade for teachers." A teacher should be aware of the curriculum materials being delivered to the students of the same level and class or of different classes.

Three forms of knowledge have a pivotal role for teachers to develop their professional competence. These three forms of knowledge have been identified by Shulman (1986) as propositional knowledge, case knowledge and strategic knowledge. These are those forms of knowledge through which each of the general domain content, pedagogy and curriculum may be expressed and organized.

Pre-service teacher education contains both theoretical and practical components to prepare future teachers according to the demands of real world situations. The campus based courses form the theoretical component of the training program and the practical component shapes the theoretical component with necessary competencies and skills according to the needs of the students.

2.3.3. Teacher Education & Professional Practice

Starting with the work of Dewey and Schon, the problem, how do teachers apply their theoretical knowledge in the real world situation?, has attained the considerable attention by the researchers as identified by the work of Darling-Hamond (2000), Schulman (1986) and Zeichner & Liston (1990). Dewey (1933) observed the reflective and routine actions of teachers, whereas, the work of Schon (1983) provided guidelines both for teachers and teacher educators to apply theory into practice. According to Schon (1983) theory and insight are the important factors to determine the teacher's work, however, these factors do not have considerable impact on teacher's behavior as teacher makes decisions according to the situation in the classroom.

A considerable body of research in teacher education conducted in outcome mode increased the need of research in the context of theoretical knowledge and professional

practice. A number of research studies can be seen within the context of the effectiveness of teacher education programs in the Research Repository of Pakistan (eprints.hec.gov.pk). Only the few studies, especially in the context of pedagogical preparation of pre service teachers, are related to the concept of the coherence between theory and practice (Jumani, 2013). Mayens & Hatt (2012) emphasized the need to examine the pre-service teachers' programs. They also focused to what extent the pre-service training courses addressed the elements of change in teachers' professional focus from their teaching to students' learning?

There are research evidences that the pre-service teacher education has an impact on teachers' pedagogical skills as well as on their philosophies of teaching (Darling-Hammond, 2000). However, there have been observed differences among the impacts of pre-service training on classroom practices. Some researchers have observed little impact in this regard (Lampert & Ball, 1999; Stuart & Thurlow, 2000). One important aspect of teacher education for its influence on teachers' practices showed 'washing out' effect for novice teachers. They developed their own theories, based on their previous experiences about teaching. However, with the passage of time in school, they developed their practices with traditions of what their senior teachers did (Flores & Day, 2006).

Other factor which caused less effect of pre-service teacher education on teachers' practices was the unsupportive environment of school for novice teachers to implement knowledge and skills in the realistic situation (Achinstein, 2006). Besides, all these arguments, the positive aspect of pre-service training was found the better satisfaction level of trained teachers than teachers with no such training (Darling-Hammond, Chung, & Frelow, 2002).

The nexus of the study was about the international debate of the question within the context of Pakistan, how did the student teachers become able to turn their pre-service training knowledge into action in the workplace? (Louden, Rohl, Gore, Greaves, McIntosh, Wright, Siemon, & HouseLevine, 2005; Bates, 2005). Wallace (1998) identified two types of knowledge that the teacher training programs should provide to the student teachers. The received knowledge i. e. the theoretical knowledge and the experiential knowledge, a knowledge through direct contact of student teachers in the real setting of the classroom, were the two types of that knowledge (Al- Mahrooqi, 2011).

2.4. Professional Development Process of Teachers

The most important element in the development of learner's quality regarding knowledge, skills, attitude and character has been only in the form of teacher, his quality of knowledge and professional development. It has been observed through the literature that the quality of teachers' qualifications as well as the quality of pre-service and in-service training determined the quality of a teacher (Agha Khan Foundation, 1998; Sharma, 1993). The professional development of teachers has strengthened the education system through an experiential learning of teachers and the quality of teaching force has been considered a determinant of the quality of education (Borko, Elliott, & Uchiyama, 2002; National Institute of Education, 2009).

The knowledge and the professional development of teachers are highly dependable on the process through which the teachers are prepared and developed for a real world. Life experiences are the bases for adult learning with their skills development as well as their understanding of the world in which they live and work. Andresen, Boud,

and Cohen (2000, p. 225) observed; "The experience of the learner occupies a central place in all considerations of teaching and learning."

Theoretical knowledge and professional practice travel side by side and to reflect critically on one's own practice, every individual makes use of four distinct lenses (Brookfield, 1995). Pearce (2005) has identified three of these four distinct lenses as the autobiographies of learners and teachers, colleague's experiences and the theoretical literature as a theoretical framework. The development process of a teacher results in the form of a quality outcome of teachers. They develop wise judgments and designers of rich learning interactions in the classroom which ensure quality of entire education system. The quality of teaching in schools can be directly attributed to the preparation of teachers through pre-service training (Darling-Hammond, 2000, Iredale, 1996). Therefore, the preparation of teachers through a sustainable program needs continuous and innovative steps to meet the highly changing demands of the society in the global perspectives.

The particular social communities are developed through the teaching practice. They have a full capability to construct and develop their identities and understanding with active participation and engagement with others (Lave & Wenger, 1991). Wenger (1998) identified three forms of belongingness to a community of practice through which the individual's learning and development are made possible. These three forms of belongingness are the engagement, imagination and alignment. Individuals engage in the community with understanding and adjustment to the new situation. They construct their understanding according to the new situation which results in their adjustment of the environment. Therefore, the environment of teaching practice provides an opportunity to

the prospective teachers to experience their newly learned theories through the teacher education program at campus in the real world situation of the classroom.

Different reports and recommendations for the reforms of teacher education in Pakistan confirmed the idea to benefit fully from the pre-service teachers' training. Therefore, it is important to provide opportunities to the prospective teachers to practice competencies and skills in practical situation to combine their theoretical knowledge in the real world situation at schools. Therefore, as a key element of formal teacher education programs, the teaching practice should have a capability to combine theory and practice in proper way (European Trade Union Committee for Education, 2008).

2.5. Gaps between Theoretical Knowledge and Professional Practice

Wubbles, Korthagen & Brekelmans (1997) identified three hypotheses for the description of gaps between theoretical knowledge and professional practice. These three hypotheses are:

1. **The nature of theory and practice:** This hypothesis deals with the difficulties in applying the theoretical concepts in classroom practice.
2. **Compartmentalization:** It deals with the cognitive psychological perspectives and also with the assumption that if the theory is taught without the connection of practice then it will be applied poorly in the practice.
3. **Preconceptions:** This hypothesis discusses the assumption that the student teachers come in the teacher education programs with their knowledge, beliefs and attitudes. Therefore, it is necessary for teacher education programs to address

these preconceptions of student teachers to fill the gaps between theoretical knowledge and professional practice.

What constitutes the theoretical knowledge in teacher education and what is its relationship with the practical appliances in the realistic context? This question has strong bases, starting from the concept of knowledge given by Aristotle, in three forms episteme, techne and phronises. The episteme deals with the general knowledge or the knowledge about 'that and why' used as synonym of the theoretical knowledge. It has no variations with time or space and it enables the people to go beyond their habitual behavior. It also enables to take critical view for searching alternatives and new thoughts for practice with occasional value in the classroom (Eisner, 2002; Brunsted, 2007). Universities traditionally emphasize theoretical knowledge rather than practical application (Ulrick & Smith, 2011). Techne deals with productive nature of knowledge or about knowing how. It deals with the skills necessary for practical application of the theoretical knowledge (Brunsted, 2009).

Episteme and techne provide guidelines for action but phronesis, a practical wisdom, is also required to act adequately and it is the result of the interplay between former two categories (Brunsted, 2009). There has been a lack of integration between the different kinds of knowledge which resulted in a common criticism on teacher education (Sim, 2006). The researchers observed limited impact of teacher education on teachers' practices in school and they thought it to be achieved through modeling and promoting new visions of learning (Lunenberg, Korthagen & Swennen, 2007).

The phenomenon of theory practice gap can also be seen in other professions and a considerable research has been conducted in this regard (Brouwer & Korthagen, 2005;

Pfeffer & Sutton, 2006). The researchers stated succinctly that the teaching was not alone in confronting this fundamental gap between theory and practice. Korthagen (2011) has observed the dominant role of the transfer of theoretical knowledge in teacher education for professional practice. He identified no change in the traditional concept of teacher education all over the world. He also introduced the new approaches in teacher education as sophisticated procedures to engage student teachers in the particular theory. The dominant line of thought existed in the concept of transferring theory to the student teachers and this line of thought lead to the gap between theory and practice.

Similar to the worldwide scenario, the situation regarding the coherence of the theoretical knowledge with professional practice in Pakistan does not differ. A considerable body of research observed this gap and identified the problematic nature of teacher education. It appeared to be specific of the poor application of skills and knowledge in the realistic context of classroom. The student teachers were also trained to use traditional methods of teaching in spite of their proper training with well equipped nature of latest technologies (Aisha, 2002; Yasmeen, 2005; Ali, 2005; Khan & Awan, 2005; Akhter, 2011).

2.5.1. Causes of Gaps

The difficulty of integrating theory and practice in professional education has long generated much debate but resulted in few solutions (Korthagen & Kessels, 1999). Emerging from the body of theory-practice research was a number of different interpretations about what constituted the gap between the two. Golden-Biddle, Estabrooks & Germann (2003) classified these interpretations in three ways;

First, they referred to the prevailing view that identified the theory-practice gap as a result of the great division or chasm between two communities with often very different cultures. Associated with this view was the notion of bridging the gap and developing best practices of transferring knowledge that could be generally applied.

Second, there was an emergent view that attributed the existence of the theory-practice gap to organizational deficiencies that prevented practitioners from implementing to practice the theory learned in pre-service preparation (Golden-Biddle et al., 2003).

Third, they discussed a novel alternative view that considered the theory-practice gap as an opening or pass that connected people participating in separate communities and that fostered communities of practice. Treating the theory-practice gap as positive, as something to be solved and resolved, proponents of this view regarded the gap as a connective and essential part of producing and using knowledge (Golden-Biddle et al., 2003).

Contemporary views on the theory-practice gap in pre-service teacher education are most commonly relevant to the first of these three views. One of the major and long-standing challenges of pre-service teacher education programs has been to strike a balance between the theoretical knowledge and practice of the profession (Bates, 2010; Smith, 2008). The literature contains a large body of research identifying significant inadequacies in teacher education programs enabling students to apply the knowledge and skills of their pre-service preparation in the workplace (Bates, 2005; Louden et al., 2005; Murray, Nuttall, & Mitchell, 2008).

Teachers, in their initial years of profession, expressed frustration over coursework for which they generally perceived little value intellectually or practically. Most of them found a considerable difficulty in explaining the relevance of educational research and theory with their teaching. Smith (2008, p. 3) put forward a similar view in suggesting that the problem was long-standing and pervasive in the 70s and 80s. There was a growing awareness of students, researchers, practitioners or the professionals that campus-dominated or front-end programs did not seem to deliver what was required in the teaching jobs for which students were being prepared. Furthermore, it was clear that on campus, the theory was of minimum effects on what counted as teacher education in comparison with the domesticating influences of the school.

This attributed the failure of pre-service programs to effectively prepare students according to, among other factors, the conservative practices and mindset of teacher educators. They lack the energy, imagination or determination to create change and inevitably succumb the practices of the status quo (Smith, 2008). Tom (1997 p. 130) commented in opposite that "Although teaching is a deeply intellectual enterprise, in both its pedagogy and its content, teaching is also a fundamental practical activity." Levine (as cited in Hartocollis, 2005 p. 17) also acknowledged a widely-held concern in stating that "One of the biggest dangers, we face, is preparing teachers who know theory and know nothing about practice."

2.5.2. Bridging the Gaps

The gaps between theoretical knowledge and practice in education has been observed in the old paradigms of research in education. It was assumed that the

knowledge about education has been generated by the scholars in universities, laboratories and libraries. The knowledge was then assumed to be transmitted in the teachers. The new assumption about the research is that if research is to have a positive effect on teaching and learning, the teachers must be full partners in education as teachers apply the findings of research into daily classroom practice (Lagemann, 1999).

Lagemann further recommended that, if a true knowledge community in education has to include teachers, the efforts would have to be made to bridge current divisions between the teacher education and the education of scholars in education. This would be made possible only through the involvement of teachers into the research discussions agenda and research standards.

Thiessen (2000) described three phase pedagogical framework as essential for teacher education;

1. Studying about skills
2. Observing and trying out skills under simulated and actual classroom conditions
3. Comparing and elaborating skills in classrooms

It was considerably disquieting to note that as far back as the 1920s Dewey (1928) expressed similar concerns. Some researchers suggested that separating theory from practice created a false dichotomy and that teaching was a profession in which theory was embedded in and inseparable from practice (Carr, 1987; Lenz Taguchi, 2007). Lenz-Taguchi (2007, p. 278) argued that because theories in education were constituted by and perpetually reconstituted as collectively and culturally-specific materialized meaning-making. It was impossible to determine where the theory ended and practice began.

Despite the diversity of opinions about theory-practice in teacher education, it has been widely perceived inherently problematic in pre-service programs.

The way of overcoming this issue, argued a number of researchers, lies in an overhauling of traditional programs. Ethell (1997), for instance, argued that reforms in teacher education could only be met through a resolution of the dilemma of the theory-practice nexus with respect to, learning to teach. Adopting a similar view, Smith and Moore (2006) concluded that education faculties must change their values about the priority of theory to practice if they had to respond adequately to the long-standing criticism directed about the capabilities of beginning teachers.

A considerable body of research has been found to meet the issues regarding the gaps between theoretical knowledge and professional practice in teacher education w. r. t. different fields of subjects. Ortega (2006) found that the traditional model of learning influenced the concept of theory and practice and how did these two messages transmit. His study was about to find the ways to bridge the gaps between theory and practice in teacher education and revealed that the trainers' instruction affected the trainees' performance in teaching practice. The study also revealed that the trainees were also engaged in self evaluation during their teaching as well as they also become able to reflect on their practice to a limited extent.

Cabaroglu (2014) conducted a study of "Revisiting the theory and practice gap through the lens of student teacher dilemmas" and identified three categories of dilemmas faced by the student teachers while teaching in the classroom during their teaching practice. These were in the form of teaching related, professional identity related and future career plan related dilemmas.

Teaching related dilemma included medium of instruction, teaching methods and techniques, materials with choice and use, behavior management, lesson plans and error correction and feedback. The dilemma of professional identity related included feeling like a teacher versus being a student, wanting to care for students versus being tough, feeling incompetent in teaching versus feeling competent and developing a personal teaching style versus adopting a teaching style to please significant others. The third category of dilemma related to future career plan included working in a primary school versus secondary school, working in a private school versus public school and to be a teacher or not.

Further, Cabaroglu (2014) revealed that the mismatch between the theory and practice was found multifaceted with no straight forward single solution. Different contexts and subjects might require different solutions. He found that the student teachers coped with dilemmas according to different strategies and recognized; "A significant incongruence between what they learned at university and what they observed and experienced in practice schools" (p. 103). He also concluded that the student teachers considered the university based learning as episteme rather than phronesis.

2.6. Role of Practicum in Teacher Education

The most important factor in teacher education has been a practicum experience in terms of pre-service teacher education with ongoing professional development (Howitt, 2007; Loughran, Mulhal & Bery, 2008). To create expertise in student teachers so that they can meet the challenges of future classroom demands and issues has been a basic function of practicum experience in teacher education program (Arends, 2004).

Practicum might be considered as a means of providing an authentic hand on experience (Ulvick & Smith, 2011).

Brunstad (2007) accepted the ability of practicum for providing opportunities to the student teachers to learn from their own and others' experiences. The practicum provides the "neophytes" some type of pre-service training which serves as an opportunity to be exposed to the realities of teaching and performance of professional activities. It has been the only opportunity for students to test theories learnt and ideas developed in the classroom, as they came in contact with real life situations for the first time. Teaching practice has provided trainees, the opportunity to utilize various teaching methods in actual classroom/school conditions under the constant supervision of competent and experienced teachers.

A special focus of climate and mentors is needed in practicum with an overall coherence of the teacher education (Beck & Kosnick, 2002; Zeichner, 2002). The experienced teachers at schools play a role of a mentor which has been defined according to the Cambridge Advanced learner's Dictionary and Thesaurus as a person who gives a younger or less experienced person help and advice over a period of time, especially at work or school. The practical aspect of training aims to improve confidence, convert theoretical knowledge into practice, learn about students behavior, develop skills to deliver subject matter knowledge, find out the strengths and weaknesses of the program, develop core-set of pedagogic values and to receive constructivist criticism in novice teachers so that they can acquire skills for which a competent professional teacher adheres to (Qazi et al., 2008).

Positive or negative attributes develop in student teachers through the practicum component. Niguyen (2014) found that the student teachers experienced positive and negative emotions as a result of the personal factors and socio-cultural context of pre-service teaching during teaching practice. The previous studies revealed the little impact of teaching practice on student teachers' skills and its failure to achieve the desired outcomes for professional development of teachers (Korthagen et al., 2006; Wilson, 2006). However, the importance of practicum cannot be dismissed as it is a way to apply and create sound knowledge for instructional process. Studies confirmed the effects of practicum regarding the preparation of the effective teachers in real classroom settings (Good, 1979). Stones & Morris (1972) cited in Qazi, et al. (2008) revealed three aspects of teaching practice for which it has been an integral part of the teaching profession. They pointed out its importance in the sense of developing teachers' knowledge structure, instructional framework and students' learning mechanism.

The practicum experience has been a beginning of the professional development of a teacher. It provides an opportunity to the newly qualified teachers to acquire practical knowledge and skills necessary for their role as an experienced professional in the classroom. The practice teaching includes all aspects of the teaching profession inside and outside the classroom (Farrel, 2009). It plays a part in work integrated learning educational programs through which the learning and its workplace application can be combined and integrated (Atchison, Pollock, Reeder, & Rizzetti, 2002). The practicum has been a part of student teachers' training which has provided them both professional knowledge and skills to behave as practical, effective and quality based teachers. The professional knowledge and skills, obtained through the practical

involvement of teachers in the real world situation, has determined the quality of teaching (Exley, Walker, & Brownlee, 2008). According to Chandra (2004), application of practical knowledge in the classrooms is possible through acquiring sound knowledge and up-to-date skills with the help of continuous training. It has been the most critical factor in developing teaching skills and acquiring pedagogical knowledge (Tang, 2002). It has been an important source of serving as a bridge between theory and practice in teacher education (Darling-Hammond, 2006).

The practicum has provided an opportunity to foster meaningful teaching experience only if the theoretical knowledge and evidence based teaching procedures, taught through the method courses, are aligned (Zeichener, 2010). The practicum experience has been attributed in the sense of good practice, its effectiveness to assist in the development of practical skills as well as its capacity to deal with the unfamiliar problems faced by the student teachers. It has been dealt as a pathway to align with the curriculum in the educational programs. The practicum component in teacher education has been perceived as the most valuable component of teacher education by the student teachers as observed through the different research studies (Chiang, 2008).

There has been a great debate through the quality enhancement programs of Higher Education Commission, about how should the teacher education programs operate in Pakistan? The concept of work integrated learning arises through the good practice concept of practicum. It has been also interpreted in the literature as an umbrella term used for all educational programs. The learning and its workplace applications are combined and integrated in this concept, whether this integration is in the industry or university as well as in the real or simulated form (Atchison et al., 2002).

Two types of courses, subject matter based and pedagogy related, are taught at campus. The subject matter courses equip the student teachers with substantial subject matter knowledge, whereas, the pedagogical courses equip them with pedagogical content knowledge (Smith & Lev- Ari, 2005).

2.7. Practicum and Effective Training

The practicum provides an opportunity to the trainees as well as to the trainers for applying different skills, knowledge and competencies acquired through the on-campus activities in the realistic context. The effectiveness of training has been deeply concerned with the concept of acquiring knowledge and skills for teachers and to use them as professionals for different specialized tasks in the classroom and it has been valued through different research studies (Ayers, 1989; Alawiye & Williams, 2001).

Several factors necessary for the effectiveness of training program has been directly involved in the practicum experience of student teachers. The student teachers have direct opportunity to involve in reflection on instructional goals, knowledge about students' characteristics and needs, teaching methodology, sequences in the content and its level, teaching materials with their use in the classroom and assessment by their colleagues, administrators and mentors. These are the indicators of the quality of their training, subject knowledge and its delivery, and their management skills in the classroom assessed by the senior teachers and principals (Cao & Nietfeld, 2005; UNESCO, 2006).

In Pakistan, different studies revealed the problematic nature of practicum in teacher education programs. Azeem (2011) conducted a study regarding the problems of

prospective teachers during teaching practice and identified the set of problems in teaching practice. He found that the majority of schools did not prepare the time table for prospective teachers, prospective teachers did not get training of implementing different teaching methods and the student teachers did not have information about the rules and regulation of the practicing schools.

2.8. Teaching Practice and Professional Development

Teacher education institutions are responsible for developing knowledge and skills into the beginning teachers according to the professional needs of the teaching profession (Ali, 2011). Student teachers get an opportunity for their development as professionals through the collaboration of schools and teacher education institutions during teaching practice. This collaboration results in the development of professionalism in newly prepared teachers. The professionalism has been considered necessary for quality enhancement of the education provided to the new generation according to the international and global standards of socio-economic development. It has defined the teachers' effectiveness in terms of best professionals as well as with a profound effect on students' performance (Ingvarson, 1997).

Today, in the context of new challenges of developing higher order thinking, technology use and demand for new styles of teaching in the classroom, the teacher education has made easy to develop professionalism in the novices. It has become possible through the innovative practices in coordination with highly trained professional teachers in the real world situation of the classroom (Hargreaves, 1995). Teaching

practice provides full range of experiences through which the learning of teachers takes place.

A continuous shift in the perceptions of student teachers for their professional identity has been observed through teacher education program. Lamote and Engels (2010) identified that the practical experience of classroom teaching caused a shift in the development of professional identity of student teachers as they focused less on the subject matter, on maintaining order in the classroom, on the long term educational qualifications and their self efficacy decreased. Lieberman & Pointer (2010) has identified different opportunities of learning for teachers in schools through the teaching practice. They identified three settings of learning for teachers in schools as; (a) Direct teaching (b) School based learning (c) Learning out of school. The learning of teachers as professionals occurs through a complex process for which a number of settings have been identified. Rizvi (2003) has identified classroom setting as an important one of these settings. He elaborated that the classroom setting involves a number of activities in the form of management, classroom instruction, communication and evaluation techniques.

The practicum experience includes the mentorship of tutors in schools and it has been considered as an important factor in the development of prospective teachers. It has been found more effective and influential on the student teachers' attitude towards teaching than the influence of university professors (Richardson-Koehelr, 1988). It has also been identified an important to make coordination between the school mentors and the university professors for the effective development of student teachers as teachers of the real world contexts (Casey & Howson, 1993).

The student teachers benefit from the mentors as role model regarding the understanding of the teaching profession. Pedagogical knowledge including instructional design, managing learning activities and assessment of learning are the necessary factors to be addressed in the teaching practicum. These factors have been considered as the expected key learning outcomes of the practicum (Smith & Lev-Ari, 2005). The most important and key factor of the teaching practicum, to prepare the student teachers as professionals, is their action regarding instructional activities or the instructional design. It includes analysis, design, development, implementation and evaluation of the lesson (Strickland, 2006).

The professional development process of student teachers involves full range of activities and experiences of the teachers far from the limited concept of necessary knowledge and skills for teaching. A teacher, participating in the professional development activities, has been attributed to operate with a deeper sophisticated knowledge base. A professional teacher has a capability to make decisions regarding different aspects of school innovation and development and to get opportunity to benefit from the continued experiences, systematic study and other related processes (Glatthorn, 1997). The professional development involves changing the person, the teacher is, and it has been expected to equip teachers with capabilities as shapers, promoters and well informed critics of reforms (Louden, 1992; Dilworth & Imig, 1995).

The professional development process involves both pre-service and in-service acquisition of knowledge, skills and attitude through the variety of experiences in a planned way. Maynes & Hatt (2012) identified different stages of professional growth for professional maturity of teachers through which the consistency of teachers'

engagement in the practices, regarding pre-service to in-service elements, have been identified as under;



Figure 2.2. Stages of professional growth for teachers' professional maturity

(Mayenes & Hatt, 2012).

2.9. Development of Teaching Skills & Competencies

2.9.1. Teaching Skills & Competencies

The question arises here is, how do teacher education programs develop skills in student teachers which help them to become effective teachers? To answer this question, the necessary skills for a teacher must need to be identified through the literature. Hustler & McIntyre (1996) identified the following set of teaching skills necessary for a teacher while demonstrating in the classroom;

A. Planning the lesson: It involves the planning of objectives of lesson as well as the learning activities to be conducted during the instructional process.

B. Lesson presentation: It includes the delivery of content and strategies adopted to achieve the objectives of lesson.

C. Lesson management: It deals with the presentation of learning material in sequence and to formulate the content with clear objectives.

D. Classroom climate: It demands the classroom environment to be supportive for learning and to maintain the sequence of activities in a friendly and pleasant atmosphere.

E. Classroom discipline: It enables the teacher to respond appropriately to the disruptive and off- task behavior of the students.

F. Assessment and evaluation: It requires to use questioning techniques as well as formative and summative techniques to judge the progress of students.

An internship manual was developed, consisting of 200 pages and synthesized through the research literature, and it was helpful for student teachers, cooperating teachers as well as for the supervisors at the University of Saskatchewan. The manual included nine categories of professional knowledge attributes necessary for teachers that are according to Ralph and Noon (2004):

- a. *Personal and professional attributes:* It identifies the expectations about student teachers to be with warmth, patience, tolerance, empathy and respect during their stay at school.
- b. *Lesson planning:* Through this category, the student teachers are expected to compose daily lesson plan in written form and to organize the materials necessary for teaching in the classroom according to the planning.

- c. *Unit planning*: It involves the planning of units with defining the key concepts and integrating the related content with other subject areas.
- d. *Presentation*: It is the delivery of content according to the planned teaching and learning activities.
- e. *Classroom management*: It enables the student teachers to create such conditions that the both teaching and learning activities can be conducted in a smooth way. Attaining the attention of students, demonstrating awareness in the students to avoid disruptive behaviors and to take immediate interventions are the examples of this category.
- f. *Questioning*: The student teachers are expected to use appropriate questioning skills and equal distribution of questions among the students.
- g. *Responding*: It includes the reinforcement of students for correct answers and to avoid repeating of students' answers.
- h. *Variety of instructional methods*: A repertoire of teaching methods is expected by the student teachers to use with different effective skills.
- i. *Assessment/Evaluation procedures*: It involves using a variety of formative and summative assessment techniques as well as to maintain the records of the assessments.

Student teachers, during their teaching practice, take opportunity to interact, coordinate and communicate with different persons to achieve their learning goals. The major purpose of their interaction is to understand and develop their professional identity. The concept of professionalism is acquired by the student teachers through participating in a variety of activities. It includes the planning of lessons to teach the students,

different professional activities of their engagement in decision making process as well as to involve in the real life of school. Lam and Tsui (2013) identified five subject learning outcomes to meet the requirements of teacher education program. These are:

- a. *Teacher's professionalism*: It includes the development of attitude and skills necessary for a teacher to act in school and society with a professional attitude.
- b. *Student centered pedagogical practices*: It refers to the development of a capability of a teacher to engage the students through effective learning without discriminating them on the basis of their needs, backgrounds and abilities.
- c. *Assessment and evaluation*: It relates to the development of skills and knowledge necessary to assess the students and to make decisions regarding the learning of students and their development.
- d. *Curriculum planning*: It includes the practical skills necessary for a teacher to arrange, design and implement lessons and units having appropriate alignment with curriculum contexts.
- e. *Curriculum theory & knowledge*: It deals with the theoretical knowledge to understand the nature and purpose of curriculum policies and theories relevant to the educational practices.

2.9.2. Strategies for Development of Teaching Skills

To answer the question about strategies to develop the teaching skills in student teachers, the most valuable information was suggested by Parsons and Harding, (2011) and Taylor and Parson (2011) through their twelve years research efforts. These suggestions have been given briefly in the following;

1. Action research and field experiences through their engagement in the real world situation of the classroom may help them to become effective teachers. They can identify, what they have done and what they have not done, through these engagements. They can explore the problems of students regarding diverse learner abilities, language delays or deficiencies, mixed socio economic communities, multicultural populations and pressures of high stake testing through the action research.
2. Teacher education programs should focus on the collaborative activities of student teachers through which they can find creative spaces for critical thinking and innovative practices modeled through their professors' norms of creative thinking, innovation and thoughtful reflection.
3. Building classroom cultures supportive to community, agency and service. The word "community" stands for working together and "agency" stands for ones' belief about making a difference and the service of doing good things for others.
4. Working on real issues of the classroom in transparent way is helpful in preparing student teachers for future professional demands. These issues of teaching and assessment procedures may be discussed with experienced teachers to develop open thinking in student teachers.
5. Differentiated learning should be promoted in student teachers with the assumption of different individuals having opportunity to learn different skills so that they can imply these skills in the classroom for students with individual differences.

6. Student teachers should be allowed to consider and discuss different cultures in the classroom and to build these diversities to relate their students with an age of social networking.

Professional development promotes professional thinking as well as the professional practice necessary for indulging the knowledge, skills and attitudes towards the learners in the institution. Therefore, the professional development can be defined including both theoretical and practical aspects of the professional knowledge regarding the specific profession as identified by Eraut (1994) cited in Rizvi (2003) "the specialized knowledge and expertise and ethical codes and conduct."

2.10. Technology in Teacher Education

2.10.1. Technology in Classroom Instruction

Teacher education and technology remained in close relationship throughout the history. The history of the use of technology in education began with the start of distance courses since 1890. However, the use of technology in education on large scale has been observed since 1990 (Wallace, 2003). Rumble (2001) observed the character of distance education shifted from modernist form to postmodernist developments. Wallace (2003) observed it necessary that a teacher teaching with technology should not only be aware of the subject matter knowledge associated with the new technology but he should also know about the details of using the technology. He further recommended that the teacher should know where the technology was located and used in the curriculum and he should be aware of its pedagogy for improvement of students' learning.

Teacher education includes both developing personal and professional skills as major goals of classroom practices. It has been believed as a complex phenomenon due to its diversity in regional circumstances, participants, different designs and philosophies as a challenge for educators to apply theoretical conceptions and philosophies in practical fields (Gofree, Oliveira, Serrazina, & Szndrei, 1999). There has been focus on the use of technology in the classroom for effective results regarding learning outcomes. Specifically, it has been developed after the implementation of psychological principles to motivate the learners as well as for solving familiar and unfamiliar problems of the students in the classroom. Technology use, in training for teachers, has created technical expertise in student teachers through experiences and all experiences are different in their educative capacity (Dewey, 1938).

Digital learning technologies play a critical role in bridging the gaps between the theoretical knowledge and professional practice in schools as the teachers are concerned with the digital learning culture in schools. This aspect of training the teachers in pre-service training programs needs more focus. Today, with the use of digital learning technologies in classrooms, more results, regarding the effectiveness of teaching in terms of students' engagement, teacher student connections, reducing reliance on worksheets and whiteboards as well as training of teachers with the coherence of theoretical and professional practice, can be achieved (McDonald, 2012).

It is the use of technology which makes the leaning process more effective experience for learners due to its relevance to the students' psychological needs. The process of teaching has been considered as the heart of education. A valuable demand for teachers in the improvement of education system is meaningless without their expertise in

knowing of pedagogy and organizational and technical skills (Sarita & Tomars, 2004). The pre-service training can be referred to as the foundational process for professional and career development of teachers (Sarita & Tomars, 2004). Therefore, the training of teachers can never be separated by the use of technology in the theoretical and practical aspects of teacher education.

The problem that occurs significantly in the field of teacher education is the gap between the development of evidence based knowledge and practical use of technology. The effective and actual practice in the initial teacher education, as something studied, does not tell about the actual practice of the people what they do actually in the teacher education programs (Coachran-Smith & Fries, 2005). The issue of the use of technology for the preparation of initial teachers has strong links with the quality of teachers' development. It has been internationally recommended that the success or failure of any education system depends upon the quality of teachers prepared through the teacher education programs (Darling- Hammond, 2010; Qvortrup, 2008).

Today, the researchers have identified the relationship of technology with pedagogy and content as an important source of learning in the student teachers' professional development. Lock (2007) identified the responsibility of educators to provide such learning environment for student teachers so that they can develop an appreciation of and they are charged to provide facility with the pedagogy, content and technology relationship.

Technology use for professional development of teachers has evidences of powerful impacts in the fields of self efficacy, development of competencies and skills for classroom practices. Anthony, Gimbert & Fultz (2013) observed significant gains of

first year teachers in self efficacy after attending six or more e-coaching sessions. They also recommended programmatic efforts of blended learning as scheduling adjustment of online component of blended learning may be accompanied with policies and incentives. These policies and incentives have an encouragement for using these technologies for professional development of teachers. The student teachers' involvement, in developing and using innovative technologies, has indicated rich outcomes related to their professional knowledge development as identified by Kearney (2013). Kearney (2013) suggested the involvement of student teachers in filmmaking as generative task with rich outcomes of their professional knowledge development. He also suggested the significant role of learner's generated digital videos projects in teacher education.

2.10.2. Technology and Problems in Teacher Education

One, who is related to teacher education programs, can understand the barriers impeding efforts of the teacher education institutions to integrate the educational technology into the teaching learning environment of student teachers. Subjects or topics related to the educational technology are included in the curriculum of teacher education programs. The problem lies in their practicality or to use them as a catalyst for learning of teacher candidates so that they can become aware of the art and craft knowledge. The barriers which hinder the ability of teacher education programs to integrate the educational technology into the teaching learning environment can be understood through a report. The report consisted of four years institutions' survey under the umbrella of US Department of Education. The barriers from major to minor extent, regarding faculty members, are pointed out as;

- 1) lack of time
- 2) training
- 3) interest
- 4) Educational technology infrastructure

While discussing the use of educational technology in the practices of teacher candidates during the field experiences some barriers, which hindered their ability, were pointed out in the form of;

- 1) Competing priorities in the classroom as a barrier to the educational technology practice regarding skills and knowledge
- 2) Availability of educational technology infrastructure
- 3) Lack of training and skill, time and willingness of supervisory staff
- 4) Limited skills or knowledge regarding teacher candidates was not reported as substantial barrier (Kleiner, Thomas & Lewis, 2007).

The pedagogical practices of student teachers, embedded with information and communication technologies, are helpful in developing their identities as teachers with effective and purposeful repertoire. The contemporary demands of students can be met with their considerations as digital natives (Prensky, 2001). However, the difficulty in using the information and communication technologies as learning technologies in training programs is that there are evidences of using these technologies as a source of social entertainment of the student teachers. Whereas, their use as learning technologies has been marked as low in the literature (Kirkwood & Price, 2005).

2.10.3. Strategies for Technology Integration in Teacher Education

The integration of technology in pre-service training programs has two powerful aspects. First, the concept of information and communication technology to be replaced with the practical concept of digital learning technology (DLT). Second, the integration of digital learning technologies in pre-service training programs rather than the introduction of information communication technology just as an isolated ICT course. This outcome can only be achieved through the integration of these technologies in the curriculum as well as in the pedagogy of teacher education programs urged by Jacobson, Clifford & Frieson (2002). For incorporating technology skills in pre-service teachers' pedagogical content knowledge, it is necessary to provide them opportunities for creating, developing, implementing and evaluating the instructional activities (Kariuki & Duran, 2004).

In the context of integrating digital technologies in teaching and learning environment of digital natives, the classroom needs more emphasis on the use of primary sources or digital materials. It is necessary to make more effective lesson plans as well as their use in the professional development of teachers in pre-service and in-service training programs. The studies regarding the use of digital materials by the teachers illustrated the benefits as well as the barriers for teachers. The benefits identified in the research studies have been concluded that the digital technologies helped to engage students more effectively in the classrooms. They experienced more authentic learning and these technologies were helpful in developing of illustrating concepts and providing examples. These technologies were also helpful to integrate inferential, analytical and critical thinking skills in students with eliciting content understanding (Fry, 2010).

The use of digital primary sources has been proved beneficial to the teachers in the classrooms as well as in their training programs, however, there have been observed the complex barriers in their application. Friedman (2006a) identified three types of such barriers in the use of digital primary sources in the classrooms; (a) The teachers' perceptions regarding digital sources for more time consumption (b) State standards in the context of teaching (c) Limited time for content teaching according to the outlined standards. He also elaborated the curriculum development process according to the state standards and the use of standardized tests, causing rote learning, as the major cause of the limited use of digital primary sources in the classrooms (Friedman, 2006b). Hicks, Doolittle & Lee (2004) also observed that the teachers consumed greater time in using the web based technologies in the classrooms. Some other studies identified similar aspects regarding the use of primary digital sources. Their use depends upon the friendly nature of digital resources as well as their easiness in locating the proper lesson planning necessary for their quality and quantity use in the classrooms (McGlinns, 2007).

Using primary digital sources and technology depend on the teachers' personal beliefs as well as on their level of pedagogical content knowledge as observed in the study conducted by Swan and Hick, (2006). They also found that the accessibility and availability of primary sources resulted in their increased use for classroom instructions. The use of primary sources and technology integration in the classroom instruction are effective sources of students' engagement and their authentic learning (Fry, 2010).

The interesting study by Milman and Bondy (2012) revealed the teachers' rating of lesson plans using digital primary sources. They observed that the friendly lesson plans were important for the use of digital resources as well as for the grouping of

students and they were helpful in the integration of technology in the classroom instruction . They found that the use of power point, in printed and projected form, was common in the teachers with no use of computers by the students. However the teachers showed a variety of perceptions for grouping strategies of students.

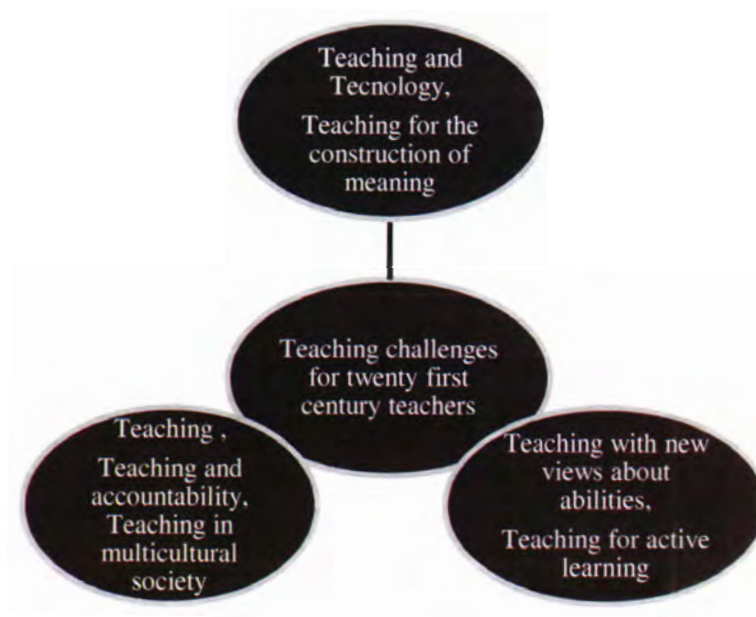
A virtual learning environment has also been observed as an important source of integrating theory into practice. Carrington (2009) found that the virtual learning environment had a significant potential for teacher education. The study was conducted in the context of making links between theory and practice through pre-service teachers' experiences with an online simulation. The educators were recommended to must embrace the opportunities afforded by technology for facilitating adults' learning through virtual learning environment.

2.11. Challenges for Teachers

Some aspects of education, with same nature and dramatically bringing changes in the field of education, can be observed due to the rapid changes in the field of technology as well as in the changing phenomenon of communication. Today and in the future, the role of computer has increased the access of students' connection to the vast array of resources. Therefore, the open access of internet will be the primary medium of information in the future. However, the need for schooling will not be narrowed and the society will continue to require young people to go to school. This phenomenon will obviously demand the new challenges and role of a teacher in the classroom with sound bases of training as well as with new concepts in the field of pedagogical content knowledge.

Abbasi (2014) conducted a study with reference to "A model for integration of information and communication technologies (ICTs) in teacher training" with mixed method approach. He found that, despite the willingness of teacher educators towards the use of ICTs in classroom teaching, there was a need for training of teacher educators in ICT integrated pedagogical approaches to improve their ICT skills. There was a lack of the use of electronic resources in the preparation of assignments as well as in the assessment of the student teachers' performance. Furthermore, he recommended the utilization of the available ICT resources as well as the development of ICT-supported environment for both teacher educators and trainees in preparing assignments, project based techniques and evaluation methods. The study identified the nature of a gap between theoretical knowledge and professional practice regarding the use of ICTs in teachers' training in Pakistan.

The emerging demands of teachers' practices associated with the theory would have to be coordinated with the investigations of reform efforts for contemporary needs. It would show the potential of bringing new and radical perspectives about what academic learning means and how it can best be achieved. A teacher's role would have to be in the new dimensions of the work place with these challenges (Arends, 2004).



Arends (2004)

Figure 2.3. Teaching challenges for twenty first century teachers

Figure 3 gives the map of challenges for the teaching in the twenty first century with innovative concepts of technology use, construction of meanings, active learning as well as with the concepts of accountability for teachers in the context of methodologies, knowledge and skills.

2.12. Effective Teacher

The studies recommend the prerequisite characteristics of a teacher for teaching that can never be attained without the qualitative, research based and innovative set of knowledge and skills. As a profession, the knowledge requirements of an effective teacher match the demands of any other profession as stated by Wilen, Ishler, Hutchison & Kindsvatter (2000); "A sound knowledge base is the bedrock of every bona-fide

profession. Translating this knowledge base into thoughtful classroom practice is the challenge and task of every professional teacher” (p.11).

Teacher education is responsible for the training of teachers and inculcating certain technical skills in student teachers to become good teachers in the realistic situations. The studies have confirmed the biggest impact of teachers' quality on the students' achievement and the important qualities of teachers have been identified as the ability and willingness to engage the pupils (Parsons & Harding 2011). Wright, Horn and Sanders (1997) observed that the improvement in effectiveness of teachers resulted in the improvement of education as compared to any other single factor of education.

One major characteristic of an effective teacher revealed in literature has been observed as the hardness of a teacher which means the ability to stand hard in the challenging situation (Maddi, Harvey, Khoshaba, Lu, Persico & Brow, 2006). Maddi revealed three characteristics of hardy teachers as; (a) Highly committed (b) With ability to control their environment (c) They feel comfortable in challenging situation. Stotko, Ingram & Beaty-O Ferrel (2007) observed the essential characteristics of good teachers as the good teachers acknowledge the complex nature of students' learning. They refuse to give up on their students' inherent flexibility, their willingness to alter practice, to improve students' learning, a concern for alignment of instruction with standards and assessment, modifying the practice for the students' learning and its willingness, collaboration and coordination with colleagues and leaders. They believe in professional learning with full empathy and patience for students.

Parsons and Harding (2011) suggested different measures to prepare the novices for their effective performance in schools. They suggested that the relationship and

critical friendship with colleagues were essential to overcome their isolation in the institution. They also suggested that the demands and issues of teaching might be used as vehicles for collaboration with experienced teachers as well as with each other. The engagement in communities of practice gives rise to the professional learning. Teachers can develop their self advocacy, identity and efficacy through taking responsibilities of the school and they can make their identity as reformers and leaders. The teachers' engagement is resulted in the engagement of students with their improved achievements as outcome.

Harding and Parson (2011) observed the biggest impact of teachers' quality on students' achievement and identified that the most important qualities of a teacher were his willingness to engage the students and his ability to engage them in different activities. Hattie (2003) also found the powerful influence of the excellence of teaching on students' performance. He suggested the regular feedback, monitoring and environment of trust as the most powerful aspects of the effective teachers. He argued that the pedagogical knowledge was identified as the crucial factor of effective teachers than the content knowledge. To care about teaching, having their own ideas and providing challenging opportunities to their students, are the most important factors of the effective teachers according to Hattie's observations. The prerequisite characteristics of an effective teacher according to Arends (1994) are:

1. Effective teachers have personal qualities that allow them to develop authentic human relationships with their students, parents and colleagues and to create democratic, socially just classrooms for children and adolescents.

2. Effective teachers have positive disposition towards knowledge. They have command of at least three, broad knowledge bases that deal with subject matter, human development and learning and pedagogy. They use this knowledge to guide the science and art of their teaching practice.
3. Effective teachers command a repertoire of teaching practices known to stimulate students' motivation, to enhance students' achievement of basic skills, to develop higher level of thinking and to produce self regulated learners.
4. Effective teachers are personally disposed of towards reflection and problem solving. They consider learning to teach a lifelong process and they can diagnose situations and adopt and use their professional knowledge appropriately to enhance students' learning to improve the schools (Arends, 1994).

The concept of effectiveness of a teacher has been associated with the teaching capacity of the teacher which depends on the teaching procedures with specific research based competencies. Shulman (1986) identified some of these competencies recognized during the planning of a teacher's evaluation in a state of USA. These competencies are:

1. Organizing the preparation and presentation of instructional plans
2. Evaluation
3. Recognizing the individual differences
4. Awareness about culture
5. Understanding youth
6. Management
7. Educational policies and procedures

These competencies have evidences for effectiveness of teachers through a considerable research data but the problem lies in the absence of subject matter knowledge in these competencies of teachers. The concept of standards for teachers emerged through the research about teachers' effectiveness. It resulted in the form of research based competencies through rubrics of teaching, process, product and teachers' behavior. Shulman observed that these types of studies were designed to investigate those patterns of teachers' behavior responsible for students' improvement in performance. The investigators ignored the central aspect of the subject matter which could be conceptualized as the classroom life (Shulman, 1986 p. 6).

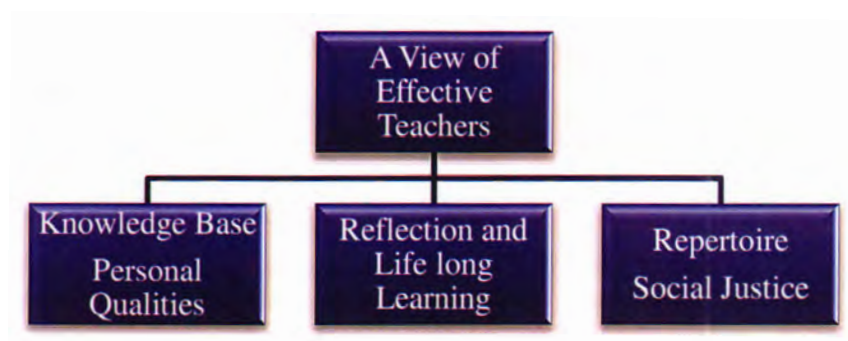


Figure 2.4. Effective teacher (Shulman, 1986)

Figure 2.4 gives the illustration of an effective teacher in the workplace with different dimensions of knowledge base, personal qualities and motivation for lifelong learning. It also includes different skills like concept of repertoire in music and a sign of social justice in the institution.

2.13. Related Studies

A considerable body of research has been observed at national and international level regarding the gaps between theoretical knowledge and professional practice in teacher education. The following are the examples of research studies with their critical analysis w. r. t. the present study as well as according to the different themes.

Theory practice gap in pre-service teacher education programs

A study was conducted by Allen, (2009) with the topic "The theory practice gap" Turning theory into practice in a pre-service teacher education program." The major objective of the study was to investigate "How do teachers experience, turning theory into practice, during training and initial employment." The findings of the study showed that the graduate teachers entered the workforce with behavior and beliefs informed by preconceived views of teaching through their own schooling and pre-training life experiences. The study also showed that the environmental pre-conditions in the school had more power over individual agency than those in the university. The study concluded that the theory practice gap was co-produced and sustained through social interactions during front-end training programs in the current university and school institutional arrangements and initial employment.

Questionnaire techniques and FGD (Focus Group Discussions) methods were used to collect data from fourteen selected beginning teachers. The study was in line with the present study through its mixed method approach. However, the study was about the limited number of participants included in the field experiences. The study focused the in-depth interviews of the student teachers and did not hold interviews of the

other stake holders i. e. school teachers and supervisors. However, the study added a valuable information about the causes and problems faced by the student teachers in turning theory into practice during their field experiences. The present study was different in the sense that it investigated the level of application and gaps as well as the strategies to fill these gaps in teacher education.

A study was conducted by Qazi et al. (2008) in the context of Pakistan regarding "Teacher perceptions about implementation strategy of B.Ed teaching practice in real school classrooms: Issues and challenges." The major objective of the study was to explore the challenges of novice teachers they faced during their training in B.Ed program and to find out the gaps between theory and practice. The sample was comprised of 120 student teachers from Sindh, Pakistan. The results of the study revealed that the student teachers faced serious challenges and issues for the implementation of theory in their teaching practice. The study found that the teaching practice was ineffective from its implementation perspective.

The present study also investigated the challenges and problems during teaching practice. It was different in methodological and geographical perspectives as it was conducted in the province of Punjab, Pakistan as well as with mixed methods application. The studies attested the general perceptions of stake holders about the theory practice gap. The present study was important with its mode of investigation about the level of application and gaps as well as to develop strategies through investigating the perceptions of student teachers and teacher educators.

A paper was presented by Laurson (2007) at biannual ISATT conference, Brock University with reference to "Student teachers' conceptions of theory and practice in

teacher education." The objective of the project was to precise and subtle more understanding of the students' conceptions. Group interviews were conducted of thirty four students of five Danish Teachers' Training Colleges. The results showed that the student teachers perceived theory as a product of others' work and they wanted to learn for teaching and not to reflect on teaching. The present study also took into account the conceptions of student teachers as well as of teacher educators about the theoretical knowledge and professional practice.

An evaluative study for "Enhanced Partnership Model" within the context of professional development of schools' movement, was conducted by Allsopp, DeMarie, McHatton, & Doone (2006). The major objective of the study was to incumbent how such partnership between school and university for professional development of prospective teachers resulted in positive outcome for both university and school.

Questionnaire and group interviews were used to collect the data. The results of the study showed that the student teachers had a clear meaning of the linkage between the course content and their field experiences. They showed that there was a close linkage between the course content and field experiences. The teacher candidates expected of clear linkage between the course content and practicum, however, at the end of the semester, they clearly pointed out the gaps between theory and practice. The study also revealed the factors associated with the issues concerning the teacher candidates about their professional development. The study recognized the lack of empowering the student teachers not being listened to and accepted by the university and school.

The present study also revealed the perceptions of student teachers and teacher educators. Furthermore, the analysis of observation records of the researcher gave more

validation to the results. Therefore, the more deep rooted investigations were made through the present study.

An important study was conducted by carroll (2013) regarding the phenomenon of theory-practice gap in teacher education at Marry Immaculate College, University of Limerick. The topic of the study was "Exploring the Impact of Lesson Study on the Theory-Practice Gap in Pre-service Teacher Education." The major objective of the study was to examine "If a curriculum specialization in mathematics education, based on the Japanese lesson study, can support pre-service teachers in bridging the theory-practice gap." The study was qualitative in nature, however, a variety of data sources were used to collect data including pre-service teachers' lesson plans, reflections ad presentations, observation of lessons taught by the pre-service teachers and interviews with the pre-service teachers. The lesson from the study was found, indeed, an effective approach in assisting the pre-service teachers to bridge the gap between theory and practice.

The present study was similar to the said study in using a variety of data sources, however, the present study adopted both quantitative and qualitative approaches instead of using only the qualitative approach. The focus of the presented study was to seek the change in behavior of pre-service teachers regarding the lesson planning in terms of students' learning. the present study also investigated the pre-service teachers' skill in planning and organizing the lesson ad the application ad gaps between theoretical knowledge and professional practice.

Technology integration & theory practice gap in teacher education

A study was conducted with the topic "Technology supported reflection: Towards bridging the gap between theory and practice in teacher education" by Almodaress, (2009) at University of Twente Enschede. The major objective of the study was to narrow the gaps between theory and practice in the teacher education programs in Kuwait. A reflective practice approach, in the field training supported by an online video-based learning environment, was used in the study. Questionnaire, interviews and observations were the instruments of the study for collecting data from sixteen participants. The study concluded that the reflective practice with ICT had positive impact for strengthening the relationship between theory and practice in teacher education. Two major pedagogical innovations were introduced as a result of the study, strengthening the relationship between theory and practice and enhancing the quality of feedback.

The study was in line with the present study in the field of mixed methods applications. However, the study was different regarding the number of participants as well as the focus of the study was on online approaches in teacher education to strengthen the theory practice relationship. The subjects of the study were also from the student teachers and not from other stake holders of teacher education. The study was also from the perspectives of Kuwait, whereas, the present study was conducted in Pakistan and focused the level of application and gaps in six major areas of theoretical knowledge regarding the classroom practices.

A significant study was conducted by Hussain, Jumani, Sultana & Iqbal, (2009) with reference to "Exploring perceptions and practices about information and

communication technologies in business English teaching in Pakistan." The major objective of the study was to understand why did English language teachers tend to use ICTs in their instruction and how they were practicing it? The study was qualitative in nature and questionnaire with semi-structured interview were used as instruments of the study. The study was conducted within the universities located in the area of capital territory, Islamabad, Pakistan. The results of the study showed that the business English teaching was facilitated and improved through the use of ICTs and the teachers needed special training regarding the practices and implementation of ICTs.

The study observed the gaps between the theoretical concepts regarding ICTs and their practical application by the teachers at university level. The present study also studied the practical applications of the theoretical concepts regarding ICT in classroom practices of student teachers during their teaching practice. It was one of the six major areas of the theoretical knowledge investigated for their application in the classroom practices of student teachers. The present study was also different in nature of methodology with mixed method approach rather than a qualitative approach only.

Teaching practice and professional development of prospective teachers

A study was conducted with reference to "Practice teaching or internship: professional development of prospective teachers through their pre-service training programs" by Hussain and Mehmood (2010). The major objective of the study was to evaluate the role of school based internship in the professional development of prospective teachers and to find out the gaps between practice teaching and theoretical concepts of teacher education. The study comprised the sample from International

Islamic University Islamabad and National University of Modern Languages Islamabad. Questionnaire and interviews were used as tools of the study. The study revealed that the school based internship had a central role in the professional development of prospective teachers. The student teachers obtained competencies and skills through the internship program in their training.

The main focus of the study was to investigate the role of teaching practice in the professional development of prospective teachers. The study was in line with the present study in mixed method applications but the sample was comprised of only the prospective teachers. The present study investigated the application level of theoretical knowledge as well as the challenges and problems faced by the student teachers during their teaching practice. The sample of the present study was comprised of the student teachers as well as of teacher educators. The present study also focused to develop strategies to fill the gaps between theoretical knowledge and professional practice through the perceptions of student teachers as well as of teacher educators.

Teachers' training and effective teaching

A significant study was conducted regarding "Relationship between training of teachers and effectiveness of teaching" by Fazal-ul- Rahman, Jumani, Akhtar, Chishti & Ajmal (2011). The major objective of the study was to assess the relationship of teachers' training with effective teaching. Sample of the study was comprised of female teachers and their students with questionnaire as an instrument of the study. The study concluded that the teachers' training had a positive relationship with effective teaching in terms of students' achievement.

The study was quantitative in nature and investigated the effects of training on the effectiveness of teachers in the classroom. The present study also concerned the investigations into the training programs. However, the present study was conducted within the borders of teacher education and its focus was on the application of theoretical concepts during teaching practice of student teachers. The study did not concern about the students' achievement as a result of the teachers' effectiveness in classroom.

Competencies and skills necessary for teaching

A study was conducted by Jumani, (2007) with reference to "The study on the competencies of the teachers trained through distance education in Pakistan." The major objectives of the study were to investigate the effectiveness of the distance education and to identify the competencies required for effective teaching. The study also investigated the problems involved in distance education in Pakistan as well as to develop guidelines for improving competencies of teachers trained through distance education in Pakistan. The study comprised the sample of 135 SSTs, 220 students, 44 heads of secondary school teachers and 20 academics from the faculty of education, AIOU, Islamabad.

The study concluded that the curriculum of distance education was less weighted on students' background and culture. Teachers focused more on the grasp of knowledge treating unequally with other aspects of personality development. Teachers focused more on imparting knowledge and did not update it. The study concluded that the instructional material was prepared for teachers in B.Ed program but there was a gap of coordination among the teachers while implementing it in the classrooms.

The study also pointed out that there was no significant difference between the competencies of teachers trained through distance education and formal training system. It was also found that the teachers generally used lecture method and did not use variety of methods. The study was comprehensive especially in the field of effective teaching. It elaborated different aspects of classroom pedagogies regarding management, communication, monitoring of students' progress, planning and managing the teaching learning process, evaluating and planning continuous improvement, teachers as members, staff, radio and T.V. programs of AIOU, instructional material and sources for teachers' training.

The major difference of the study with the present study was of objectives, methodology, population and educational stream. The major objective of the study was about the competencies required in professional practice and effectiveness of distance mode of teacher education. Whereas, the present study focused more on the student teachers' theoretical knowledge obtained and applied during their teaching practice as an opportunity for their professional development.

A study was conducted by Siddiqi (2010) with reference to "A study of teacher competencies and teaching practices for school effectiveness in workers welfare model schools." The major objectives of the study were to evaluate teachers' competencies for school effectiveness, to observe classroom competencies with exploring elements of classroom effectiveness. A multi-stage sampling was used to collect data from four hundred teachers with eighty classroom observations and interviews of twenty principals. The results showed that the teachers being aware of the standards of school effectiveness did not implement these standards in the classrooms. Teachers were agreed to two major

components of teacher education for school effectiveness, content knowledge and pedagogical knowledge.

The present study was close to the study w. r. t. the methodology but different in objectives. The present study investigated the competencies and theoretical concepts applied by the student teachers in their teaching practice rather than teachers in the schools. The present study was purely conducted within the borders of teacher education program. It aimed to develop strategies for the integration of theoretical knowledge into professional practice.

A study was also conducted by Akhtar (2011) to investigate the discrepancies between skills acquired during teacher training programs (B.Ed & M.Ed) and skills required in actual classroom. The study was delimited to girls and boys secondary schools. Different heads in secondary schools, teachers teaching at secondary level as well as the teacher trainers were considered as the population of the study. The instruments used for investigating the problem were three different questionnaires for heads, teachers and teacher trainers.

The study revealed the poor impact of training in the classroom and confirmed the existence of gap between theoretical knowledge and professional practice. The study also observed the low quality of education especially with poor qualifications of teacher trainers. The study identified the training of teachers in traditional ways without the consideration of latest technologies as well as the teacher training institutions poorly equipped with learning materials.

The present study was different in nature with the study in its methodology as it investigated through both quantitative and qualitative approaches. Only the quantitative or qualitative approaches can not elaborate all the dimensions of human nature.

2.14. Summary of Literature Review

Teacher education in Pakistan has been considered as a key component of the education system. It has been remained a focus of different policies but could not attain its justified position in the education system. However, in the last decade, different initiatives have been taken with the collaboration of international funded projects such as Pre-STEP (Pre-Service Teacher Education Programs) with the help of USAID (USAID, 2010). Specifically, the conventional pre-service training programs were replaced with long-term duration programs such as ADE and B.Ed (Honours).

A considerable research literature has been found in the context of long-standing problem of gaps between theoretical knowledge and professional practice in teacher education. Different dimensions of teacher education and its problematic nature have been identified in the literature review.

Different research studies were briefly discussed and analyzed in the last section. There was a common point among the research studies conducted at national and international level that the gaps between theoretical knowledge and professional practice have been identified as a nexus of problems in teacher education.

CHAPTER 3

METHODOLOGY OF RESEARCH

3.1. Introduction

This chapter explains the methods and procedures for data collection and analysis that were employed in the study. Research design, sampling strategy, description of participants, development of tools with their justification have been described in the chapter. The framework for presentation of data and its analysis are also given at the end of the chapter.

The study was about the long-standing problem of the gaps between theoretical knowledge and professional practice of teacher education in Pakistan. The trainee teachers receive the theoretical concepts during their course work completion at campus and they are supposed to apply these concepts practically in the realistic situation of classroom instruction and school environment. The major objective of the study was to find out the level of application and gaps of the theoretical concepts in the professional practice of student teachers. Developing strategies to bridge the gaps between theoretical knowledge and professional practice of student teachers was also an important objective of the study.

3.2. Theoretical Framework of the Study

The design of research deals with an action plan and in the case of this study the plan of action comprised the mixed method research design (Creswell & Plano Clark, 2007). The research design consisted of the following stages:

- i. Investigation of the application level of pedagogical skills in the professional practice of student teachers at schools through the questionnaires and observation records
- ii. Identifying the gaps between theoretical knowledge and professional practice of student teachers through the perceptions of student teachers, teacher educators and observation records of the researcher respectively
- iii. Identifying the differences among the perceptions of student teachers, teacher educators and observation records of the researcher
- iv. Exploring the perceptions of student teachers and teacher educators, about the application and gaps between theoretical knowledge and professional practice, through the focus group discussion and in-depth interviews respectively
- v. Developing strategies for bridging the gaps between theoretical knowledge and professional practice of student teachers through the perceptions of student teachers and teacher educators respectively

The following theoretical framework was used in the study according to the sequence of variables.

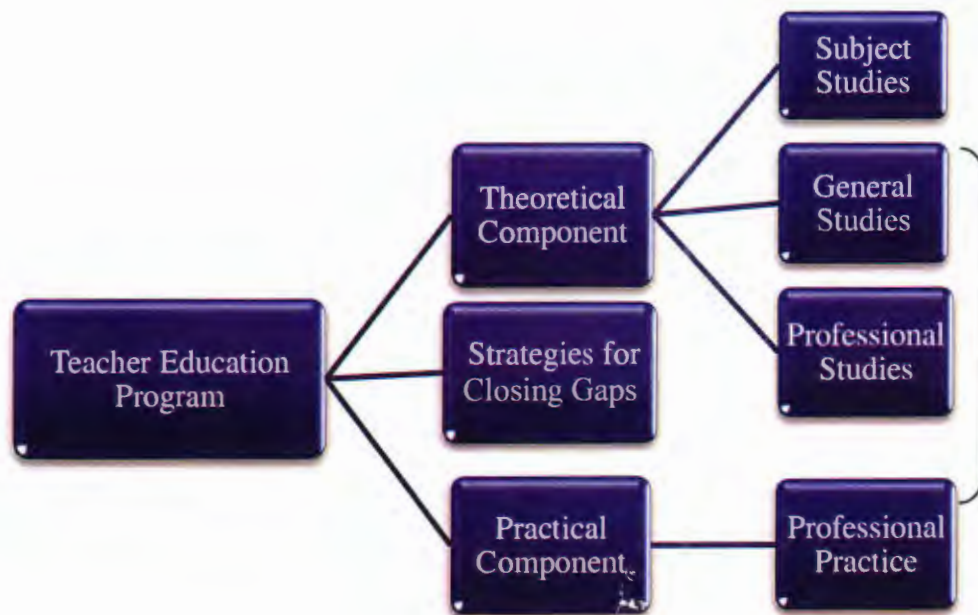


Figure 3.1. Theoretical framework of research (Wijayawardana, 2000)

Figure 3.1 illustrates the theoretical framework of the study with the concept of theoretical knowledge and professional practice. The strategies were developed to bridge the gaps between the theoretical knowledge and professional practice in teacher education.

3.3. Research Design

Through the pragmatist approach identified by Cresswell (2009), concurrent strategy with data triangulation design was adopted for collecting the data. The design can be figured in this way:



Figure 3.2. Design of research (Cresswell, 2009)

Figure 3.2 illustrates the philosophical consideration for the study. Concurrent strategy with triangulation design was adopted as an appropriate method for data collection.

The triangulation design has been considered the most common and well known approach to mixed methods (Creswell, Plano Clark, Gutmann & Hanson, 2003). Morse (1991 p. 122) described the purpose of triangulation design as "to obtain different but complementary data on the same topic." This design is used to compare quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data (Creswell, 2007). Quantitative and qualitative methods are implemented in single phase with a same time frame and with equal weight but in a separate way called a concurrent triangulation design (Creswell, Plano Clark et al., 2003).



Figure 3.3. Triangulation design: Convergence model (Creswell, 2007)

The convergence model (Figure 3.3) represents the traditional model of a mixed methods triangulation design. In this model, the researcher collects and analyzes quantitative and qualitative data separately on the same phenomenon. Then the different results are converged (by comparing and contrasting the different results) during the interpretation (Creswell, 2007).

3.4. Methodology

The study was descriptive, quantitative and qualitative in nature. Due to different research questions, the observation protocol, questionnaires, focus group discussion (FGD) and interview techniques were used for the collection of data. Due to different types and nature of research questions, a concurrent mixed method approach was used to collect and analyze the data. For example, the perceptions of student teachers and teacher educators were necessary to develop strategies for bridging the gaps. Therefore, the focus group discussion and interview schedule were the most appropriate instruments for data collection.

3.4.1. Population

The population of the study consisted of 4178 student teachers (3025 from GCETs & 1153 from UE campuses) enrolled in B.Ed. elementary one year program (Session 2013-14). The training institutions (33 GCETs and ten UE campuses) were affiliated with the University of Education Lahore. 632 teacher educators (361 from GCETs and 271 from University of Education Lahore campuses) were included in the population of the study.

Table 3.1. Population of Student Teachers and Teacher Educators

Sr. No	Institution Type	No. of Institutions	Teacher Educators	Enrolment in B.Ed
1	GCETs	33	361	3025
2	UE, Campuses	10	271	1153
	Total	43	632	4178

University of Education, (2014)

3.4.2. Sampling

Multi-stage random sampling was used for selecting the sample of the study.

Intact groups are selected randomly in cluster sampling and this method is suitable when the population is very large or spread over a wide geographical area (Al-Shahomee, 2012). It also reduces the travelling costs for collecting data due to the population spread in the large geographical area. As in the present study the teacher training institutions were situated in all over the Punjab (Pakistan) far from one another. In cluster sampling, the population is identified and the desired sample size is determined by defining the logical cluster. Average number of elements per cluster is estimated and then needed clusters rather than elements are determined through dividing the sample size by the estimated size of the cluster. Finally, the required number of clusters are

randomly selected and all the elements of clusters are included in the study. The required sample can also be obtained in equal proportion from the selected clusters (Gay, 2009: 129-30).

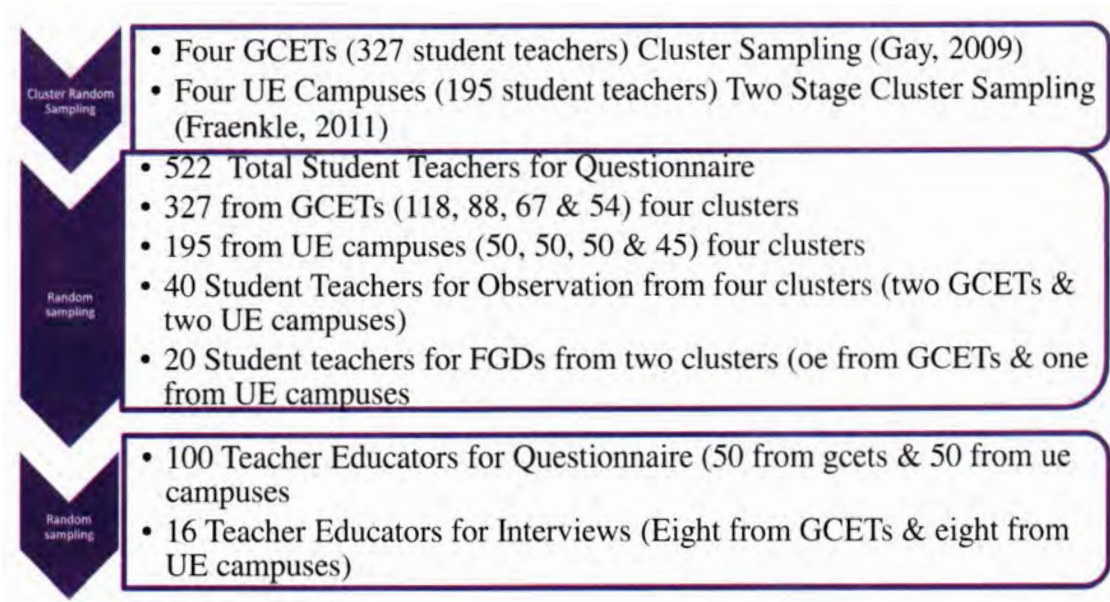


Figure 3.4. Cluster random sampling

- i. Four Government Colleges of Elementary Teachers and four University of Education Lahore campuses were selected in the first stage. High, medium and low level of enrolments in the B.Ed elementary one year program were the basis for selection of clusters.
- ii. Four Government Colleges of Elementary Teachers (GCETs) were selected randomly as clusters. Two colleges with medium and two colleges with high and low level enrolments respectively were selected as clusters.
- iii. Four university of education campuses were selected on the same principle. Two campuses with medium and two campuses with high and low level enrolments respectively, were selected as clusters.

- iv. All the 327 student teachers, enrolled in the four selected Government Colleges of Elementary Teachers (GCETs), were selected for questionnaire of the study.
- v. 195 student teachers from four University of Education campuses were selected for questionnaire. 50 student teachers from three campuses in equal proportion and all the 45 student teachers enrolled in the fourth campus were selected through the two stage cluster sampling technique.
- vi. 100 teacher educators from 8 selected institutions of GCETs and UE, campuses were selected randomly for questionnaire. The sample was selected with an equal proportion of 50 teacher educators from each stream of GCETs and UE, campuses.
- vii. 40 student teachers were selected randomly for observation. Four selected institutions with an equal proportion of two institutions from each stream were taken first. Then an equal proportion of ten student teachers from each institution were selected as sample for observation.
- viii. Total 20 student teachers were selected randomly for FGDs. Two selected institutions, with an equal proportion of one institution from each stream, were taken first randomly. Then an equal proportion of 10 student teachers from each selected institution were taken as sample for FGD.
- ix. Sixteen teacher educators working as supervisors of teaching practice, from eight selected colleges and campuses, were selected for the purpose of in-depth interviews.

Table 3.2. Sample of Student Teachers for Questionnaire

Sr. No.	Streams	Total Clusters	Population size	Sample size	Selected Clusters	Total students	Selected Students	%age of population
1	GCETs	33	3025	302	4	327	327	10.80%
2	UE, Campuses	10	1153	116	4	362	195	16.91%
Total		43	4178	418	8	689	522	12.49%

University of Education (2014)

Table 3.3. Sample of Student Teachers w. r. t. the Criteria

Sr. No.	Stream	Criteria w. r. t. the enrolment level	No. of Clusters Selected	No. of Students w. r. t. the Clusters	Total students	Selected Students	Total
1	GCETs	High (> 100)	1	118	118	118	327
		Medium (60-100)	2	(88 + 67)	155	155	
		Low (< 60)	1	54	54	54	
2	UE Campuses	High (> 100)	1	134	134	50	195
		Medium (60-100)	2	(96 + 87)	173	100	
		Low (< 60)	1	45	45	45	

University of Education (2014)

Table 3.4. Sample of Teacher Educators for Questionnaire and Interview

Sr. No.	Stream	No of institutions	Population	Selected clusters	Total teachers	Selected teachers for instruments	
						Questionnaire	Interview
1	GCETs	33	361	4	56	50	8
2	UE, Campuses	10	271	4	67	50	8
Total		43	632	8	123	100	16

University of Education (2014)

Table 3.5. Schedule of Observation

Sr. No	Stream	Institution	Students selected	Observations of a student	Total observations
1	UE campuses	1 st	10	5	50
2		2 nd	10	5	50
3		3 rd	10	5	50
4		4 th	10	5	50
Total		4	40	5	200

3.5. Development of Instruments

Different instruments were developed in the light of the review of related literature according to the nature of the objectives. An observation check list, in six categories of knowledge and skills, for the student teachers' practices in the classroom during their teaching practice was developed at first. The question items in closed form in the questionnaires for student teachers and teacher educators remained the same as in the observation checklist.

The question items were designed in a way that each item must represent a clear idea and option about a particular behaviour of the student teachers' practice in the classroom teaching. A clear language was used to draft the instruments keeping in view the level of understanding of the reader. The following instruments were developed to collect data from different sources according to the nature of the data.

Table 3.6. Instruments for data collection

Sr. No.	Instrument	Source of Data
1	Observation	Student Teachers (Appendix, A)
2	Questionnaire	Student Teachers (Appendix, B)
2	Questionnaire	Teacher Educators (Appendix, C)
3	Focus Group Discussion	Student Teachers (Appendix, D)
5	Interview	Teacher Educators (Appendix, E)

The first instrument for quantitative data was developed in the form of observation protocol. It was designed to seek information about the level of application of the theoretical concepts by the student teachers during their classroom teaching at school. The observation checklist included a major statement about six major categories

of theoretical knowledge in teacher education. These six categories of theoretical knowledge were;

1. Planning and organization of lesson
2. Instructional competencies and skills
3. Classroom Management skills
4. Evaluation techniques
5. Teaching Methods and
6. Learning Materials and Technology Integration

Two semi-structured questionnaires, within the six major categories of theoretical knowledge mentioned in the observation protocol, were also used to collect data from student teachers and teacher educators. Two open-ended questions were included in the questionnaires of student teachers and teacher educators. These two questions were about the problems of student teachers in the teaching practice as well as about the strategies to fill the gaps between theoretical knowledge and professional practice of student teachers.

The first qualitative instrument was about the focus group discussion related to the investigation of the student teachers' perceptions about the theoretical knowledge and professional practice in teacher education. The discussion questions were designed in accordance with the research questions to find out the gaps as well as the factors associated with these gaps. An important question was also designed about the strategies to fill these gaps.

The interview schedule was about to explore the opinion of teacher educators regarding the application and gaps between theoretical knowledge and professional

practice of student teachers. The interview schedule focused the major research question "What are the gaps between theoretical knowledge and professional practice in teacher education and what the strategies to fill these gaps are."

3.6. Pilot Testing

A continuous feedback of the supervisor was taken during the development of instruments. The first draft of the instruments was delivered to the fifteen (15) selected experts from the teacher educators with at least ten years experience of teaching at teacher education institutions. The experts were from the teacher education institutions of Government Colleges for Elementary Teachers as well as from the University of Education Lahore campuses. The research instruments were developed through the comprehensive review of literature and their validity and reliability were established through the opinion of experts and pilot testing. The final drafts of the instruments were developed under the kind supervision of the veteran supervisor.

A pilot testing was conducted after the development of the first draft of the instruments. The pilot testing was carried out through the subjects (100 student teachers and 50 teacher educators for questionnaires and 10 student teachers and 10 teacher educators for FGD and interview) included in the population. It rendered a lot of help to refine the instruments according to the principle of easiness of language and the level of understanding of the subjects. The following changes were made in the instruments after the experts opinion and pilot testing.

1. Same items in closed form for observation and questionnaires were developed finally in six categories of the theoretical knowledge of teacher education. These

six categories were about lesson planning and organization, instructional competencies and skills, evaluation techniques, classroom management skills, teaching methods and technology integration.

2. Two question items in closed form, other than the major six categories, were included in the questionnaires for student teachers and teacher educators.
3. Two questions in closed form, identifying the problems in teaching practice and strategies to fill the gaps between theoretical knowledge and professional practice, were replaced with questions in open ended form.
4. The ambiguous and negative statements of the instruments were reframed with positive and clear statements.
5. The question items for FGD and interview were reduced to the related research questions of the study.

3.7. Validity and Reliability of the Instruments

The validity and reliability issues concerning the observation schedule were met through the pre-testing of the observation schedule. Experts' opinion was taken in the context of question items regarding six categories of theoretical knowledge and skills. The reliability of the observation schedule was established through the observations of different observers as well as through the video recording of the participants' behaviour.

Experts' opinion from the experienced teacher educators of training institutions was also taken regarding the questionnaires. The opinion was taken from those teacher educators who had more than ten years teaching experience of B.Ed program. The validation of the questionnaire was then established through the field-testing. Pre-testing

the questionnaire yields data concerning instrument deficiencies as well as suggestions for improvement. The questionnaire was delivered to the small sample of fifty (50) teacher educators and one hundred (100) student teachers from the intended population. Pre-test subjects were encouraged to make comments and suggestions concerning directions, recording procedures, and specific items. Cronbach's alpha was used for the internal consistency of questionnaire.

Cronbach's α is defined as:-

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma_X^2} \right)$$

Where K is the number of components (K -items), σ_X^2 the variance of the observed total test scores, and $\sigma_{Y_i}^2$ the variance of component i for the current sample of persons (<http://en.wikipedia.org>).

The validity and reliability of focus group discussion was established through the same procedure as adopted in the case of questionnaires. The focus group discussion involves collecting data with pre-established themes through a set of questions provided to a group of respondents in which they have a freedom of response. Therefore, the process of pre-testing the questions regarding the focus group discussion was adopted by the researcher using a small sample of ten student teachers within the same population of the study. The questions were revised through the feedback of the subjects.

In the context of interview, with the same nature of the study as for questionnaires, the interview guide, interview procedures and analysis procedures were tried out first using a small sample of ten teacher educators from the same population of

the study. The ambiguous questions, in the light of feedback from a small pilot study, were revised. The interview questions were based on the comprehensive review of literature.

3.8. Justification of Instruments

Different instruments have their own advantages for collecting data according to the nature of the study and objectives. Justification of instruments has been discussed according to the nature of each instrument.

3.8.1. Observation

Through observation, a certain type of information can be best obtained through direct examination by the researcher (Best, 1975). Observations can identify teacher's classroom behaviours that matter for students. It can describe typical teacher's practices, show how a given classroom or teacher compares with a national or district average, forecast the likely contribution of a teacher to children's learning or it can document improvement in teachers' practices in response to the professional development. Users, however, must be cautious not to overstep the appropriate use of observational instruments in their enthusiasm to apply them in any and all circumstances (Pianta, 2012). In the classroom situation, the human subject in action is a complex task but the skills being used by the individuals can best be gathered through the direct observation.

3.8.2. Questionnaire

Development of a sound questionnaire requires both skill and time but the questionnaire has some definite advantages over other methods of collecting data. The information collected through the questionnaire takes comparatively less time through a

large sample of the study and it is also less expensive to use. The researcher can establish report, explain the purpose of the study and he can explain the meanings of the items that may not be clear. The economy of time is a specific advantage in the situation where the respondents are available in one place (Best, 1975). Therefore, in cluster random sampling, the questionnaire technique was the most appropriate for collecting data.

3.8.3. Focus Group Discussion

According to Maykut and Morehouse (1994, p. 104) the notion of a focus group is "A group conversation with a purpose." They see it as an opportunity to the participants of a study "to listen to each other's contributions, which may spark new insights or help them to develop their ideas more clearly." Focus group discussion provides an opportunity to collect data based on the list of key themes related to the different issues and problems. It can be organized and developed by the researcher through a discussion of purposefully selected group of participants (Kumar, 1987). One characteristic of the focus group discussion is the method of the collection of data through a targeted set of population in a limited time and in a faster way (Debus, 1988). The insight in the depth of the problem comes through "Synergy of the group and interaction of its members" (Wellington, 2000: 124). The discussion revolves round the main areas and themes related to the research questions to keep the audience on track.

3.8.4. Interview

According to Best (1975), people are more willing to talk than to write and a certain type of information may be obtained through the interview that the individual might be reluctant to put in the writing. The misinterpretations of the questions may be

clarified in the interview. Seeking particular information, regarding theory practice gaps, by the teacher educators the interview technique is an appropriate technique for collecting data. Through the interview technique, the researcher can take advantage of small clues in dealing with complex topics and questions with arriving at some judgment of the truth of the answers and to read between the lines (Good & Scates, 1992). The in-depth data, not possible through a questionnaire, can be produced when an interview is well conducted.

The time consumption and to involve smaller sample are the disadvantages of the interview. However, its flexible nature permits the researcher to collect data through free responses of the subjects. It is easy for the researcher to collect all the related information through interview schedule and the respondent has a full opportunity to respond freely according to his pre-established concepts (Morse & Field, 1996). The researcher and respondents, both become able to identify and exceed major areas of the respective phenomenon and it has been considered to provide a directive framework at minimum level as a major objective of the guided interview (Grbich, 1999).

3.9. Data Collection Procedure

The data collection procedure remained in process for two months, commenced from the beginning of April, 2014 to the end of May, 2014, with the beginning of teaching practice session for B.Ed one year programme in Punjab, Pakistan.

The first instrument was an observation protocol for student teachers during their teaching practice at schools. Observation checklist was designed at five point Likert scale related to the instructional process during the classroom teaching. The researcher

managed to take observations personally as well as with the help of trained observers among the teaching staff of the teacher education institutions. There were four institutions, from where the student teachers' teaching practice was observed.

The researcher personally managed to take observations of the classroom teaching of student teachers from two institutions, first from a government college of elementary teachers (GCET) and second from a University of Education campus. Observations from other two institutions, one from GCET and other from University of Education campus, were conducted with the cooperation of trained teaching staff members. Taking observation was critical in this study as the information gained through this instrument could be triangulated for giving validity to the study through "Combined levels of triangulation" stated by (Cohen, Manion & Morrison, 2007 p. 236). Cross checking for the accuracy of similar information through data triangulation, (Newman, Ridenour, Newman, & DeMarco (2003), was used by the researcher .

An appropriate time was chosen for data collection through FGD during the teaching practice session of student teachers. FGD was managed to collect data from two teacher education institutions of GCETs and UE campuses respectively. The duration of time was managed through mutual understanding with student teachers and the maximum duration for organizing the discussion was 30-35 minutes. The researcher took confidence of student teachers about the anonymity of discussion and assured that the data collection through discussion would be used only for research purposes and would not be shared with any other person. The researcher personally managed to arrange discussion with student teachers and a tape recorder was used to record the discussions

with their consent. One group, comprising eight students, from each teacher education institution was invited to take part in the discussion.

For major portion of the data collection procedure, two questionnaires, one for student teachers and the other for teacher educators, were designed with same question items of the observation checklist. The questionnaires were managed to collect data through personal visits of the researcher. The response rate of the student teachers as well as of teacher educators has been given in the table below:

Table 3.7. Response Rate of Student Teachers for Questionnaire Data

Sr. No.	Training College Streams	Selected Students	Responses	Response Rate
1	GCETs	327	320	97.85%
2	UE, Campuses	195	160	82.05%
	Total	522	480	91.95%

Table 3.8. Response Rate of Teacher Educators for Questionnaire Data

Sr. No.	Training College Streams	Selected Teachers	Responses	Response Rate
1	GCETs	50	45	90%
2	UE, Campuses	50	49	98%
	Total	100	94	94%

For interview schedule, the researcher approached personally to the teacher educators and managed to set the time with their concern. All the interviews were conducted at the end of data collection process and most of the interviews were organized in the offices of teacher educators at their relevant institutions. The average duration of all the interviews did not exceed half an hour. However, the researcher cooperated to the maximum when the participants showed their interest to talk about the problems related to the phenomenon of gaps between theoretical knowledge and professional practice.

The researcher attempted greatly to remain in the purposed discussion. Interviews were conducted with face to face discussion as well as the video recordings with manual notes of the data were prepared to share with participants for data validation. There were some limitations for video recordings of female teachers. The researcher assured all the participants of the confidential matters and anonymity of data received only for research purposes. Different codes for interviewees were used so that the researcher might have access to actual identities of participants. The researcher also assured the participants of the presentation of data through the development of themes.

3.10. Ethical Considerations

While conducting the descriptive and survey type research study, some ethical issues were required to be addressed with an appropriate manner. Different types of research instruments were used to collect data from different types of participants comprising the sample i.e. student teachers (male & female) & teacher educators (male & female). Therefore, the concerning of ethical considerations was made obvious regarding the nature and status of the participants in the organization of different types of instruments. These ethical issues within the context of different research instruments have been discussed according to the different research authors (Best, 1975; Cresswell, 2009).

Formal permission was granted by the principals of teacher education institutions as well as by the executive district officers of education. The purpose of this permission was to collect data from student teachers and teacher educators as well as during the teaching practice at schools for research purpose. The nature of the study and its

importance regarding the pre-service teacher education program of B.Ed one year was conveyed to them and verbal request for their cooperation was made by the researcher. They were assured of the secrecy of information and they were also taken into confidence for not misusing the information about the student teachers and teacher educators. The principals and heads of the schools were requested to give special access for the observation of student teachers during the teaching practice.

The supervisor teachers were also informed about the nature of the study and they were requested for cooperation during the teaching practice of B.Ed one year program. The consent of supervisor teachers and the heads of schools was obtained for special access of the researcher to take observation in the classrooms. The consent was also for focus group discussion and collecting data through questionnaires. The consent of teacher educators, especially those teaching the B.Ed one year classes, was also obtained for interview schedule. They were also assured that the collected information would be used only for research purposes.

The researcher gave due respect to each participant and ensured about the full disclosure of the nature of the study, its importance and benefits. They were allowed to ask questions with freedom about the nature of the study, data collection procedures and questions seeking information through different research instruments. The researcher informed the participants about their voluntarily participation and their right to leave the research process at any time. However, they were assured of their cooperation with no objectives other than research purposes for received data. They were also assured about the confidentiality of information as well as about their personal identification.

There were some problems faced by the researcher while collecting the data. These problems were due to intervention of some unexpected activities of student teachers, supervisors and school administration. These problems have been presented below to consider:

- i. Data collection procedure had to be revised often due to the absence of student teachers in schools during teaching practice.
- ii. Data collection procedure was also affected due to the unexpected absence of supervisor for visiting schools.
- iii. Schedule of interview also had to be revised due to the unavailability of teacher educators while they had to attend unexpected meetings at their colleges according to the pre-established schedule.
- iv. The participation of student teachers in focus group discussion was also effected due to their unexpected behaviour towards the data collection. Their irregularity and late coming behaviour usually forced the researcher to reschedule the FGD.

3.11. Data Analysis

For different types of data collected through different instruments, the following procedure for data analysis was used accordingly.

3.11.1. Questionnaire & Observation

The data collected through the questionnaires and observation checklist was analyzed by using percentage of occurrences of student teachers' behaviour in the classroom teaching. Data triangulation method was used through cross tabulation among the responses of student teachers, teacher educators and observation records on SPSS 18.

Chi-Square contingency test was a best option to analyze data obtained through the questionnaires. Chi-Square test enabled the researcher to find the frequency of responses for different categories. A category wise tabulation, analysis and interpretation of the data were applied within the three groups of student teachers, teacher educators and observation records of the researcher.

The following ranges were used to interpret the data for identifying the level of application and gaps between theoretical knowledge and professional practice of student teachers.

Table 3.9. Interpretation Criteria for Application Level of Theoretical Concepts

Sr. No.	Mean Score Range	Application Level
1	1.00-1.75	Very Poor
2	1.75-2.75	Poor
3	2.75-3.25	Moderate
4	3.25-4.25	Good
5	4.25-5.00	Excellent

Table 3.10. Interpretation Criteria for Gaps between Theoretical Knowledge and Professional Practice

Sr. No.	Mean Score Range/Negative Responses	Interpretation of Gaps
1	1.00-2.75/75%-100%	Critical Gap
3	2.75-3.25/50%-75%	Significant Gap
4	3.25-4.25/25%-50%	Considerable Gap
5	4.25-5.00/0-25%	Insignificant Gap

3.11.2. Focus Group Discussions

The researcher managed the focus group discussion with student teachers and recorded their responses through video tapes using a digital camera. To analyze the data, these tapes were observed and listened three times. The responses were written down for

each discussion. The common themes were developed through the responses of student teachers and the significant quotes were also documented for validation of the data.

3.11.3. Interview Data

The researcher listened the video recorded data of interview from each participant up to three times and developed general themes originated through the data. These themes were discussed in detail but not as verbatim however, some significant answers were quoted as verbatim. The researcher analyzed data in three areas of antecedent conditions, process and outcomes.

3.12. Chapter Summary

The student teachers and teacher educators of B.Ed one year programme in the teacher education institutions under the umbrella of University of Education Lahore comprised the population of the study. Multiple cluster random sampling was used as a sampling technique. Pragmatist world view with triangulation design was adopted as a theoretical framework. Different instruments of research, observation of classroom teaching, questionnaires for student teachers and teacher educators, focus group discussion as well as the interviews of teacher educators were employed in the study to collect the data. Mixed method with data triangulation design was used to conclude the results of the study and recommendations were made under the findings.

CHAPTER 4

DATA PRESENTATION & ANALYSIS

A descriptive study was designed to investigate the gaps between theoretical knowledge and professional practice in teacher education and to develop strategies for bridging these gaps. Student teachers and teacher educators of the teacher education institutions under the umbrella of the University of Education, Lahore comprised the population of the study. Multi-stage cluster random sampling was used to select the sample of the study. Different types of research instruments were used to collect data according to the nature of the objectives of the study.

This chapter deals with the analysis of data and the interpretation of data. The analysis of the data was consisted of two sections. The first one was the analysis of quantitative data collected through the observation schedule and questionnaires for student teachers and teacher educators. The second part of this chapter deals with the analysis of qualitative data gathered through the interview and the focus group discussions respectively.

4.1. Demographic Information

Table 4.1. Demographic Information of Student Teachers

Sr. No.	Variable	Category	Frequency	%age
1	College Streams	GCETs' Students	320	66.66%
		UE, Campuses Students	160	33.33%
		Total	480	100%
2	Age	18-20 years	256	53.33%
		20-22 years	168	35%
		22-24 years	45	9.38%
		24-26 years	7	1.46%
		≥ 26 years	4	.83%
3	Gender	Male	66	13.75%
		Female	414	86.25%
4	Qualification	B.A	217	45.20%
		B.Sc.	164	34.17%
		M.A	46	9.58%
		M.Sc	53	11.04
5	Teaching Practice Level	Primary	289	60.20%
		Middle	191	39.79%

Table 4.1 shows that the student teachers from GCETs comprised the 67% of the sample whereas, the student teachers from UE, campuses comprised 33% of the sample. About 88% student teachers were among the age of 18-22 years. In the gender variable it was observed that greater number of student teachers belonged to the females with 86.25% whereas, the male student teachers were in smaller numbers with 13.75% of the total student teachers who responded to the questionnaire data. 79.37% of student teachers had academic qualification of BA/BSc, whereas the remaining 20.63% had academic qualification of MA/MSc. 60.20% of student teachers were teaching classes at primary level and 39.39% student teachers were teaching classes at middle level.

Table 4.2. Demographic Information of Teacher Educators

Sr. No.	Variables	Category	Frequency	%age
1	TEIs Streams	GCETs	45	47.87%
		UE, Campuses	49	52.12%
		Total	94	100%
2	Gender	Male	71	75.51%
		Female	23	24.46%
3	Age	25-30 years	18	19.15%
		30-35 years	23	24.46%
		35-40 years	26	27.65%
		40-45 years	21	22.35
		≥ 45 years	6	6.38%
4	Experience	≤ 5 years	22	23.40%
		5-10 years	24	25.53%
		10-15 years	38	40.42%
		≥15 years	10	10.64%
5	Qualification	MA	46	48.94%
		MSc	18	19.14%
		M.Phil.	24	25.53%
		Ph. D.	6	6.38%
6	Professional Qualification	B.Ed/M.Ed	74	78.72%
		M.Phil/Ph.D	30	31.91%

Table 4.2 shows almost equal no of teacher educators with 47.87% from Government Colleges of Elementary Teachers (GCETs) and 52.13% teacher educators from University of Education, Campuses. In the context of gender information, the table shows the greater number of teacher educators belonged to the male category with 75.51% and 24.46% from female category. The table shows greater number of respondents from the category with age limit 35-40 years, 27.65 % of the total respondents. A greater number of respondents 40.42% were of 10-15 years teaching experience at teacher education institution. The data also showed the greater number of respondents were with academic qualification M.A./M.Sc. as well as with professional qualification in the category of B.Ed and M.Ed.

4.2 Quantitative & Qualitative Data Analysis

In this section, two types of data were analyzed to take the results of the study. Keeping in view the research questions, the percentage scores, mean scores, chi-square as contingency test and Tukey' s HSD were used to find out the gaps between the theoretical knowledge and professional practice of student teachers. The data was tabulated with cross tabulation among the student teachers' responses, teacher educators' responses and observation records of the researcher by using SPSS version 18.

The first instrument was employed by the researcher in the form of observation protocol for classroom instruction of student teachers during their teaching practice as a part of their professional practice at schools. Through the observation data the practices of student teachers during their classroom instructions were observed to find out their level of application of different skills in the classroom teaching. The instrument was consisted of the outcome variable of five point scale denoting the level of the application of the desired concept in the fields of six indicators of the classroom practice i. e. planning & organization of the lesson, instructional competencies including subject matter knowledge & communication skills, management and organization of the classroom, evaluation techniques, ICT use in the classroom & methodological concepts.

The second quantitative instrument was used to solicit information of the perceptions of student teachers and teacher educators about the level of application of the theoretical concepts well as to find out the gaps. The same indicators with six categories of knowledge competencies and skills as indicated in the instrument of observation were used with same question items in the questionnaires. The questionnaires were consisted of the five point rating scale to get views of the student teachers and teacher educators

about the level of practical application of the concepts. However, the questionnaires also contained two extra question items in closed form as well as two open ended question items. The first open ended question item was developed to investigate the perceptions of student teachers and teacher educators about the nature of the problems lying between theoretical component and practical component of teacher education program. Whereas, the second open ended question item was about to develop strategies to fill the gaps between theoretical knowledge and professional practice of student teachers.

The gathered information was analyzed through the data triangulation method with the cross tabulation among student teachers' responses, teacher educators' responses and observation records of the researcher. The percentage scores, Pearson's Chi-square as contingency test as well as the Tukey's HSD were used to analyze the data between the different sources. Data was interpreted through the comparison of results.

Chi-Square test was used to investigate the significant differences within the different sets of responses with the use of probability value less than or equal to 0.05. It indicates the statistical significance with 5% chance or less occurring randomly (Hobson, Malderez, Tracey, Giannakaki, Pell, Kerr, Chambers, Tomlinson, & Roper, 2006). Chi-square statistics with the number of degrees of freedom and probability (p-value) were reported. The interpretations of the study were under the assumptions about the probability value with less than or equal to 0.05 that the probability of having a result due to chance was 5 out of (100) hundred. This implies that the observed differences were not only due to chance and the result were considered to be statistically significant. The degrees of freedom denoted the number of values that were free to vary and that did not affect the result. In the Parsons' Chi-square test the number of degrees of freedom related

to the size of the two way table and these are associated with the Chi-square value for the calculation of p-value. One major aim of the study was to explore the perceptions of student teachers and teacher educators and to what extent they differ in their perceptions regarding the nature of the application of the theoretical concepts in their professional practice.

Determining which groups differ (when it's unclear) requires more sophisticated analyses to correct for the problem of multiple comparisons. For this reason Tukey's post-hoc test is a method that is used to determine which groups among the sample have significant differences. This method calculates the difference between the means of all the groups. Tukey's HSD test values are the number which act as a distance between the groups. It works by defining a value known as Honestly Significant Difference. In this research, the researcher tried to compare the difference between the groups ,that is why, Tuckey's HSD was used (Tukey & Brillinger, 1984).

4.2.1. Quantitative Data Triangulation

A. Lesson planning and organization

Table 4.3. Application and Gaps Regarding the Concept of the Selection of Appropriate Learning Objectives

Data Source		Selection of Appropriate Objectives					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	41	52	45	199	143	3.73	480
	% within source	8.5%	10.8%	9.4%	41.5%	29.8%		100.0%
Teacher Educators	Count	8	14	9	52	11	3.42	94
	% within source	8.5%	14.9%	9.6%	55.3%	11.7%		100.0%
Observations	Count	9	32	53	77	29	3.46	200
	% within source	4.5%	16.0%	26.5%	38.5%	14.5%		100.0%
Total	Count	58	98	107	328	183	3.62	774
	% within source	7.5%	12.7%	13.8%	42.4%	23.6%		100.0%

Chi-square value is 62.90 & p- value is $\leq .05$ with df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.4250	
Teacher Educators	94	3.4681	3.4681
Student Teachers	480		3.7313
Sig.		.940	.101

Table 4.3 shows the chi-square statistics (62.90) with p-value less than .05 alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (41.5%, 55.3% & 38.5% respectively) of the theoretical concept of the selection of appropriate learning objectives. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (71.3%, 67% & 53% respectively) identified the successful level of application of the theoretical concept.

The overall negative responses, including the responses in neither good nor poor category, of student teachers, teacher educators and observation records (28.7%, 33% & 47% respectively) identified a considerable gap (25%-50%) of application.

According to the Tukey's HSD, the mean score of teacher educators (3.46) had no significant difference with the mean score of observation records (3.42) as well as with that of student teachers (3.73). However, there was a significant difference between the mean scores of observation records and the student teachers (3.42 & 3.73 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.73, 3.46 & 3.42 respectively) identified the successful application of the theoretical concept at good level. All the student teachers, teacher educators as well as the observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.4. Application and Gaps Regarding the Concept of Selection of Content According to the Objectives

Data Source		Selection of Content according to the objectives						Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent	Mean	
Student Teachers	Count	38	54	90	208	90	3.53	480
	% within source	7.9%	11.3%	18.8%	43.3%	18.8%		100.0%
Teacher Educators	Count	8	16	19	42	9	3.29	94
	% within source	8.5%	17.0%	20.2%	44.7%	9.6%		100.0%
Observations	Count	18	25	75	53	29	3.25	200
	% within source	9.0%	12.5%	37.5%	26.5%	14.5%		100.0%
Total	Count	64	95	184	303	128	3.45	774
	% within source	8.3%	12.3%	23.8%	39.1%	16.5%		100.0%

Chi-square value is 39.53 and p-value $\leq .05$ with df = 8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1
Observations	200	3.2500
Teacher Educators	94	3.2979
Student Teachers	480	3.5375
Sig.		.054

Table 4.4 shows the chi-square statistics (39.53) with p-value less than .05 alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation data.

Overall, the student teachers and teacher educators identified the good level of application (43.3% & 44.7% respectively) of the theoretical concept of the selection of content according to the objectives. Whereas, the observation records (37.5%) identified neither good nor poor level of application. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (62.1%, 53.3% & 41% respectively) identified the successful level of application of the theoretical concept. The observation records (41%) indicated the lower level of positive responses below 50% of the total responses.

The overall negative responses, including the responses of neither good nor poor category, of student teachers and teacher educators (37.9% & 46.7% respectively) identified a considerable gap (25%-50%) of application. However, the observation records with negative responses (59%) identified a significant gap (50%-75%) between the theoretical knowledge and professional practice of student teachers.

According to the Tukey's HSD there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.53, 3.29 & 3.25).

It was concluded that all the student teachers, teacher educators and observation records (3.53, 3.29 & 3.25 respectively) indicated the successful application of the theoretical concept at good level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.5. Application and Gaps Regarding the Concept of Organizing the Lesson Presentation with Logical Sequence

Data Source		Organizing Lesson Presentation with Logical Sequence						Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent	Mean	
Student Teachers	Count	41	50	78	242	69	3.51	480
	% within Source	8.5%	10.4%	16.3%	50.4%	14.4%		100.0%
Teacher Educators	Count	8	27	8	34	17	3.26	94
	% within Source	8.5%	28.7%	8.5%	36.2%	18.1%		100.0%
Observations	Count	7	43	66	64	20	3.23	200
	% within Source	3.5%	21.5%	33.0%	32.0%	10.0%		100.0%
Total	Count	56	120	152	340	106	3.41	774
	% within Source	7.2%	15.5%	19.6%	43.9%	13.7%		100.0%

Chi-square value is 71.20 & p- value = .000 with df = 8

Tukey's HSD		
Data Sources	Subset for alpha = 0.05	
	N	I
Observations	200	3.2350
Teacher Educators	94	3.2660
Student Teachers	480	3.5167
Sig.		.054

Table 4.5 shows the chi-square statistics (71.20) with p-value less than .05 alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers and teacher educators identified the good level of application (50.4%, 36.2% respectively) of the theoretical concept of organizing the lesson presentation with logical sequence. Whereas, the observation records identified almost equal responses for good (32%) as well as for neither good nor poor category (33%). The positive responses, for "Excellent and Good" categories of student teachers, teacher educators and observation records (64.8%, 54.3% & 42% respectively) identified the successful level of application of the theoretical concept. However, the observation records for positive responses (42%) were below 50% of the total responses.

The negative responses, including the neither nor poor category, of student teachers and teacher educators (35.2% & 45.7% respectively) identified a considerable gap of application of the theoretical concept. However, the observation records with negative responses (58%) indicated a significant gap (50%-75%) between the theoretical knowledge and professional practice of student teachers.

There was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.51, 3.26 & 3.23 respectively).

It was concluded that the mean scores of student teachers and teacher educators (3.51 & 3.26 respectively) identified the successful application of the theoretical concept at good level. Whereas, the observation records (3.23) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.6. Application and Gaps Regarding the Concept of the Selection and Organization of Appropriate Learning Materials

Data Source		Selection and Organization of Learning Materials					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	35	50	83	217	95	3.59	480
	% within source	7.3%	10.4%	17.3%	45.2%	19.8%		100.0%
Teacher Educators	Count	5	12	28	38	11	3.40	94
	% within source	5.3%	12.8%	29.8%	40.4%	11.7%		100.0%
Observations	Count	12	43	60	71	14	3.16	200
	% within source	6.0%	21.5%	30.0%	35.5%	7.0%		100.0%
Total	Count	52	105	171	326	120	3.46	774
	% within source	6.7%	13.6%	22.1%	42.1%	15.5%		100.0%

Chi-square = 45.81, p-value = 0.000046. df = 8

Tukey's HSD

Data Source	Subset for alpha = 0.05	
	N	1 2
Observations	200	3.1600
Teacher Educators	94	3.4043 3.4043
Student Teachers	480	3.5979
Sig.		.101 .236

Table 4.6 shows the chi-square statistics (71.20) with p-value less than .05 alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (45.2, 40.4 & 35.5 respectively) of the theoretical concept of selection and organization of learning materials. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (65%, 52.1% & 42.5% respectively) identified the successful level of application of the theoretical concept. Whereas, the observation records (42.5%) indicated the lower positive response below 50% of the total responses.

The overall negative responses, including the neither good nor poor category, of student teachers and teacher educators (35% & 47.9% respectively) identified a considerable gap (25%-50%) of application of the theoretical concept. However, the observation records with negative responses (57.5%) identified a significant gap (50%-75%).

According to the Tukey's HSD, the mean score of teacher educators (3.40) was not significantly different with the mean score of student teachers (3.59) as well as that of observation records (3.16). However, there was a significant difference between the mean score of student teachers and the observation records (3.59 & 3.16 respectively).

It was concluded that the mean scores of student teachers and teacher educators (3.59 & 3.40 respectively) identified the successful application of the theoretical concept at good level. Whereas, the mean score of observation records (3.16) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.7. Application and Gaps Regarding the Concept of the Selection and Organization of Activities According to the Objectives

Data Source		Selection and Organization of Activities					Mean	Total
		Very Poor	Poor	Neither Nor	Good	Excellent		
Student Teachers	Count	27	41	78	241	93	3.69	480
	% within source	5.6%	8.5%	16.3%	50.2%	19.4%		100.0%
Teacher Educators	Count	8	12	24	39	11	3.35	94
	% within source	8.5%	12.8%	25.5%	41.5%	11.7%		100.0%
Observations	Count	14	29	49	78	30	3.40	200
	% within source	7.0%	14.5%	24.5%	39.0%	15.0%		100.0%
Total	Count	49	82	151	358	134	3.57	774
	% within source	6.3%	10.6%	19.5%	46.3%	17.3%		100.0%

Chi -square = 21.21, P-value = .007 df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Teacher Educators	94	3.3511	
Observations	200	3.4050	
Student Teachers	480		3.6917
Sig.		.890	1.000

Table 4.7 shows the chi-square statistics (21.21) with p-value less than .05 alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (50.2%, 41.5% & 39%) of the theoretical concept of selection and organization of learning activities. The positive responses for "Good" and "Excellent" categories of student teachers, teacher educators and observation records (69.6%, 53.2% & 54% respectively) identified the successful application of the theoretical concept.

The overall negative responses, including the neither good nor poor category, of student teachers, teacher educators and observation records (30.4%, 46.8% & 46%

respectively) identified a considerable gap (25%-50%) of application of the theoretical concept.

According to the Tukey's HSD, The mean score of student teachers (3.69) was significantly different with both of the mean scores of teacher educators and observation records (3.40 & 3.35 respectively). There was no significant difference between the mean scores of teacher educators and observation records (3.40 & 3.35 respectively).

It can be concluded that the mean scores of student teachers, teacher educators and observation records (3.69, 3.40 & 3.35 respectively) identified the successful application of the theoretical concept at good level. All the student teachers, teacher educators as well as the observation records identified a considerable gap(25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.8. Summary Table of Composite Means for Lesson Planning and Organization

Sr. No	Sub Variables	Mean
1.	Selection of Appropriate Objectives	3.62
2.	Selection of Content according to the Objectives	3.43
3.	Selection & Organization of Appropriate Materials	3.41
4.	Selection and Organization of Appropriate Learning Materials	3.46
5.	Selection and Organization of Activities with Logical Sequence	3.58

Average Mean = 3.5

(B) *Instructional process skills*

Table 4.9. Application and Gaps Regarding the Concept of the Introduction of Topic with Different Techniques

Data Source		Introduction of Topic					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	25	26	78	258	93	3.76	480
	% within source	5.2%	5.4%	16.3%	53.8%	19.4%		100.0%
Teacher Educators	Count	6	7	24	45	12	3.53	94
	% within source	6.4%	7.4%	25.5%	47.9%	12.8%		100.0%
Observations	Count	10	16	62	93	19	3.47	200
	% within source	5.0%	8.0%	31.0%	46.5%	9.5%		100.0%
Total	Count	41	49	164	396	124	3.66	774
	% within source	5.3%	6.3%	21.2%	51.2%	16.0%		100.0%

Chi-square statistics = 28.37, p-value = 0.000413 , df = 8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1 2
Observations	200	3.4750
Teacher Educators	94	3.5319 3.5319
Student Teachers	480	3.7667
Sig.		.856 .074

Table 4.9 shows the chi-square statistics (28.37) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (53.8%, 47.9 & 46.5% respectively) of the theoretical concept of the introduction of topic with different techniques. The positive responses in sum for "Good" and "Excellent" categories of student teachers, teacher educators and observation records (73.2%, 60.7% & 56% respectively) identified the successful level of application of the theoretical concept.

The overall negative responses, including the responses of neither good nor poor, of student teachers, teacher educators and observation records (36.8%, 39.3% & 44% respectively) identified a considerable gap (25%-50%), of application.

There was no significant difference of the mean score of teacher educators (3.53) with the mean score of student teachers (3.76) as well as with that of observation records (3.47). However, there was a significant difference between the mean scores of the student teachers and observation records (3.76 & 3.47 respectively).

It can be concluded from the results that all the mean scores of student teachers, teacher educators and observation records (3.76, 3.53 & 3.47 respectively) identified the successful application of the theoretical concept at good level. The student teachers, teacher educators as well as the observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.10. Application and Gaps Regarding the Concept of Using Different Assessment Techniques for Previous Learning

Data Source		Assessment techniques for previous learning					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	20	38	73	262	87	3.74	480
	% within source	4.2%	7.9%	15.2%	54.6%	18.1%		100.0%
Teacher Educators	Count	4	9	16	53	12	3.63	94
	% within source	4.3%	9.6%	17.0%	56.4%	12.8%		100.0%
Observations	Count	31	50	35	67	17	2.94	200
	% within source	15.5%	25.0%	17.5%	33.5%	8.5%		100.0%
Total	Count	55	97	124	382	116	3.52	774
	% within source	7.1%	12.5%	16.0%	49.4%	15.0%		100.0%

Chi-square statistics = 83.75, p-value = 0.00001 , df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	2.9450	
Teacher Educators	94		3.6383
Student Teachers	480		3.7458
Sig.		1.000	.616

Table 4.10 shows the chi-square statistics (83.75) with p-value less than (.05) alpha level. The table shows that there was a significant difference among student teachers' responses, teacher educators' responses and observation records of the researcher.

Overall, the student teachers, teacher educators and observation records identified the good level of application (54.6%, 56.4 & 33.5% respectively) of the theoretical concept of different assessment techniques for previous learning. The positive responses, in sum for "Good" and "Excellent" categories, of student teachers, teacher educators and observation records (72.7% , 69.2% & 42% respectively) identified the successful level of application of the theoretical concept. However, the observation records (42%) identified the lower level of positive responses below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers, teacher educators (27% & 30.8% respectively) identified a considerable gap (25%-50%) of application of the theoretical concept. However, the negative responses of observation records (58%) identified a significant gap (50%-75%) between the theoretical knowledge and professional practice of student teachers.

According to the Tukey's HSD, It was found that the teacher educators (3.63) had no significant difference with the student teachers (3.74). However, there was a significant difference of the observation records (2.94) with student teachers (3.74) as well as with that of teacher educators (3.63).

It was concluded that the mean scores of student teachers and teacher educators (3.74 & 3.63 respectively) identified the successful application of the theoretical concept at good level. Whereas, the mean score of observation records (2.94) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers and observation records identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.11. Application and Gaps Regarding the Concept of Appropriate Utilization of Audio-visual Aids

Data Source		Appropriate utilization of A. V. Aids					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	36	46	71	260	67	3.57	480
	% within source	7.5%	9.6%	14.8%	54.2%	14.0%		100%
Teacher Educators	Count	13	18	13	34	16	3.23	94
	% within source	13.8%	19.1%	13.8%	36.2%	17.0%		100%
Observations	Count	16	38	50	69	27	3.24	200
	% within source	8.0%	24.0%	20.0%	34.5%	13.5%		100%
Total	Count	65	102	134	363	110	3.45	774
	% within source	8.4%	13.2%	17.3%	46.9%	14.2%		100%

Chi-square statistics = 40.32, p-value = .000, df = 8

Tukey's HSD

Data source	Subset for alpha = 0.05	
	N	
Teacher Educators	94	3.2340
Observations	200	3.2650
Student Teachers	480	3.5750
Sig.		.966

Table 4.11 shows the chi-square statistics (40.32) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (54.2%, 36.2 & 34.5% respectively) of the theoretical concept of the appropriate use of A. V. aids. The positive responses, for "Good" and "Excellent" categories, of student teachers teacher educators and observation records (68.2%, 53.2% & 48% respectively) identified the successful level of application of the theoretical concept. However, the observation records (48%) identified the lower level of positive response below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers and teacher educators (31.8% & 46.8% respectively) identified a considerable gap (25%-50%) of application of the theoretical concept. However, the negative responses of observation records (52%) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD there was no significant difference between the mean scores of teacher educators and observation records (3.23 & 3.24 respectively). Whereas, there was a significant difference of the mean score of student teachers (3.57) with the mean score of teacher educators (3.23) as well as with that of observation records (3.24).

It can be concluded that the mean score of student teachers (3.57) identified the successful application of the theoretical concept at good level. Whereas, the mean scores of teacher educators and observation records (3.23 & 3.26 respectively) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.12. Application and Gaps Regarding the Concept of the Delivery of Content Effectively

Data Source		Delivery of content effectively					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	29	50	65	277	59	3.59	480
	% within source	6.0%	10.4%	13.5%	57.7%	12.3%		100.0%
Teacher Educators	Count	7	6	23	51	7	3.47	94
	% within source	7.4%	6.4%	24.5%	54.3%	7.4%		100.0%
Observations	Count	11	24	67	92	6	3.29	200
	% within source	5.5%	12.0%	33.5%	46.0%	3.0%		100.0%
Total	Count	47	80	155	420	72	3.50	774
	% within source	6.1%	10.3%	20.0%	54.3%	9.3%		100.0%

Chi-square statistics = 48.56, p-value = 0.000 , df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.2900	
Teacher Educators	94	3.4787	3.4787
Student Teachers	480		3.5979
Sig.		.190	.514

Table 4.12 shows the chi-square statistics (48.56) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records of the researcher.

Overall, the greater responses of student teachers, teacher educators and observation records identified the good level of application (57.7%, 54.3 & 46% respectively) of the theoretical concept of effective delivery of content. The positive responses, for "Good" and "Excellent" categories, of student teachers, teacher educators and observation records (70%, 61.7% & 49% respectively) identified the successful level of application of the theoretical concept. However, the observation records (49%) identified the low level of positive responses below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers and teacher educators (30% & 38.3% respectively) identified the considerable gap (25%-50%) of application of the theoretical concept. However, the negative responses of observation records (51%) identified a significant gap (50%-75%) between the theoretical knowledge and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.47) was not significantly different with the mean score of student teachers (3.59) as well as with that of observation records (3.29). However, there was a significant difference between the mean scores of student teachers and observation records (3.59 & 3.29 respectively).

It can be concluded that the mean scores of student teachers, teacher educators and observation records (3.59, 3.47 & 3.29 respectively) identified a successful application of the theoretical concept at good level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.13. Application and Gaps Regarding the Concept of Using Motivational Techniques for Active Learning

Data Source		Using motivational techniques for active learning					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	23	63	79	233	82	3.60	480
	% within source	4.8%	13.1%	16.5%	48.5%	17.1%		100.0%
Teacher Educators	Count	5	15	22	41	11	3.40	94
	% within source	5.3%	16.0%	23.4%	43.6%	11.7%		100.0%
Observations	Count	12	44	42	72	30	3.32	200
	% within source	6.0%	22.0%	21.0%	36.0%	15.0%		100.0%
Total	Count	40	122	143	346	123	3.50	774
	% within source	5.2%	15.8%	18.5%	44.7%	15.9%		100.0%

Chi-square statistics = 17.00, p-value .03, df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.3200	
Teacher Educators	94	3.4043	3.4043
Student Teachers	480		3.6000
Sig.		.756	.223

Table 4.13 shows the chi-square statistics (17.00) with p-value (.03) less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records of the researcher.

Overall, the student teachers, teacher educators and observation records identified the good level of application (48.5%, 43.6% & 36% respectively) of the theoretical concept of using motivational techniques for active learning. The positive responses, for "Good and Excellent" categories, of student teachers, teacher educators & observation records (65.6%, 55.3% & 51% respectively) identified the successful level of application of the theoretical concept.

The negative responses including, neither good nor poor, of student teachers, teacher educators and observation records (34.4%, 44.7% & 49% respectively) identified a considerable gap (25%-50%) of application of the theoretical concept.

According to the Tukey's HSD, the mean score of teacher educators (3.40) was not significantly different with the mean score of student teachers (3.60) as well as with that of observation records (3.32). However, there was a significant difference between the mean scores of student teachers and observation records (3.60 & 3.32 respectively).

It was concluded that the mean score of student teachers, teacher educators and observation records (3.60, 3.40 & 3.32 respectively) identified the successful application of the theoretical concept at good level. The student teachers identified a considerable gap (25%-50%). Whereas, the teacher educators and observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.14. Application and Gaps Regarding the Concept of the Focused Teaching and Learning According to the Objectives

Data Source		Focused teaching & learning					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	18	39	98	252	73	3.67	480
	% within source	3.8%	8.1%	20.4%	52.5%	15.2%		100.0%
Teacher Educators	Count	8	10	19	44	13	3.46	94
	% within source	8.5%	10.6%	20.2%	46.8%	13.8%		100.0%
Observations	Count	17	16	59	85	23	3.40	200
	% within source	8.5%	8.0%	29.5%	42.5%	11.5%		100.0%
Total	Count	43	65	176	381	109	3.57	774
	% within source	5.6%	8.4%	22.7%	49.2%	14.1%		100.0%

Chi-square statistics 17.85, p-value ≤ 0.02 , df = 12

Tukey's HSD			
Data Source	N	Subset for alpha = 0.05	
		1	2
Observations	200	3.4050	
Teacher Educators	94	3.4681	3.4681
Student Teachers	480		3.6729
Sig.		.833	.148

Table 4.14 shows the chi-square statistics (17.85) with p-value (.02) less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records of the researcher.

Overall, the student teachers, teacher educators and observation records identified the good level of application (52.5%, 46.8% & 42.5% respectively) of the theoretical concept of being focussed on teaching and learning. The positive responses in sum, for "Good" and "Excellent" categories, of student teachers, teacher educators & observation records (67.7%, 60.6% & 54% respectively) identified the successful level of application of the theoretical concept.

The negative responses, including neither good nor poor, of student teachers, teacher educators and observation records (32.3%, 39.4% & 46% respectively) identified a considerable gap (25%-50%) of application of the theoretical concept.

According to the Tukey's HSD, the mean score of teacher educators (3.46) was not significantly different with the mean score of student teachers (3.67) as well as with that of observation records (3.40). However, there was a significant difference between the mean scores of student teachers and observation records (3.67 & 3.40 respectively).

It can be concluded that the mean score of student teachers (3.67, 3.46 & 3.40 respectively) identified the successful application of the theoretical concept at good level. The student teachers identified a considerable gap (25%-50%). Whereas, the teacher educators and observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.15. Application and Gaps Regarding the Concept of the Maintenance of Students' Attention through Different Techniques

Data Source		Maintenance of students' attention					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	40	47	70	255	68	3.55	480
	% within Source	8.3%	9.8%	14.6%	53.1%	14.2%		100.0%
Teacher Educators	Count	3	19	30	38	4	3.22	94
	% within Source	3.2%	20.2%	31.9%	40.4%	4.3%		100.0%
Observations	Count	20	30	71	70	9	3.09	200
	% within Source	10.0%	15.0%	35.5%	35.0%	4.5%		100.0%
Total	Count	63	96	171	363	81	3.39	774
	% within Source	8.1%	12.4%	22.1%	46.9%	10.5%		100.0%

Chi-square statistics = 72.07, p-value ≤ 0.00001 , df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.0900	
Teacher Educators	94	3.2234	
Student Teachers	480		3.5500
Sig.		.486	1.000

Table 4.15 shows the chi-square statistics (72.07) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers and teacher educators identified the good level of application (53.1%, 40.4% respectively) of the theoretical concept of the maintenance of students' full attention. However, the observation records identified almost equal responses (35.0% & 35.5% respectively) in good and neither good nor poor categories. The positive responses of student teachers, teacher educators and observation records (67.3%, 44.4% & 39.5% respectively) identified the successful level of application of the theoretical concept. However, the teacher educators and observation records identified the lower positive responses (44.4% & 39.5% respectively) below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers (32.7%) identified a considerable gap (25%-50%) of application of the theoretical concept. However, the negative responses of teacher educators and observation records (55.6% & 60.5% respectively) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.22) was not significantly different with the mean score of observation records (3.09). However, the mean score of student teachers (3.55) was significantly different with the mean score of teacher educators (3.22) as well as with that of observation records (3.09).

It can be concluded that the mean score of student teachers (3.55) identified the successful application of the theoretical concept at good level. Whereas, the mean scores of teacher educators and observation records (3.22 & 3.09) identified the successful application at neither good nor poor level. The student teachers identified a considerable gap (25%-50%). Whereas, the teacher educators and observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.16. Application and Gaps Regarding the Concept of Providing Opportunities to the Students for Active Participation

Data Source		Providing opportunities for active participation					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	40	48	80	245	67	3.52	480
	% within Source	8.3%	10.0%	16.7%	51.0%	14.0%		100.0%
Teacher Educators	Count	8	6	28	40	12	3.44	94
	% within Source	8.5%	6.4%	29.8%	42.6%	12.8%		100.0%
Observations	Count	22	26	59	77	16	3.19	200
	% within Source	11.0%	13.0%	29.5%	38.5%	8.0%		100.0%
Total	Count	70	80	167	362	95	3.42	774
	% within Source	9.0%	10.3%	21.6%	46.8%	12.3%		100.0%

Chi-square statistics = 27.36, p-value = 0.001, df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.1950	
Teacher Educators	94	3.4468	3.4468
Student Teachers	480		3.5229
Sig.		.092	.802

Table 4.16 shows the chi-square statistics (27.36) with p-value (.001) less than (.05) alpha level. The table shows revealed that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (51.0%, 42.8% & 38.5% respectively) of the theoretical concept of providing opportunities for active participation. The positive responses, for "Good" and "Excellent" categories, of student teachers, teacher educators and observation records (65%, 55.4% & 46.5%) identified the successful level of application of the theoretical concept. However, the observation records identified the lower positive responses below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers and teacher educators (35% & 44.6% respectively) identified a considerable gap (25%-50%)

of application of the theoretical concept. However, the observation records with negative responses (53.5%) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators' responses (3.44) was not significantly different with the mean score of student teachers (3.52) as well as with that of observation records (3.19). However, there was a significant difference between the mean scores of student teachers and observation records (3.52 & 3.19 respectively).

It was concluded that the mean scores of student teachers and teacher educators (3.52 & 3.44 respectively) identified the successful application of the theoretical concept at good level. Whereas, the mean score of observation records (3.19) identified the successful level of the theoretical concept at neither good nor poor level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.17. Application and Gaps Regarding the Concept of Adequate Use of Questioning Techniques to Enhance Learning

Data Source		Proper use of questioning techniques					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	14	53	83	272	58	3.63	480
	% within Source	2.9%	11.0%	17.3%	56.7%	12.1%		100.0%
Teacher Educators	Count	2	16	31	42	3	3.29	94
	% within Source	2.1%	17.0%	33.0%	44.7%	3.2%		100.0%
Observations	Count	10	40	74	66	10	3.13	200
	% within Source	5.0%	20.0%	37.0%	33.0%	5.0%		100.0%
Total	Count	26	109	188	380	71	3.46	774
	% within Source	3.4%	14.1%	24.3%	49.1%	9.2%		100.0%

Chi-square statistics = 65.33, p-value = 0.0001, df = 8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	
Observations	200	3.1300
Teacher Educators	94	3.2979
Student Teachers	480	3.6396
Sig.		.222

Table 4.17 shows the chi-square statistics (65.33) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the student teachers' responses, teacher educators' responses and observation records.

Overall, the student teachers and teacher educators identified the good level of application (56.7% & 44.7% respectively) of the theoretical concept of the adequate use of the questioning techniques. Whereas, the observation records identified greater responses (37%) for neither good nor poor category. The positive responses, for "Good" and "Excellent" categories of the student teachers, teacher educators and observation records (68.8%, 47.9% & 38% respectively) identified the successful level of application of the theoretical concept. However, the teacher educators and observation records identified the lower positive responses in sum (47.9% & 38% respectively) below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers (31.2%) identified a considerable gap (25%-50%) of application of the theoretical concept. However, the negative responses of teacher educators and observation records (52.1% & 62% respectively) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.30) was not significantly different with the mean score of observation records (3.13). However, the mean score of student teachers (3.64) was significantly different with the mean scores of teacher educators (3.30) as well as with that of observation records (3.13).

It was concluded that the mean scores of student teachers and teacher educators (3.64 & 3.30 respectively) identified the successful application of the theoretical concept at good level. Whereas, the mean score of teacher educators and observation records (3.13) identified the successful level of the application of the theoretical concept at neither good nor poor level. The student teachers identified a considerable gap (25%-50%). Whereas, the teacher educators and observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.18. Application and Gaps Regarding the Concept of Monitoring Students' Learning Activities

Data Source		Monitoring students' learning activities					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	26	36	110	243	65	3.59	480
	% within Source	5.4%	7.5%	22.9%	50.6%	13.5%		100.0%
Teacher Educators	Count	4	11	37	40	2	3.27	94
	% within Source	4.3%	11.7%	39.4%	42.6%	2.1%		100.0%
Observations	Count	11	25	71	85	8	3.26	200
	% within Source	5.5%	12.5%	35.5%	42.5%	4.0%		100.0%
Total	Count	41	72	218	368	75	3.47	774
	% within Source	5.3%	9.3%	28.2%	47.5%	9.7%		100.0%

Chi-square statistics = 39.47, p-value = 0.000, df = 8

Tukey's HSD			
Data Source	N	Subset for alpha = 0.05	
		1	2
Teacher Educators	94	3.2660	
Observations	200	3.2700	
Student Teachers	480		3.5938
Sig.		.999	1.000

Table 4.18 shows the chi-square statistics (39.47) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (50%, 42.6% & 42.5% respectively) of the theoretical concept of monitoring students' learning activities. The positive responses in sum for "Good" and "Excellent" categories of the student teachers, teacher educators and observation records (64.1%, 46.7% & 42.5% respectively) identified the successful level of the theoretical concept. However, the teacher educators and observation records identified the lower positive responses in sum (46.7% & 42.5% respectively), below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers (35.9%) identified the considerable gap (25%-50%) of the application of the theoretical concept. However, the negative responses of teacher educators and observation records (53.3% & 57.5% respectively) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.26) was not significantly different with the mean score of observation records (3.27). However, the mean score of student teachers (3.59) was significantly different with the mean scores of teacher educators (3.26) as well as that of observation records (3.27).

It was concluded that the mean scores of student teachers, teacher educators and observation records (3.59, 3.26 & 3.27 respectively) identified the successful application of the theoretical concept at good level. The student teachers identified a considerable gap (25%-50%). Whereas the teacher educators and observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.19. Summary Table of Composite Means for Instructional Process Skills

Sr. No	Sub variables	Mean
1.	Introduction of topic	3.66
2.	Assessment techniques for previous learning	3.52
3.	Appropriate utilization of A. V. aids	3.45
4.	Delivery of content	3.50
5.	Using motivational techniques for active learning	3.50
6.	Focused teaching and learning according to the objectives	3.57
7.	Maintenance of students' attention	3.39
8.	Providing students, opportunities for active participation	3.42
9.	Proper use of questioning techniques	3.46
10.	Monitoring students' learning activities	3.47

Average Mean = 3.494

(C) Evaluation techniques

Table 4.20. Application and Gaps Regarding the Concept of Assessment of Students' Progress Through Regular Classroom Tests

Data Source		Assessment through regular classroom tests					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	39	50	119	219	53	3.41	480
	% within Source	8.1%	10.4%	24.8%	45.6%	11.0%		100%
Teacher Educators	Count	2	7	37	44	4	3.43	94
	% within Source	2.1%	7.4%	39.4%	46.8%	4.3%		100%
Observations	Count	17	37	64	76	6	3.08	200
	% within Source	8.5%	18.5%	32.0%	38.0%	3.0%		100%
Total	Count	58	94	220	339	63	3.32	774
	% within Source	7.5%	12.1%	28.4%	43.8%	8.1%		100%

Chi-square statistics = 36.057, p-value = 0.000, df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.0850	
Student Teachers	480		3.4104
Teacher Educators	94		3.4362
Sig.		1.000	.971

Table 4.20 shows the chi-square statistics (36.057) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (45.6%, 46.8% & 38% respectively) of the theoretical concept of students' performance through classroom tests. The positive responses for "Excellent and Good" categories of the student teachers, teacher educators and observation records (56.6%, 51.1% & 41% respectively) identified the successful application of the theoretical concept. However, the observation records identified the lower positive responses (41%) below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers and teacher educators (43.4% & 48.9% respectively) identified the considerable gap (25%-50%) of application. However, the observation records with negative responses (59%) indicated the significant gap (50%-75%).

According to the Tukey's HSD, there was no significant difference between the mean scores of student teachers and teacher educators (3.43 & 3.41 respectively). There was a significant difference of the mean score of the observation records (3.08) with both the mean scores of teacher educators and student teachers (3.41 & 3.43 respectively)

It can be concluded that the mean scores of student teachers and teacher educators (3.43 & 3.41 respectively) identified the successful application of the theoretical concept at good level. Whereas, the observation records identified the neither good nor poor level of application. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.21. Application and Gaps Regarding the Concept of Observing Students' Performance in the Instructional Activities

Data Source		Observing students' performance during instruction					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	32	56	87	267	38	3.46	480
	% within Source	6.7%	11.7%	18.1%	55.6%	7.9%		100.0%
Teacher Educators	Count	8	13	15	52	6	3.37	94
	% within Source	8.5%	13.8%	16%	55.3%	6.4%		100.0%
Observations	Count	23	28	71	66	12	3.08	200
	% within Source	11.5%	14.0%	35.5%	33.0%	6.0%		100.0%
Total	Count	63	97	183	367	64	3.35	774
	% within Source	8.1%	12.5%	23.6%	47.4%	8.3%		100.0%

Chi-square statistics = 41.87, p-value = 0.000, df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.0800	
Teacher Educators	94		3.3723
Student Teachers	480		3.4646
Sig.		1.000	.695

Table 4.21 shows the chi-square statistics (41.87) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers and teacher educators identified the good level of application (55.7% & 55.3% respectively) of the theoretical concept of observing students' performance in the instructional activities. Whereas, the observation records identified greater responses (35.5%) for neither good nor poor category. The positive responses, in sum for "Good" and "Excellent" categories, of the student teachers, teacher educators and observation records (63.5%, 61.7% & 39% respectively) identified the successful application of the theoretical concept. However, the observation records identified the positive responses (39%), below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers and teacher educators (36.5% & 38.3% respectively) identified a considerable gap (25%-50%) of application. However, the observation records with negative responses (51%) identified a significant gap (50%-75%).

According to the Tukey's HSD there was no significant difference between the mean scores of student teachers and teacher educators (3.46 & 3.37 respectively). However, there was a significant difference of the mean score of the observation records (3.08) with the mean scores of student teachers and teacher educators (3.46 & 3.37 respectively).

It can be concluded that all the mean scores of student teachers and teacher educators (3.46 & 3.37) identified the successful application of the theoretical concept at good level. Whereas, the observation records (3.08) identified the neither good nor poor level of application. The student teachers and teacher educators identified a considerable gap (25%-50%, whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.22. Application and Gaps Regarding the Concept of Different Assessment Methods and its Practical Application in the Classroom

		Different assessment methods					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	39	56	188	175	22	3.17	480
	% within Source	8.1%	11.7%	39.2%	36.5%	4.6%		100.0%
Teacher Educators	Count	6	32	28	26	2	2.85	94
	% within Source	6.4%	34.0%	29.8%	27.7%	2.1%		100.0%
Observations	Count	35	66	52	41	6	2.58	200
	% within Source	17.5%	33%	26%	20.5%	3%		100.0%
Total	Count	80	154	268	242	30	2.98	774
	% within Source	10.3%	19.9%	34.6%	31.3%	3.9%		100.0%

Chi-square statistics = 78.16, p-value = 0.000, df = 8

Tukey's HSD				
Source	N	Subset for alpha = 0.05		
		1	2	3
Observations	200	2.5850		
Teacher Educators	94	2.8511		
Student Teachers	480	3.1771		
Sig.		1.000	1.000	1.000

Table 4.22 shows the chi-square statistics (78.16) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

The student teachers identified neither good nor poor level of application (39%) of the theoretical concept of different assessment methods. Whereas, the teacher educators and observation records identified the poor level of application (34% & 33% respectively) of the theoretical concept. A low level of positive responses in sum for "Excellent and Good" categories of student teachers, teacher educators and observation records (41.1%, 29.8% & 23.5% respectively) did not identified the successful application of the theoretical concept. All the responses were observed below 50% of the total responses.

A considerable gap (25%-50%) was found through the negative responses of student teachers (48.9%) including neither good nor poor category. A significant gap (50%-75%) was found through the negative responses of teacher educators (70.2%). A critical gap (75%-100%) was identified through the negative responses of observation records (76.5%).

According to the Tukey's HSD, there was a significant difference among the mean scores of student teachers, teacher educators and observation records (3.17, 2.85 & 2.58 respectively).

It was concluded that the mean scores of student teachers and teacher educators (3.17 & 2.85 respectively) identified the successful application of the theoretical concept at good level. The student teachers identified a considerable gap (25%-50%), whereas, the teacher educators identified a significant gap (50%-75%). However, the observation records identified a critical gap (75%-100%) between the theoretical concept and professional practice of student teachers.

Table 4.23. Application and Gaps Regarding the Concept of Grading of Students through Test Records

Data Source		Grading of students through test records						Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent	Mean	
Student Teachers	Count	25	43	105	190	117	3.69	480
	% within Source	5.2%	9.0%	21.9%	39.6%	24.4%		100.0%
Teacher Educators	Count	9	12	24	34	15	3.36	94
	% within Source	9.6%	12.8%	25.5%	36.2%	16.0%		100.0%
Observations	Count	12	27	63	88	14	3.36	200
	% within Source	4.0%	13.5%	31.5%	44.0%	7.0%		100.0%
Total	Count	42	78	189	309	156	3.47	774
	% within Source	5.4%	10.1%	24.4%	39.9%	20.2%		100.0%

Chi-square statistics = 36.50, p-value 0.000, df =8

Tukey's HSD			
Data Source	N	Subset for alpha = 0.05	
		1	2
Observations	200	3.3650	
Teacher Educators	94	3.3617	
Student Teachers	480		3.6896
Sig.		1.00	1.00

Table 4.23 shows the chi-square statistics (36.50) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and the observation records identified the good level of application (39.6%, 36.2% & 44% respectively) of the theoretical concept of the grading of students through test records. The positive responses, in sum for "Good" and "Excellent" categories, of the student teachers, teacher educators and observation records (64% & 52.2% & 51% respectively) identified the successful application the theoretical concept.

The negative responses, including neither good nor poor, of student teachers, teacher educators and observation records (36%, 47.8% & 49% respectively) identified the considerable gap (25%-50%) of application.

According to the Tukey's HSD, there was no significant difference between the mean scores of teacher educators and observation records (3.36 & 3.36 respectively). There was a significant difference of the mean score (3.69) of student teachers with the mean scores of observation records and teacher educators (3.36 & 3.36 respectively).

It was concluded that the mean score of student teachers, teacher educators and observation records (3.69, 3.36 & 3.36 respectively) identified the successful application of the theoretical concept at good level. All the student teachers, teacher educators as well as the observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.24. Application and Gaps Regarding the Concept of the Maintenance of Students' Performance Records

		Maintenance of students' performance records					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	48	77	109	195	51	3.25	480
	% within Source	10.0%	16.0%	22.7%	40.6%	10.6%		100.0%
Teacher Educators	Count	8	17	24	45	0	3.12	94
	% within Source	8.5%	18.1%	25.5%	47.9%	0%		100.0%
Observations	Count	16	29	60	82	13	3.23	200
	% within Source	8.0%	14.5%	30.0%	41.0%	6.5%		100.0%
Total	Count	72	123	193	322	64	3.23	774
	% within Source	9.3%	15.9%	24.9%	41.6%	8.3%		100.0%

Chi-square statistics = 17.008, p-value 0.03, df =8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1
Teacher Educators	94	3.1277
Observations	200	3.2350
Student Teachers	480	3.2583
Sig.		.523

Table 4.24 shows the chi-square statistics (17.008) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and the observation records identified the good level of application (40.6%, 47.9% & 41% respectively) of the theoretical concept of the maintenance of the students' performance records. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (51.2%, 47.9% & 47.5% respectively) identified the successful application of the theoretical concept. However, the teacher educators and observation records identified the positive responses below 50% of the total responses.

A considerable gap (25%-50%) was found through the negative responses, including neither good nor poor, of student teachers (48.9%). Whereas, a significant gap

(50%-75%), was found through the negative responses of teacher educators and observation records (52.1% & 52.5% respectively).

According to the Tukey's HSD there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.25, 3.23 & 3.12 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.25, 3.23 & 3.12 respectively) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers identified a considerable gap (25%-50%). Whereas, the teacher educators and observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.25. Application and Gaps Regarding the Concept of Reporting Test Records to the Students

Data Source		Reporting of test records to the students in classroom						Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent	Mean	
Student Teachers	Count	27	66	52	309	26	3.50	480
	% within Source	5.6%	13.8%	10.8%	64.4%	5.4%		100.0%
Teacher Educators	Count	12	10	11	54	7	3.36	94
	% within Source	12.8%	10.6%	11.7%	57.4%	7.4%		100.0%
Observations	Count	17	29	21	124	9	3.39	200
	% within Source	8.5%	14.5%	10.5%	62.0%	4.5%		100.0%
Total	Count	56	105	84	487	42	3.45	774
	% within Source	7.2%	13.6%	10.9%	62.9%	5.4%		100.0%

Chi-square statistics =8.61 , p-value 0.376, df =8

Tukey's HSD		
Source	Subset for alpha = 0.05	
	N	I
Teacher Educators	94	3.3617
Observations	200	3.3950
Student Teachers	480	3.5021
Sig.		.423

Table 4.25 shows the chi-square statistics (8.61) with p-value (0.376) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and the observation records identified the good level of application (64.4%, 57.4% & 62% respectively) of the theoretical concept of reporting test records. The positive responses, in sum for "Good" and "Excellent" categories, of the student teachers, teacher educators and observation records (69.8%, 64.8% & 66.5% respectively) identified the successful application of the theoretical concept.

However, by including the responses of "Neither Good Nor Poor" category with negative responses then a considerable gap (25% - 50%) was found through the responses

of student teachers, teacher educators and observation records (30.2%, 35.1% & 33.5% respectively).

According to the Tukey's HSD there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.50, 3.36 & 3.39 respectively).

It was concluded that the mean score of student teachers, teacher educators and observation records (3.50, 3.36 & 3.39 respectively) identified the successful application of the theoretical concept at good level. All the student teachers, teacher educators and observation records identified a considerable gap (25%-50%) of application of the theoretical concept.

A considerable gap (25% - 50%) was found through the negative responses, including neither good nor poor, of student teachers and teacher educators (31.7% & 48.9% respectively). However, a significant gap (50%-75%) was found through the observation records (54%).

According to the Tukey's HSD there was no significant difference between the mean scores of teacher educators and observation records (3.26 & 3.34 respectively). However, a significant difference was found between the mean score of student teachers (3.61) with both of the mean scores of teacher educators and observation records (3.26 & 3.34 respectively) .

It was concluded that the mean score of student teachers, teacher educators and observation records (3.61, 3.26 & 3.34 respectively) identified the successful application of the theoretical concept at good level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.27. Application and Gaps Regarding the Concept of Feedback and Reinforcement on Students' Performance

Data Source		Feedback & Reinforcement of Students on Performance						Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent	Mean	
Student Teachers	Count	14	12	78	287	89	3.88	480
	% within Source	2.9%	2.5%	16.3%	59.8%	18.5%		100.0%
Teacher Educators	Count	3	6	13	65	7	3.71	94
	% within Source	3.2%	6.4%	13.8%	69.1%	7.4%		100.0%
Observations	Count	8	28	49	79	36	3.53	200
	% within Source	4.0%	14.0%	24.5%	39.5%	18.0%		100.0%
Total	Count	25	46	140	431	132	3.77	774
	% within Source	3.2%	5.9%	18.1%	55.7%	17.1%		100.0%

Chi-square statistics = 50.08, p-value 0.000, df =8

Tukey's HSD			
Data Source	N	Subset for alpha = 0.05	
		1	2
Observations	200	3.5350	
Teacher Educators	94	3.7128	3.7128
Student Teachers	480		3.8854
Sig.		.164	.182

Table 4.27 shows the chi-square statistics (50.08) with p-value less than (.05) alpha level. The table shows that there was a significant difference among student teachers' responses, teacher educators' responses and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (59.8, 69.1 & 39.5 respectively) of the theoretical concept of feedback and reinforcement on students' performance. The positive responses, in sum for "Good" and "Excellent" categories, of the student teachers, teacher educators and observation records (78.3%, 76.5% & 57.5% respectively) identified the successful application of the theoretical concept.

Moreover, by including the responses of "Neither Good Nor Poor" category with negative responses then the insignificant gap (0% - 25%) was found through the

responses of student teachers and teacher educators (21.7% & 23.4% respectively).

However, the observation records (32.5%) indicated a considerable gap (25%- 50%).

According to the Tukey's HSD there was no significant difference of the mean score of teacher educators (3.71) with the mean scores of observation records (3.53) as well as with that of student teachers (3.88). However, a significant difference was found between the mean scores of observation records and student teachers (3.53 & 3.88 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.88, 3.71 & 3.53 respectively) identified the successful application of the theoretical concept at good level. The student teachers and teacher educators identified an insignificant gap (0-25%). Whereas, the observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.28. Application and Gaps Regarding the Concept of Different Statistical Techniques for Evaluation of Students' Performance

Data Source		Statistical techniques for evaluation of students' performance					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	33	186	154	102	5	2.70	480
	% within Source	6.9%	38.8%	32.1%	21.3%	1.0%		100.0%
Teacher Educators	Count	0	28	43	18	5	3.00	94
	% within Source	0%	29.8%	45.7%	19.1%	5.3%		100.0%
Observations	Count	20	103	52	22	3	2.42	200
	% within Source	10.0%	51.5%	26.0%	11.0%	1.5%		100.0%
Total	Count	53	317	249	142	13	2.67	774
	% within Source	6.8%	41.0%	32.2%	18.3%	1.7%		100.0%

Chi-square statistics = 42.69, p-value less than 0.000, df =8

Tukey's HSD				
Data Source	N	Subset for alpha = 0.05		
		1	2	3
Observations	200	2.4250		
Student Teachers	480	2.7083		
Teacher Educators	94	3.0000		
Sig.		1.000	1.000	1.000

Table 4.28 shows the chi-square statistics (42.69) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the student teachers, teacher educators and observation records.

Overall, the student teachers identified the poor level of application (38.8%) of the theoretical concept of different statistical techniques. The teacher educators identified neither good nor poor level of application (45.7%) and the observation records identified the poor level of application (51.5%) of the theoretical concept. The lower positive responses in sum for "Good" and "Excellent" categories of the student teachers, teacher educators and observation records (22.3%, 24.4% & 12.5% respectively) identified the unsuccessful level of application of the theoretical concept.

Moreover, by including the responses of "Neither Good Nor Poor" category with negative responses, a critical gap (75% - 100%) was found through the responses of student teachers, teacher educators and observation records (77.8%, 75.5% & 87.5% respectively).

According to the Tukey's HSD, there was a significant difference among the mean scores of student teachers, teacher educators and observation records (3.00, 2.70 & 2.42 respectively).

It was concluded that the mean score of student teachers (3.00) identified the successful application of the theoretical concept at neither good nor poor level. Whereas, the mean scores of teacher educators and observation records (2.70 & 2.42 respectively) identified the successful application of the theoretical concept at poor level. All the student teachers, teacher educators and observation records identified a critical gap (75%-100) between the theoretical concept and professional practice of student teachers.

Table 4.29. Application and Gaps Regarding the Concept of Regular Assessment of Homework & Assignments

Data Source		Regular assessment of assignments						Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent	Mean	
Student Teachers	Count	33	57	95	224	71	3.50	480
	% within Source	6.9%	11.9%	19.8%	46.7%	14.8%		100.0%
Teacher Educators	Count	4	19	23	32	16	3.39	94
	% within Source	4.3%	20.2%	24.5%	34.0%	17.0%		100.0%
Observations	Count	17	40	53	74	16	3.16	200
	% within Source	8.5%	20.0%	26.5%	37.0%	8.0%		100.0%
Total	Count	54	116	171	330	103	3.40	774
	% within Source	7.0%	15.0%	22.1%	42.6%	13.3%		100.0%

Chi-square statistics = 23.93, p-value 0.002, df =8

Tukey's HSD			
Data Source	N	Subset for alpha = 0.05	
		1	2
Observations	200	3.1600	
Teacher Educators	94	3.3936	3.3936
Student Teachers	480		3.5063
Sig.		.124	.613

Table 4.29 shows the chi-square statistics (23.93) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (46.7%, 34% & 37% respectively) of the theoretical concept of regular assessment of homework and assignments. The positive responses, in sum for "Good" and "Excellent" categories, of the student teachers, teacher educators and observation records (61.5%, 51% & 45% respectively) identified the successful level of application of the theoretical concept.

A considerable gap (25% - 50%) was found through the negative responses, including neither good nor poor, of student teachers and teacher educators (38.6% &

49% respectively). However, the observation records (55%) identified a significant gap (50% - 75%) of application.

According to the Tukey's HSD, there was no significant difference of the mean score of teacher educators (3.39) with the mean score of observation records (3.16) as well as with that of student teachers (3.50). However, a significant difference was observed between the mean score of observation records and student teachers (3.16 & 3.50 respectively).

It was concluded that the mean score of student teachers and teacher educators (3.50 & 3.39 respectively) indicated the successful application of the theoretical concept at good level. However, the mean score of observation records (3.16) indicated the successful application of the theoretical concept at neither good nor poor level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.30. Summary of Composite Means for Evaluation Techniques

Sr. No	Concepts	Mean
1.	Assessment of students' progress through regular tests	3.32
2.	Assessment of students' learning activities with observation	3.35
3.	Different assessment methods	2.98
4.	Grading of students through test records	3.59
5.	Maintenance of students' progress records	3.23
6.	Reporting of test records to the students	3.45
7.	Diagnosing students' weaknesses through tests	3.50
8.	Feedback and reinforcement on students' performance	3.77
9.	Using statistical techniques for students' performance	2.67
10.	Regular assessments of homework & assignments	3.40

Average Mean = 3.33

(D) Classroom management skills

Table 4.31. Application and Gaps Regarding the Concept of Using Different Techniques for the Maintenance of Students' Attention During the Instruction

Data Source		Maintenance of Students' Attention during Instruction						Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent	Mean	
Student Teachers	Count	26	110	77	224	43	3.30	480
	% within Source	5.4%	22.9%	16.0%	46.7%	9%		100.0%
Teacher Educators	Count	6	25	21	29	13	3.19	94
	% within Source	6.4%	26.6%	22.3%	30.9%	13.8%		100.0%
Observations	Count	32	69	31	44	24	2.77	200
	% within Source	16.0%	34.5%	16.5%	22.0%	11.0%		100.0%
Total	Count	64	211	131	297	71	3.15	774
	% within Source	8.3%	27.3%	16.9%	38.4%	9.2%		100.0%

Chi-square statistics = 54.68, p-value 0.000, df =8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	2.7750	
Teacher Educators	94		3.1915
Student Teachers	480		3.2958
Sig.		1.000	.616

Table 4.31 shows the chi-square statistics (54.68) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers and teacher educators identified the good level of application (46.7% & 30.9% respectively) of the theoretical concept of different techniques for maintaining students' attention. Whereas, the observation records identified poor level of application (34.5%). The positive responses, for "Excellent and Good" categories, of the student teachers, teacher educators and observation records (55.7%, 47.9% & 33% respectively) identified the successful application of the

theoretical concept. However, the teacher educators and observation records identified the positive responses below 50% of the total responses.

A considerable gap (25% - 50%) was found through the negative responses, including neither good nor poor, of student teachers (44.3%). Whereas, the negative responses of teacher educators and the observation records (55.5% & 67% respectively) identified a significant gap (50% - 75%).

The mean score of observation records (2.77) was significantly different with the mean scores of teacher educators and student teachers (3.19 & 3.29 respectively). There was no significant difference between the mean score of teacher educator and the student teachers (3.19 & 3.29 respectively).

It was concluded that all the mean scores of student teachers (3.29) identified the successful application of the theoretical concept at good level. Whereas, the teacher educators and observation records (3.19 & 2.77 respectively) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers identified a considerable gap (25%-50%). Whereas, the teacher educators and the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.32. Application and Gaps Regarding the Concept of Time and Work Management During the Instruction

Data Source		Time and Work Management					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	11	211	49	126	83	3.12	480
	% within Source	2.3%	44.0%	10.2%	26.3%	17.3%		100.0%
Teacher Educators	Count	1	46	15	30	2	2.85	94
	% within Source	1.1%	48.9%	16.0%	31.9%	2.1%		100.0%
Observations	Count	9	104	36	43	8	2.68	200
	% within Source	4.5%	52.0%	18.0%	21.5%	4.0%		100.0%
Total	Count	21	361	100	199	93	2.97	774
	% within Source	2.7%	46.6%	12.9%	25.7%	12.0%		100.0%

Chi-square statistics = 45.39, p-value 0.000, df =8

Tukey's HSD			
Source	N	Subset for alpha = 0.05	
		1	2
Observations	200	2.6850	
Teacher Educators	94	2.8511	2.8511
Student Teachers	480		3.1229
Sig.		.368	.070

Table 4.32 shows the chi-square statistics (45.39) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the poor level of application (44%, 48.9% & 52% respectively) of the theoretical concept of time and work management. The positive responses for "Excellent and Good" categories of student teachers, teacher educators and observation records (43.6%, 34% & 25.5% respectively) did not identified the successful level of application of the theoretical concept. All the positive responses were below 50% of the total responses.

Moreover, by including the responses of "Neither Good Nor Poor" category with negative responses then a significant gap (50% - 75%) was found through the responses

of student teachers, teacher educators and observation records (58.5% 66% & 74.5% respectively).

According to the Tukey's HSD, the mean score of teacher educators (2.85) was not significantly different with the mean score of observation records (2.68) as well as with that of student teachers (3.12). However, there was a significant difference between the mean scores of observation records and the student teachers (2.68 & 3.12 respectively).

It was concluded that the mean scores of the student teachers and teacher educators (3.12 & 2.85 respectively) indicated the successful application of the theoretical concept at neither good nor poor level. Whereas, the mean score of observation records (2.68) identified the poor level of application of the theoretical concept. All the student teachers, teacher educators and the observation records identified a significant gap (50%-75%) of application of the theoretical concept. The observation records identified the maximum level of significant gap as compared to the student teachers.

Table 4.33. Application and Gaps Regarding the Concept of Management and Organization of Instructional Material

		Management & Organization of Instructional Materials					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	18	68	78	237	79	3.60	480
	% within Source	3.8%	14.2%	16.3%	49.4%	16.5%		100.0%
Teacher Educators	Count	5	14	15	42	18	3.57	94
	% within Source	5.3%	14.9%	16.0%	44.7%	19.1%		100.0%
Observations	Count	10	31	42	81	36	3.51	200
	% within Source	5.0%	15.5%	21.0%	40.5%	18.0%		100.0%
Total	Count	33	143	125	340	133	3.56	774
	% within Source	4.3%	18.5%	16.1%	43.9%	17.2%		100.0%

Chi-square statistics = 8.63, p-value 0.665, df =8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1
Observations	200	3.510
Teacher Educators	94	3.574
Student Teachers	480	3.606
Sig.		.684

Table 4.33 shows the chi-square statistics (8.63) with p-value (0.665) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (49.4%, 44.7% & 40.5% respectively) of the theoretical concept of management and organization of instructional materials. The positive responses in sum for "Good" and "Excellent" categories of student teachers, teacher educators and observation records (65.9%, 63.8% & 58.5% respectively) identified the successful application of the theoretical concept.

Moreover, if the responses for "Neither Good Nor Poor" category were included in the negative responses then the responses of student teachers, teacher educators and

observation records (34.3%, 36% & 41.5% respectively) identified a considerable gap (25%-50%) of application of the theoretical concept.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators' responses and observation records (3.60, 3.57 % & 3.51% respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.60, 3.57 & 3.51 respectively) indicated the successful application of the theoretical concept at good level. All the student teachers, teacher educators and the observation records identified a considerable gap (25%-50%) of application of the theoretical concept.

Table 4.34. Application and Gaps Regarding the Concept of Developing Friendly Environment in the Classroom

Data Sources		Developing friendly environment in the classroom					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	29	30	58	255	108	3.79	480
	% within Source	6.0%	6.3%	12.1%	53.1%	22.5%		100.0%
Teacher Educators	Count	4	8	19	47	16	3.67	94
	% within Source	4.3%	8.5%	20.2%	50%	17%		100.0%
Observations	Count	15	21	43	98	23	3.46	200
	% within Source	7.5%	10.5%	21.5%	49.0%	11.5%		100.0%
Total	Count	48	59	130	395	142	3.69	774
	% within Source	6.2%	7.6%	16.8%	51.0%	18.3%		100.0%

Chi-square statistics = 23.935, p-value 0.000, df = .002

Tukey's HSD			
Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.4650	
Teacher Educators	94	3.6702	3.6702
Student Teachers	480		3.7979
Sig.		.170	.502

Table 4.34 shows the chi-square statistics (23.935) with p-value (.002) less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (53.1%, 50% & 49% respectively) of the theoretical concept of developing friendly environment. The positive responses, for "Excellent and Good" categories, of student teachers, teachers and observation records (75.6%, 67% & 60.5% respectively) indicated the successful application of the theoretical concept in classroom teaching.

Moreover, if the responses for "Neither Good Nor Poor" category were considered with the negative responses then the student teachers with negative responses

(24.4%) identified an insignificant gap of application. Whereas, the teacher educators and observation records, with negative responses (33% & 39.5% respectively), identified a considerable gap (25%-50%) of application.

According to the Tukey's HSD, the mean score of teacher educators (3.67) was not significantly different with the mean score of observation records (3.46) as well as that of student teachers (3.79). However, there was a significant difference between the mean scores of observation records and student teachers (3.46 & 3.79 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.79, 3.67 & 3.46 respectively) indicated the successful application of the theoretical concept at good level. The student teachers identified an insignificant gap (0-25%) of application. Whereas, the teacher educators and observation records identified a considerable gap (25%-50%) of application of the theoretical concept.

Table 4.35. Application and Gaps Regarding the Concept of Maintaining Sequence of Activities During Instruction

Data Source		Maintaining Sequence of Activities					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	37	95	89	196	63	3.31	480
	% within Source	7.7%	19.8%	18.5%	40.8%	13.1%		100.0%
Teacher Educators	Count	7	20	18	37	12	3.28	94
	% within Source	7.4%	21.3%	19.1%	39.4%	12.8%		100.0%
Observations	Count	30	41	39	70	20	3.04	200
	% within Source	15.0%	20.5%	19.5%	35.0%	10.0%		100.0%
Total	Count	74	156	146	303	95	3.24	774
	% within Source	9.6%	20.2%	18.9%	39.1%	12.3%		100.0%

Chi-square statistics = 10.89, p-value 0.207, df =8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	I
Observations	200	3.0450
Teacher Educators	94	3.2872
Student Teachers	480	3.3188
Sig.		.085

Table 4.35 shows the chi-square statistics (10.89) with p-value (0.207) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (40.8%, 39.4% & 35% respectively) of the theoretical concept of maintaining sequence of activities. The positive responses in sum for "Good" and "Excellent" categories of student teachers and teacher educators (53.9% & 52.2% respectively) identified the successful level of application of the theoretical concept. However, the observation records identified the positive responses (45%) below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers and teacher educators (46% & 47.8% respectively) as well as the total average negative

responses (48.7%) identified a considerable gap (25%-50%) of application. Whereas, the negative responses of observation records (55%) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.32, 3.29 & 3.05 respectively).

It was concluded that the mean scores of student teachers and teacher educators (3.32 & 3.29 respectively) identified the successful application of the theoretical concept at good level. However, the mean score of observation records (3.05) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers and teacher educators identified a considerable gap (25%-50%). Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.36. Application and Gaps Regarding the Concept of Seating Arrangements in the Classroom

Data Source		Seating Arrangements in the classroom					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	18	19	18	348	77	3.93	480
	% within Source	3.8%	4.0%	3.8%	72.5%	16.0%		100.0%
Teacher Educators	Count	5	8	12	56	13	3.68	94
	% within Source	5.3%	8.5%	12.8%	59.6%	13.8%		100.0%
Observations	Count	11	11	37	124	17	3.62	200
	% within Source	5.5%	5.5%	18.5%	62.0%	8.5%		100.0%
Total	Count	34	38	67	528	107	3.82	774
	% within Source	4.4%	4.9%	8.7%	68.2%	13.8%		100.0%

Chi-square statistics = 51.46, p-value 0.000, df =8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.6250	
Teacher Educators	92	3.6848	
Student Teachers	480		3.9313
Sig.		.807	1.000

Table 4.36 shows the chi-square statistics (51.46) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (72.5%, 59.6% & 62% respectively) of the theoretical concept of seating arrangements. The positive responses in sum for "Good" and "Excellent" categories of student teachers, teacher educators and observation records (88%, 73.4% & 70.5% respectively) identified the successful level of application of the theoretical concept.

The overall negative responses, including the responses of neither good nor poor category, of teacher educators and observation records (26.6% & 29.5% respectively) identified a considerable gap (25%-50%). However, the negative responses of student

teachers (11.6%) identified an insignificant gap (0-25%) of application of the theoretical concept.

According to the Tukey's HSD, there was no significant difference between the mean scores of observation records and teacher educators (3.62 & 3.68 respectively). However there was a significant difference of the mean score of student teachers (3.93) with both of the mean scores of observation records and teacher educators (3.62 & 3.68 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.93, 3.68 & 3.62 respectively) identified the successful application of the theoretical concept at good level. The student teachers identified an insignificant gap (0-25%) of application. Whereas, the teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.37. Application and Gaps Regarding the Concept of Setting Jointly Rules and Their Consequences

Data Source		Setting jointly rules & consequences in the classroom					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	21	63	56	298	42	3.52	480
	% within Source	4.4%	13.1%	11.7%	62.1%	8.8%		100.0%
Teacher Educators	Count	3	11	27	47	6	3.46	94
	% within Source	3.2%	11.7%	28.7%	50.0%	6.4%		100.0%
Observations	Count	13	41	48	84	14	3.44	200
	% within Source	6.5%	20.5%	24.0%	42.0%	7.0%		100.0%
Total	Count	37	115	131	429	62	3.49	774
	% within Source	4.8%	14.9%	16.9%	55.4%	8.0%		100.0%

Chi-square statistics = 41.07, p-value 0.000, df =8

Tukey's HSD			
Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.2250	
Teacher Educators	94	3.4468	3.4468
Student Teachers	480		3.5771
Sig.		.097	.445

Table 4.37 shows the chi-square statistics (41.07) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (62.1%, 50% 42% respectively) of the theoretical concept of setting jointly rules and their consequences. The positive responses, for "Excellent and Good" categories, of student teachers and teacher educators (70.9% & 56.4% respectively) identified the successful level of application of the theoretical concept. However, the observation records identified the positive responses (49%) below 50% of the total responses.

The negative responses, including neither good nor poor, of student teachers and teacher educators (29.2% & 43.6% respectively) identified a considerable gap (25%-

50%) of application. The negative responses of observation records (51%) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.45) was not significantly different with the mean score of observation records (3.23) as well as with that of student teachers (3.58). However, there was a significant difference between the mean scores of observation records and student teachers (3.23 & 3.58 respectively).

It was concluded that the mean scores of student teachers and teacher educators (3.58 & 3.45 respectively) identified the successful application of the theoretical concept at good level. Whereas the mean scores of observation records (3.23) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers and teacher educators identified a considerable gap (25%-50%) of application. Whereas, the observation records identified a significant gap (50%-75%) of application of the theoretical concept.

Table 4.38. Application and Gaps Regarding the Concept of Using Effectively Punishment and Reward Techniques

Data Sources		Using effectively punishment & reward techniques					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	11	65	92	285	27	3.53	480
	% within Source	2.3%	13.5%	19.2%	59.4%	5.6%		100.0%
Teacher Educators	Count	1	17	17	56	3	3.46	94
	% within Source	1.1%	18.1%	18.1%	59.6%	3.2%		100.0%
Observations	Count	12	31	33	106	18	3.43	200
	% within Source	6.0%	15.5%	16.5%	53.0%	9.0%		100.0%
Total	Count	24	113	142	447	48	3.47	774
	% within Source	3.1%	14.6%	18.3%	57.8%	6.2%		100.0%

Chi-square statistics = 14.71, p-value 0.065, df =8

Tukey's HSD		
Source	Subset for alpha = 0.05	
	N	1
Observations	200	3.4350
Teacher Educators	94	3.4574
Student Teachers	480	3.5250
Sig.		.643

Table 4.38 shows the chi-square statistics (14.71) with p-value (0.065) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (59.4%, 59.6% & 53% respectively) of the theoretical concept of punishment and reward techniques. The positive responses in sum for "Good" and "Excellent" categories of student teachers, teacher educators and observation records (65%, 62.8% & 62%) identified the successful level of application of the theoretical concept.

The negative responses, including neither good nor poor, of student teachers, teacher educators and observation records (35%, 37% & 37% respectively) identified a considerable gap (25%-50%) of application.

According to the Tukey's HSD, there was no significant difference, among the mean scores of student teachers, teacher educators and observation records (3.53, 3.46 & 3.44 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.53, 3.46 & 3.44 respectively) identified the successful application of the theoretical concept at good level. The student teachers, teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.39. Application and Gaps Regarding the Concept of Responding Appropriately to Students' Off-task and Disruptive Behaviour

		Responding to students' off-task & Disruptive Behavior					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	28	78	106	232	36	3.35	480
	% within Source	5.8%	16.3%	22.1%	48.3%	7.5%		100.0%
Teacher Educators	Count	10	17	23	38	6	3.13	94
	% within Source	10.6%	18.1%	24.5%	40.4%	6.4%		100.0%
Observations	Count	18	44	55	74	9	3.06	200
	% within Source	9.0%	22.0%	27.5%	37.0%	4.5%		100.0%
Total	Count	56	139	184	344	51	3.25	774
	% within Source	7.2%	18.0%	23.8%	44.4%	6.6%		100.0%

Chi-square statistics = 14.438, p-value 0.071, df =8

Tukey's HSD			
Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.0600	
Teacher Educators	94	3.1383	3.1383
Student Teachers	480		3.3542
Sig.		.771	.141

Table 4.39 shows the chi-square statistics (14.438) with p-value (0.071) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (48.3%, 40.4% & 37% respectively) of the theoretical concept of students' off-task and disruptive behaviour. The positive responses for, "Excellent and Good" categories, of student teachers (55.8%) indicated the successful level of application of the theoretical concept. However, the positive responses of teacher educators and observation records (46.8% & 41.5% respectively) did not identified the successful application of the theoretical concept.

The negative responses, including neither good nor poor, of student teachers (44.2%) as well as the total average negative responses (49%) identified the considerable

gap (25% - 50%). Whereas, the teacher educators and observation records (52.2% & 58.5% respectively) identified the significant gap (50% - 75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.14) was not significantly different with the mean score of observation records (3.06) as well as with that of student teachers (3.35). However, there was a significant difference between the mean scores of observation records and student teachers (3.06 & 3.35 respectively).

It was concluded that the mean score of student teachers (3.35) identified the successful application of the theoretical concept at good level. Whereas, the teacher educators and observation records (3.14 & 3.06 respectively) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers identified a considerable gap (25%-50%) of application. Whereas, the teacher educators and observation records identified a significant gap (50%-75%) of application of the theoretical concept.

Table 4.40. Application and Gaps Regarding the Concept of the consideration of individual differences of students

		Consideration of Individual Differences while Teaching					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	31	57	91	267	34	3.45	480
	% within Source	6.5%	11.9%	19.0%	55.6%	7.1%		100%
Teacher Educators	Count	5	22	18	44	5	3.23	94
	% within Source	5.3%	23.4%	19.1%	46.8%	5.3%		100%
Observations	Count	15	36	44	97	8	3.23	200
	% within Source	7.5%	18.0%	22.0%	48.5%	4.0%		100%
Total	Count	51	115	153	408	47	3.36	774
	% within Source	6.6%	14.9%	19.8%	52.7%	6.1%		100%

Chi-square statistics = 14.37, p-value 0.072, df =8

Tukey's HSD		
Source	Subset for alpha = 0.05	
	N	I
Teacher Educators	94	3.2340
Observations	200	3.2350
Student Teachers	480	3.4500
Sig.		.126

Table 4.40 shows the chi-square statistics (14.37) with p-value (0.072) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (55.6%, 46.8% & 48.5% respectively) of the theoretical concept. The positive responses for "Excellent and Good" categories, of student teachers, teacher educators and observation records (62.7%, 52.1% & 52.5% respectively) identified the successful level of application of the theoretical concept.

The negative responses, including neither good nor poor, of student teachers, teacher educators and observation records (37.4%, 47.8% & 47.5% respectively)

identified a considerable gap (25%-50%) of application of the theoretical concept of the consideration of individual differences of students.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.45, 3.24 & 3.23 respectively).

It was concluded that the mean score of student teachers (3.45) identified the successful application of the theoretical concept at good level. Whereas, the mean scores of the teacher educators and observation records (3.24 & 3.23 respectively) identified the successful application of the theoretical concept at neither good nor poor level. All the student teachers, teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.41. Summary Table of Composite Means for Classroom Management Skills

Sr. No	Concepts	Mean
1.	Maintenance of students' attention	3.15
2.	Time and work management	2.97
3.	Management and organization of instructional materials	3.56
4.	Developing friendly environment	3.69
5.	Maintaining sequence of activities	3.24
6.	Seating arrangements in the classroom	3.82
7.	Setting jointly rules and their consequences	3.49
8.	Using punishment and reward techniques effectively	3.47
9.	Responding to off-task and disruptive behavior of students	3.25
10.	Consideration of individual differences	3.36

Average Mean = 3.40

(E) Teaching methods

Table 4.42 Application and Gaps Regarding the Concept of Recitation Method

		Recitation method					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	26	70	102	245	37	3.41	480
	% within Source	5.4%	14.6%	21.3%	51.0%	7.7%		100.0%
Teacher Educators	Count	5	15	16	45	13	3.48	94
	% within Source	5.3%	16.0%	17.0%	47.9%	13.8%		100.0%
Observations	Count	15	30	50	90	15	3.30	200
	% within Source	7.5%	15.0%	25.0%	45.0%	7.5%		100.0%
Total	Count	46	115	168	380	65	3.39	774
	% within Source	5.9%	14.9%	21.7%	49.1%	8.4%		100.0%

Chi-square statistics = 8.05, p-value 0.429, df =8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	I
Observations	200	3.3000
Student Teachers	480	3.4104
Teacher Educators	94	3.4894
Sig.		.209

Table 4.42 shows the chi-square statistics (8.05) with p-value (0.429) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (51%, 47.9% & 45% respectively) of the theoretical concept of recitation method. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (58.7%, 61.7% & 52.5% respectively) identified the successful level of application of the theoretical concept.

The negative responses, including neither good nor poor, of student teachers, teacher educators and observation records (41.3%, 38.3% & 47.5%) identified a considerable gap (25% - 50%) of application of the theoretical concept.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.49, 3.41 & 3.30 respectively).

It was concluded that the mean scores of student teachers, teacher educators as well as the observation records (3.49, 3.41 & 3.30 respectively) identified the successful application of theoretical concept at good level. All the student teachers, teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.43. Application and Gaps Regarding the Concept of Lecture Method

Data Source		Lecture method					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	13	21	74	238	134	3.95	480
	% within Source	2.7%	4.4%	15.4%	49.6%	27.9%		100.0%
Teacher Educators	Count	5	6	12	52	19	3.78	94
	% within Source	5.3%	6.4%	12.8%	55.3%	20.2%		100.0%
Observations	Count	5	14	33	112	36	3.80	200
	% within Source	2.5%	7.0%	16.5%	56.0%	18.0%		100.0%
Total	Count	23	41	119	402	189	3.89	774
	% within Source	3.0%	5.3%	15.4%	51.9%	24.4%		100.0%

Chi-square statistics = 12.47, p-value 0.131, df =8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1
Teacher Educators	94	3.7872
Observations	200	3.8000
Student Teachers	480	3.9563
Sig.		.216

Table 4.43 shows the chi-square statistics (12.47) with p-value (0.131) greater than (.05) alpha level. The table shows that there was no significant difference among the responses student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified good level of application (49.6%, 55.3% & 56% respectively) of the theoretical concept of lecture method. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (77.5%, 75.5% & 74% respectively) identified the successful level of application of the theoretical concept.

The overall negative responses, including the responses in neither good nor poor category, of student teachers (22.5% & 24.5%) identified an insignificant gap (0-25%) of application. However, the observation records (26%) identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.96, 3.80 & 3.79 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.96, 3.80 & 3.79 respectively) identified the successful application of the theoretical concept at good level. The student teachers and the teacher educators identified an insignificant gap (0-25%) of application. Whereas, the observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.44. Application and Gaps Regarding the Concept of Demonstration Method

		Demonstration method					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	20	38	70	283	69	3.71	480
	% within Source	4.2%	7.9%	14.6%	59%	14.4%		100.0%
Teacher Educators	Count	6	6	15	58	9	3.63	94
	% within Source	6.4%	6.4%	16.0%	61.7%	9.6%		100.0%
Observations	Count	19	22	53	96	10	3.28	200
	% within Source	9.5%	11.0%	26.5%	48.0%	5.0%		100.0%
Total	Count	45	66	206	369	88	3.50	774
	% within Source	5.8%	8.5%	26.6%	47.7%	11.4%		100.0%

Chi-square statistics = 36.53, p-value 0.000, df =8

Tukey's HSD			
Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.2800	
Teacher Educators	94		3.6383
Student Teachers	480		3.7146
Sig.		1.000	.753

Table 4.44 shows the chi-square statistics (36.53) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the student teachers, teacher educators' responses and observation records.

Overall, the student teachers, teacher educators and observation records identified good level of application (59%, 61.7% & 48% respectively) of the theoretical concept of demonstration method. The positive responses for "Excellent and Good" categories, of student teachers, teacher educators and observation records (73.4%, 71.3% & 53% respectively) identified the successful level of application of the theoretical concept.

The overall negative responses, including the responses in neither good nor poor category, of student teachers, teacher educators and observation (26.7%, 28.8% & 47% respectively) identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference between the mean scores of student teachers and teacher educators (3.71 & 3.64 respectively). However, there was a significant difference of observation records (3.28) with the mean score of teacher educators (3.64) as well as with that of student teachers (3.71).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.71, 3.64 & 3.28 respectively) identified the successful application of the theoretical concept at good level. All the student teachers, teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.45. Application and Gaps Regarding the Concept of Activity Method

Data Source		Activity method					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	49	31	102	230	68	3.49	480
	% within Source	10.2%	6.5%	21.3%	47.9%	14.2%		100.0%
Teacher Educators	Count	9	12	19	40	14	3.40	94
	% within Source	9.6%	12.8%	20.2%	42.6%	14.9%		100.0%
Observations	Count	15	44	50	70	21	3.19	200
	% within Source	7.5%	22.0%	25.0%	35.0%	10.5%		100.0%
Total	Count	73	87	171	340	103	3.40	774
	% within Source	9.4%	11.2%	22.1%	43.9%	13.3%		100.0%

Chi-square statistics = 39.76, p-value 0.000, df =8

Tukey's HSD			
Data Sources	N	Subset for alpha = 0.05	
		1	2
Observations	200	3.1900	
Teacher Educators	94	3.4043	3.4043
Student Teachers	480		3.4938
Sig.		.192	.748

Table 4.45 shows the chi-square statistics (39.76) with p-value greater than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (47.9%, 42.6% & 35% respectively) of the theoretical concept of activity method. The positive responses, for "Excellent and Good" categories, of student teachers and teacher educators (62.1% & 57.5% respectively) identified the successful level of application of the theoretical concept. However, the observation records with positive responses (45.5%) did not identified the successful application.

The overall negative responses, including the responses in neither good nor poor category, of student teachers and teacher educators (37.9% & 42.5% respectively) identified a considerable gap (25%-50%) of application. However, the negative

responses of the observation records (54.5%) identified a significant gap (50%-75%) between the theoretical knowledge and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.40) had no significant difference with the mean score of student teachers (3.49) as well as with that of observation records (3.19). However, there was a significant difference between the mean scores of observation records and the student teachers (3.19 & 3.49 respectively).

It was concluded that the mean scores of student teachers and teacher educators (3.49 & 3.40 respectively) identified the successful application of the theoretical concept at good level. However, the mean score of observation records (3.19) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers and the teacher educators identified a considerable gap (25%-50%) of application. Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.46. Application and Gaps Regarding the Concept of Problem Solving Method

		Problem solving method					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	38	76	114	193	59	3.33	480
	% within Source	7.9%	15.8%	23.8%	40.2%	12.3%		100.0%
Teacher Educators	Count	7	16	23	39	9	3.28	94
	% within Source	7.4%	17.0%	24.5%	41.5%	9.6%		100.0%
Observations	Count	24	48	44	72	12	3.00	200
	% within Source	12.0%	24.0%	22.0%	36.0%	6.0%		100.0%
Total	Count	69	140	181	304	80	3.24	774
	% within Source	8.9%	18.1%	23.4%	39.3%	10.3%		100.0%

Chi-square statistics = 14.64, p-value 0.066, df = 8

Tukey's HSD			
Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.0000	
Teacher Educators	94	3.2872	3.2872
Student Teachers	480		3.3313
Sig.		.050	.931

Table 4.46 shows the chi-square statistics (14.64) with p-value (0.066) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified good level of application (40.2%, 41.5% & 36% respectively) of the theoretical concept of problem solving method. The positive responses, for "Excellent and Good" categories, of student teachers and teacher educators (52.5% & 51.1% respectively) identified the successful level of application of the theoretical concept. However, the observation records with positive responses (42%) did not identified the successful application.

The overall negative responses, including the responses in neither good nor poor category, of student teachers and teacher educators (47.5% & 48.9% respectively) identified a considerable gap (25%-50%). However, the negative responses of the

observation records (58%) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.28) was not significantly different with the mean score of observation records (3.00) as well as with that of student teachers (3.33). However, there was a significant difference between the mean scores of observation records and the student teachers (3.00 & 3.33 respectively).

It was concluded that the mean scores of student teachers and teacher educators (3.28 & 3.33 respectively) identified the successful application of the theoretical concept at good level. However, the mean score of observation records (3.00) identified the successful application of the theoretical concept at neither good nor poor level. The student teachers and the teacher educators identified a considerable gap (25%-50%) of application. Whereas, the observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.47. Application and Gaps Regarding the Concept of Micro-teaching Method

Data Source		Microteaching					Mean	Total
		Very Poor	Poor	Undecided	Good	Excellent		
Student Teachers	Count	14	45	99	299	23	3.57	480
	% within Source	2.9%	9.4%	20.6%	62.3%	4.8%		100.0%
Teacher Educators	Count	2	13	20	57	2	3.47	94
	% within Source	2.1%	13.8%	21.3%	60.6%	2.1%		100.0%
Observations	Count	14	26	56	97	7	3.29	200
	% within Source	7.0%	13.0%	28%	48.5%	3.5%		100.0%
Total	Count	30	74	152	486	32	3.48	774
	% within Source	3.9%	9.6%	19.6%	62.8%	4.1%		100.0%

Chi-square statistics = 19.26, p-value = 0.014, df = 8

Tukey's HSD			
Source	N	Subset for alpha = 0.05	
		1	2
Observations	200	3.285	
Teacher Educators	94	3.468	3.468
Student Teachers	480		3.567
Sig.		.134	.556

Table 4.47 shows the chi-square statistics (19.26) with p-value (0.014) less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified good level of application (62.3%, 60.6% & 48.5% respectively) of the theoretical concept of micro-teaching. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (67.1%, 62.7% & 52% respectively) identified the successful level of application of the theoretical concept.

The overall negative responses, including the responses in neither good nor poor category, of student teachers, teacher educators and observation records (32.9%, 37.3% &

48% respectively) identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, the mean score of teacher educators (3.47) was not significantly different with the mean score of observation records (3.29) as well as with that of student teachers (3.57). However, there was a significant difference between the mean scores of observation records and student teachers (3.29 & 3.57 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.57, 3.47 & 3.29 respectively) identified the successful application of the theoretical concept at good level. The student teachers, teacher educators and observation records identified a considerable gap (25%-50%) of application. However, the observation records identified a greater level of a considerable gap (48%) as compared to the student teachers (37.3%).

Table 4.48. Application and Gaps Regarding the Concept of Programmed Instruction

		Programmed Instruction					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	152	164	130	29	5	2.10	480
	% within Source	31.7%	34.2%	27.1%	6.0%	1.0%		100.0%
Teacher Educators	Count	33	38	15	3	5	2.03	94
	% within Source	35.1%	40.4%	16.0%	3.2%	5.3%		100.0%
Observations	Count	61	90	31	13	5	2.05	200
	% within Source	30.5%	45.0%	15.5%	6.5%	2.5%		100.0%
Total	Count	246	292	176	45	15	2.08	774
	% within Source	31.8%	37.7%	22.7%	5.8%	1.9%		100.0%

Chi-square statistics =24.70, p-value 0.002, df =8

Tukey's HSD

Data Source	Subset for alpha = 0.05	
	N	1
Teacher Educators	94	2.032
Observations	200	2.055
Student Teachers	480	2.106
Sig.		.762

Table 4.48 shows the chi-square statistics (24.70) with p-value (0.002) less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the poor level of application (34.2%, 40.4% & 45% respectively) of the theoretical concept of programmed instruction. The positive responses, for "Excellent and Good" categories of student teachers, teacher educators and observation records (7%, 8.5% & 9% respectively) did not identified the level of successful application of the theoretical concept.

The negative responses, including neither good nor poor category, of student teachers, teacher educators and observation records (93%, 92.5% & 91% respectively) identified a critical gap (75%-100%) of application of the theoretical concept.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators' responses and observation records (2.11, 2.06 & 2.03 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (2.11, 2.06 & 2.03 respectively) identified the successful application of the theoretical concept at poor level. All the student teachers, teacher educators and observation records identified a critical gap (75%-100%) between the theoretical concept and professional practice of student teachers.

Table 4.49. Application and Gaps Regarding the Concept of Computer Assisted Instruction

Data Source		Computer Assisted Instruction					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	30	154	105	164	39	3.03	480
	% within Source	6.3%	32.1%	21.9%	31.7%	8.1%		100.0%
Teacher Educators	Count	4	37	26	22	5	2.86	94
	% within Source	.4.2%	39.4%	27.7%	23.4%	5.3%		100.0%
Observations	Count	10	73	54	57	6	2.88	200
	% within Source	5.0%	36.5%	27.0%	28.5%	3.0%		100.0%
Total	Count	44	264	185	231	50	2.97	774
	% within Source	5.7%	34.1%	23.9%	29.8%	6.5%		100.0%

Chi-square statistics = 12.54, p-value = 0.128, df = 8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	I
Observations	200	2.86
Teacher Educators	94	2.88
Student Teachers	480	3.03
Sig.		.296

Table 4.49 shows the chi-square statistics (12.54) with p-value (0.128) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the poor level of application (32.1%, 39.4% & 36.5% respectively) of the theoretical concept of computer assisted instruction. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (39.8%, 28.7% & 31.5% respectively) did not identified the successful application of the theoretical concept.

The negative responses, including the neither good nor poor category, of student teachers, teacher educators and observation records (60.3%, 71.3% & 68.5% respectively) identified a significant gap (50%-75%).

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.03, 2.86 & 2.88 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.03, 2.86 & 2.88) identified the successful application of the theoretical concept at neither good nor poor level. All the student teachers, teacher educators and observation records identified a significant gap (75%-100%) between the theoretical concept and professional practice of student teachers.

Table 4.50. Application and Gaps Regarding the Concept of Cooperative Learning Method

Data Source		Cooperative Learning Method					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	14	32	60	282	92	3.83	480
	% within Source	2.9%	6.7%	12.5%	58.8%	19.2%		100.0%
Teacher Educators	Count	8	7	8	48	23	3.75	94
	% within Source	8.5%	7.4%	8.5%	51.1%	24.5%		100.0%
Observations	Count	12	20	28	94	46	3.71	200
	% within Source	6.0%	10.0%	14.0%	47.0%	23.0%		100.0%
Total	Count	34	59	96	424	161	3.80	774
	% within Source	4.4%	7.6%	12.4%	54.8%	20.8%		100.0%

Chi-square statistics = 16.32, p-value = 0.038, df = 8

Tukey's HSD		
Teachers Training		Subset for alpha = 0.05
College Type	N	1
Observations	200	3.710
Teacher Educators	94	3.755
Student Teachers	480	3.831
Sig.		.517

Table 4.50 shows the chi-square statistics (16.32) with p-value (0.038) less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (58.8%, 51.1% & 47% respectively) of the theoretical concept of cooperative learning method. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (78%, 75.6% & 70% respectively) identified the successful level of application of the theoretical concept.

The overall negative responses, including the neither good nor poor category, of student teachers (22%). Whereas, the negative responses of teacher educators and

observation records (25% & 30% respectively) identified a significant gap (25% - 50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.83, 3.75 & 3.71 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.83, 3.75 & 3.71 respectively) identified the successful application of the theoretical concept at good level. The student teachers identified an insignificant gap (0-25%) of application. Whereas, the teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.51. Application and Gaps Regarding the Concept of Role Playing/Simulations

Data Source		Role Playing/Simulations					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	111	263	70	27	9	2.08	480
	% within Source	23.1%	54.8%	14.6%	5.6%	1.9%		100.0%
Teacher Educators	Count	23	55	8	5	3	2.04	94
	% within Source	24.5%	58.5%	8.5%	5.3%	3.2%		100.0%
Observations	Count	55	124	10	5	6	1.91	200
	% within Source	27.5%	62%	5.0%	2.5%	3%		100.0%
Total	Count	189	442	88	37	18	2.03	774
	% within Source	24.4%	57.1%	11.4%	5.3%	2.3%		100.0%

Chi-square statistics = 18.66, p- value 0.017, df = 8

Tukey's HSD		
Source	Subset for alpha = 0.05	
	N	1
Observations	200	1.91
Teacher Educators	94	2.04
Student Teachers	480	2.08
Sig.		.176

Table 4.51 shows the chi-square statistics (13.16) with p-value (0.106) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the poor level of application (54.8%, 58.5% & 62% respectively) of the theoretical concept of role playing/simulations. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (7.5%, 8.5% & 5.5% respectively) did not identified the level of successful application of the theoretical concept.

The overall negative responses, including the neither good nor poor category, of student teachers, teacher educators and observation records (92.5%, 91.5% & 94.5%)

identified a maximum level of critical gap (75%-100%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (2.08, 2.04 & 1.91 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (2.08, 2.04 & 1.91 respectively) identified the poor level of application of the theoretical concept. All the student teachers, teacher educators and observation records identified a critical gap (75%-100%) of application of the theoretical concept.

Table 4.52. Summary of Composite Means for Methods of Teaching

Sr. No	Concepts	Mean
1.	Recitation method	3.39
2.	Lecture method	3.89
3.	Demonstration method	3.50
4.	Activity method	3.40
5.	Problem solving method	3.24
6.	Microteaching	3.48
7.	Programmed instruction	2.08
8.	Computer assisted instruction	2.97
9.	Cooperative learning method	3.80
10.	Role playing method	2.03

Average Mean = 3.17

(F) *Learning materials and technology integration*

Table 4.53. Application and Gaps Regarding the Concept of Charts and Pictures

Data Source		Charts & Pictures					Mean	Total
		Very Poor	Poor	Neither Nor	Good	Excellent		
Student Teachers	Count	13	32	62	262	111	3.88	480
	% within Source	2.7%	6.7%	12.9%	54.6%	23.1%		100.0%
Teacher Educators	Count	4	7	13	48	22	3.81	94
	% within Source	4.3%	7.4%	13.8%	51.1%	23.4%		100.0%
Observations	Count	15	19	16	111	39	3.70	200
	% within Source	7.5%	9.5%	8.0%	55.5%	19.5%		100.0%
Total	Count	32	58	91	421	172	3.83	774
	% within Source	4.1%	7.5%	11.8%	54.4%	22.2%		100.0%

Chi-square statistics = 13.79 p-value = 0.087 degrees of freedom = 8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1
Observations	200	3.700
Teacher Educators	94	3.819
Student Teachers	480	3.888
Sig.		.190

Table 4.53 shows the chi-square statistics (13.79) with p-value greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (54.6%, 51.1% & 55.5% respectively) of the theoretical concept of charts and pictures. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (77.7%, 74.5% & 75% respectively) identified the successful level of application of the theoretical concept.

The negative responses, including neither good nor poor category, of student teachers (22.3%) identified an insignificant gap (0-25%) of application of the theoretical

concept. Whereas, the negative responses of teacher educators and observation records (25.5% & 25%) identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.89, 3.82 & 3.70 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.89, 3.82 & 3.70 respectively) identified the successful application of the theoretical concept at good level. The student teachers identified an insignificant gap (0-25%). Whereas, the teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.54. Application and Gaps Regarding the Concept of Using Writing Board (White Board/Black Board)

Data Sources		Using writing board/black board/white board					Mean	Total
		Very Poor	Poor	Neither Good nor Poor	Good	Excellent		
Student Teachers	Count	31	30	41	243	135	3.88	480
	% within Source	6.5%	6.3%	8.5%	50.6%	28.1%		100.0%
Teacher Educators	Count	5	10	21	38	20	3.62	94
	% within Source	5.3%	10.6%	22.3%	40.4%	21.3%		100.0%
Observations	Count	16	23	23	101	37	3.60	200
	% within Source	8.0%	11.5%	11.5%	50.5%	18.5%		100.0%
Total	Count	52	63	85	382	192	3.77	774
	% within Source	6.7%	8.1%	11.0%	49.4%	24.8%		100.0%

Chi-square statistics = 27.64, p-value = 0.001 with df = 8

Tukey's HSD

Source	Subset for alpha = 0.05	
	N	I
Observations	200	3.60
Teacher Educators	94	3.62
Student Teachers	480	3.88
Sig.		.056

Table 4.54 shows the chi-square statistics (27.64) with p-value (0.001) less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (50.6%, 40.4% & 50.5% respectively) of the theoretical concept of using write board/white board. The positive responses, for "Excellent and Good" categories of student teachers, teacher educators and observation records (78.7%, 61.7% & 69% respectively) identified the successful level of application of the theoretical concept.

The negative responses, including neither good nor poor category, of student teachers (21.3%) identified an insignificant gap (0-25%) of application of the theoretical

concept. Whereas, the negative responses of teacher educators and observation records (38.3% & 31% respectively) identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference among the mean scores of student teachers, teacher educators and observation records (3.88, 3.62 & 3.60 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records identified the successful application of the theoretical concept at good level. The student teachers identified an insignificant gap (0-25%) whereas, the teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.55. Application and Gaps Regarding the Concept of the Presentation of Models for Delivery of Content

Data Source		Presentation of models for delivery of content					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	15	23	28	258	156	4.07	480
	% within Source	3.1%	4.8%	5.8%	53.8%	32.5%		100.0%
Teacher Educators	Count	5	10	10	43	26	3.79	94
	% within Source	5.3%	10.6%	10.6%	45.7%	27.7%		100.0%
Observations	Count	19	22	19	101	39	3.59	200
	% within Source	9.5%	10%	9.5%	50.5%	20.5%		100.0%
Total	Count	39	58	67	402	208	3.91	774
	% within Source	5.0%	7.5%	8.7%	51.9%	26.9%		100.0%

Chi- square statistics = 34.53, p- value = .000, df = 8

Tukey's HSD			
Source	N	Subset for alpha = 0.05	
		1	2
Observations	200	3.595	
Teacher Educators	94	3.798	
Student Teachers	480		4.077
Sig.		.163	1.000

Table 4.55 shows the chi-square statistics (13.79) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (53.8%, 45.8% & 50.5% respectively) of the theoretical concept of using presentation of models . The positive responses, for Excellent and Good" categories, of student teachers, teacher educators and observation records (86.3%, 73.4% & 71% respectively) identified the successful level of application of theoretical concept.

The overall negative responses, including neither good nor poor category, of student teachers (13.7%) identified an insignificant gap (0 - 25%). Whereas, the negative

responses of teacher educators and observation records (26.6% & 29% respectively) identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference between the mean scores of observation records and the teacher educators (3.59 & 3.79 respectively). However the mean score of student teachers (4.07) had a significant difference with the mean scores of observation records and teacher educators (3.59 & 3.79 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (4.07, 3.79 & 3.59 respectively) identified the successful application of the theoretical concept at good level. Whereas, the teacher educators and observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.56. Application and Gaps Regarding the Concept of the Concept of art & Craft Skills (Pencil Sketching & Geometrical Shapes)

Data Source		Art & Craft Skills (Pencil Sketching & Geometrical Shapes)					Mean	Total
		Very Poor	Poor	Neither Good, Nor Poor	Good	Excellent		
Student Teachers	Count	17	20	21	288	134	4.05	480
	% within Source	3.5%	4.2%	4.4%	60.0%	27.9%		100 %
Teacher Educators	Count	5	7	6	55	21	3.85	94
	% within Source	5.3%	7.4%	6.4%	58.5%	22.3%		100 %
Observations	Count	18	23	31	105	23	3.46	200
	% within Source	9.0%	11.5%	15.5%	52.5%	11.5%		100 %
Total	Count	40	50	58	448	178	3.92	774
	% within Source	5.2%	6.5%	7.5%	57.9%	23.0%		100 %

chi-square statistics = 64.49, p-value = 0.000, df = 8

Tukey's HSD			
Source	N	Subset for alpha = 0.05	
		1	2
Observations	200	3.46	
Teacher Educators	94		3.85
Student Teachers	480		4.05
Sig.		1.000	.159

Table 4.56 shows the chi-square statistics (64.49) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (60%, 58.5% & 52.5% respectively) of theoretical concept. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (87.9%, 80.8% & 64% respectively) identified the successful level of application of the theoretical concept of art and craft skills.

The overall negative responses, including the neither good nor poor category, of student teachers and teacher educators (12.1% & 19.2% respectively) identified an insignificant gap (0-25%). Whereas, the negative responses of observation records (36%)

identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference between the mean scores of student teachers and teacher educators (4.04 & 3.85 respectively).

However, there was a significant difference of the mean score of observation records (3.46) with the mean score of student teachers as well as with that of teacher educators (4.04 & 3.85 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (4.04, 3.85 & 3.46 respectively) identified the successful application of the theoretical concept at good level. The student teachers and the teacher educators identified an insignificant gap (0-25%). Whereas, the observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.57. Application and Gaps Regarding the Concept of Using Text Books, Work Books & Teachers' Manuals

		Text Books, Work Books & Teachers' Manuals					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	35	32	39	218	156	3.89	480
	% within Source	7.3%	6.7%	8.1%	45.4%	32.5%		100%
Teacher Educators	Count	7	5	5	53	24	3.87	94
	% within Source	7.4%	5.3%	5.3%	56.4%	25.5%		100%
Observations	Count	17	16	29	113	25	3.56	200
	% within Source	8.5%	8.0%	14.5%	56.5%	12.5%		100%
Total	Count	59	53	73	384	205	3.80	774
	% within Source	7.6%	6.8%	9.4%	49.6%	26.5%		100%

Chi-square statistics = 34.85, p-value = 0.000, df = 8

Tukey's HSD			
Data Source	Subset for alpha = 0.05		
	N	1	2
Observations	200	3.57	
Teacher Educators	94		3.87
Student Teachers	480		3.89
Sig.		1.000	.986

Table 4.57 shows the chi-square statistics (34.85) with p-value less than (.05) alpha level. The table shows that there was a significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the good level of application (45.4%, 56.4% & 56.5% respectively) of the theoretical concept of using text books, work books and teachers' manuals. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (87.9%, 81.9% & 69% respectively) identified the successful level of application of the theoretical concept.

The overall negative responses, including the neither good nor poor category, of student teachers and teacher educators (12.35% & 18.1% respectively) identified an

insignificant gap (0 - 25%) of application. However, the negative responses of observation records (31%) identified a considerable gap (25% - 50%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference between the mean scores of student teachers and teacher educators (3.89 & 3.87 respectively). However, the mean score of observation records (3.56) was significantly different with the mean score of student teachers (3.89) as well as with that of teacher educators (3.87).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.89, 3.87 & 3.56 respectively) identified the successful application of the theoretical concept at good level. The student teachers and the teacher educators identified an insignificant gap (0-25%). Whereas, the observation records identified a considerable gap (25%-50%) between the theoretical concept and professional practice of student teachers.

Table 4.58. Application and Gaps Regarding the Concept of Using Games, Simulations & Spread Sheets

Data Source		(Games, Simulations & Spread Sheets)					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	58	108	147	140	27	2.93	480
	% within Source	12.1%	22.5%	30.6%	29.2%	5.6%		100%
Teacher Educators	Count	14	21	24	26	9	2.94	94
	% within Source	14.9%	22.3%	25.5%	27.7%	9.6%		100%
Observations	Count	30	52	59	49	10	2.78	200
	% within Source	15.0%	26.0%	29.5%	24.5%	5.0%		100%
Total	Count	102	181	230	215	46	2.89	774
	% within Source	13.2%	23.4%	29.7%	27.8%	5.9%		100.0%

Chi - square statistics = 6.204, p -value = 0.624, df = 8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1
Observations	200	2.785
Teacher Educators	94	2.819
Student Teachers	480	2.938
Sig.		.421

Table 4.58 shows the chi-square statistics (6.204) with p-value greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

The student teachers identified almost equal responses (29.2% & 30.6% respectively) in good and neither good nor poor categories. The teacher educators identified greater responses (27.7%) in good category. Whereas, the observation records identified greater responses (29.5%) in neither good nor poor category. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (34.8%, 37.3% & 29.1% respectively) did not identified the successful application of the theoretical concept of using games, simulations and spread sheets.

Moreover, the overall negative responses, including the neither good nor poor category, of the student teachers, teacher educators and observation records (65.2%, 62.6% & 70.5%) identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference among all the mean scores of the responses of student teachers, teacher educators and observation records (2.93, 2.81 & 2.78 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (2.93, 2.81 & 2.78 respectively) identified the successful application of the theoretical concept at neither good nor poor level. All, the student teachers, teacher educators and observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.59. Application and Gaps Regarding the Concept of Using Online and Offline Tutorials

		Using on line & off line Tutorials					Mean	Total
		Very Poor	Poor	Neither Nor Poor	Good	Excellent		
Student Teachers	Count	68	348	39	17	12	2.09	480
	% within Source	14.2%	71.7%	8.1%	3.5%	2.5%		100.0%
Teacher Educators	Count	19	60	7	5	3	2.07	94
	% within Source	20.2%	63.8%	7.4%	5.3%	3.2%		100.0%
Observations	Count	23	155	11	6	5	2.08	200
	% within Source	11.2%	77.5%	5.5%	3.0%	2.5%		100.0%
Total	Count	110	559	57	28	20	2.08	774
	% within Source	14.2%	72.2%	7.4%	3.6%	2.6%		100.0%

chi-square statistics = 7.572, p-value = 0.476, df = 8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1
Teacher Educators	94	2.07
Observations	200	2.08
Student Teachers	480	2.09
Sig.		.991

Table 4.59 shows the chi-square statistics (7.572) with p-value greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the poor level of application (71.7%, 63.8% & 77.5% respectively) of the theoretical concept of using online and off-line tutorials. The positive responses, for Excellent and Good" categories, of student teachers, teacher educators and observation records (6%, 8.6% & 5.8% respectively) did not identified the successful application of the theoretical concept.

The overall negative responses, including the neither good nor poor category, of student teachers, teacher educators and observation records (94%, 91.4% & 94.2%) identified a critical gap (75%-100%).

According to the Tukey's HSD, there was no significant difference among the mean scores of the responses of student teachers, teacher educators and observation records (2.09, 2.07 & 2.08 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (2.09, 2.07 & 2.08 respectively) identified the poor level of application of the theoretical concept. A critical gap of application (75%-100%) between the theoretical concept and professional practice of student teachers was found through the responses of student teachers, teacher educators and the observation records respectively.

Table 4.60. Application and Gaps Regarding the Concept of Using Multimedia Presentations

Data Source		Using Multi-media for Presentations					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	72	157	100	117	34	2.76	480
	% within Source	15%	32.7%	20.8%	24.4%	7.1%		100.0%
Teacher Educators	Count	17	28	21	19	9	2.73	94
	% within Source	18.1%	29.8%	22.3%	26.6%	9.6%		100.0%
Observations	Count	34	72	54	31	9	2.54	200
	% within Source	17%	36%	27.0%	15.5%	4.5%		100.0%
Total	Count	123	257	175	167	52	2.70	774
	% within Source	15.9%	33.2%	22.6%	21.6%	6.7%		100.0%

Chisquare statistics = 11.842, p-value = 0.158 df = 8

Tukey's HSD		
Source	Subset for alpha = 0.05	
	N	I
Observations	200	2.54
Teacher Educators	94	2.73
Student Teachers	480	2.76
Sig.		.991

Table 4.60 shows the chi-square statistics (11.842) with p-value greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the poor level of application (32.7%, 29.8% & 36% respectively) of the theoretical concept of using multi-media for presentations. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (31.5%, 36.2% & 20% respectively) did not identify the successful application of the theoretical concept.

The overall negative responses, including neither good nor poor category, of student teachers, teacher educators (68.5% & 64.8% respectively) identified a significant

gap (50%-75%) of application of the theoretical concept. Whereas, the observation records (80%) identified a critical gap (75% - 100%) between the theoretical concept and professional practice of student teachers.

According to the Tukey's HSD, there was no significant difference among all the mean scores of the responses of student teachers, teacher educators and observation records (2.76, 2.73 & 2.58 respectively).

It was concluded that the mean scores of student teachers the teacher educators and observation records (2.76, 2.73 & 2.58 respectively) identified the successful application of the theoretical concept at poor level. The student teachers and the teacher educators identified a significant gap (50%-75%) of application of the theoretical concept. Whereas, the observation records identified a critical gap (75%-80%) between the theoretical concept and professional practice of student teachers.

Table 4.61. Application and Gaps Regarding the Concept of Data Collection and Analysis through Computer Skills of Student Teachers

		Data Collection & Analysis through Computer Skills					Mean	Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent		
Student Teachers	Count	108	192	64	75	41	2.48	480
	% within Source	22.5%	40.0%	13.3%	15.6%	8.5%		100.0%
Teacher Educators	Count	21	40	15	11	7	2.39	94
	% within Source	22.3%	42.6%	16.0%	11.7%	7.4%		100.0%
Observations	Count	44	90	37	19	10	2.31	200
	% within Source	22.0%	45.0%	18.5%	9.5%	5.0%		100.0%
Total	Count	173	322	116	105	58	2.42	774
	% within Source	22.4%	41.6%	15.0%	13.6%	7.5%		100.0%

Chi-square statistics = 10.011, p-value = 0.264 dg = 8

Tukey's HSD		
Data Source	Subset for alpha = 0.05	
	N	1
Observations	200	2.31
Teacher Educators	94	2.39
Student Teachers	480	2.48
Sig.		.378

Table 4.61 shows the chi-square statistics (10.011) with p-value (0.264) greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers, teacher educators and observation records.

Overall, the student teachers, teacher educators and observation records identified the poor level of application (40%, 42.6% & 45% respectively) of the theoretical concept of data collection and analysis through computer skills. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (24.2%, 19.1% & 16.5% respectively) did not identified the successful application of the theoretical concept.

The overall negative responses, including the neither good nor poor category, of student teachers, teacher educators and observation records (75.8%, 80.9% & 83.5%

respectively) identified a critical gap (75%-100%) of application of the theoretical concept.

According to the Tukey's HSD, there was no significant difference among all the mean scores of the responses of student teachers, teacher educators and observation records (2.48, 2.39 & 2.31 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (2.48, 2.39 & 2.31 respectively) identified the successful application of the theoretical concept at poor level. All the student teachers, teacher educators and observation records identified a critical gap (75%-100%) between the theoretical concept and professional practice of student teachers.

Table 4.62. Application and Gaps Regarding the Concept of Developing Content Management System on Computers

Data Sources		Developing Content Management System on Computers						Total
		Very Poor	Poor	Neither Good Nor Poor	Good	Excellent	Mean	
Student Teachers	Count	37	102	144	173	24	3.09	480
	% within Source	7.7%	21.3%	30%	36%	5.0%		100%
Teacher Educators	Count	5	26	28	29	6	3.05	94
	% within Source	5.3%	27.7%	29.8%	30.9%	6.4%		100%
Observations	Count	9	64	49	68	10	3.03	200
	% within Source	4.5%	29.5%	24.5%	34%	5%		100%
Total	Count	51	192	221	270	40	3.07	774
	% within Source	6.6%	24.8%	28.6%	34.9%	5.2%		100%

Chi square statistics = 11.92, p-value = 0.155, df = 8

Tukey's HSD		
Source	Subset for alpha = 0.05	
	N	1
Observations	200	3.03
Teacher Educators	94	3.05
Student Teachers	480	3.09
Sig.		.837

Table 4.62 shows the chi-square statistics (11.92) with p-value greater than (.05) alpha level. The table shows that there was no significant difference among the responses of student teachers teacher educators and observation records.

The student teachers identified greater responses (36%) in good category. The teachers educators identified almost equal responses (29.8 & 30.9% respectively) in both good and neither good nor poor categories. Whereas, the observation records identified greater responses (29.5%) in poor category. The positive responses, for "Excellent and Good" categories, of student teachers, teacher educators and observation records (41% & 37.3% & 39% respectively) did not identified the successful level of application of the theoretical concept of developing content management system.

The overall negative responses, including the neither good nor poor category, of student teachers, teacher educators and observation records (59%, 62.8% & 58.5%) identified a significant gap (50%-75%) of application of the theoretical concept.

According to the Tukey's HSD, there was no significant difference among all the mean scores of the responses of student teachers, teacher educators and observation records (3.09, 3.05 & 3.03 respectively).

It was concluded that all the mean scores of student teachers, teacher educators and observation records (3.09, 3.05 & 3.03 respectively) identified the neither good nor poor level of application of the theoretical concept. All the student teachers, teacher educators and observation records identified a significant gap (50%-75%) between the theoretical concept and professional practice of student teachers.

Table 4.63. Summary of Composite Means for Learning Materials and Technology Integration

Sr. No	Concepts	Mean
1.	Charts and pictures	3.83
2.	Writing board (blackboard/white board)	3.77
3.	Presentation of models	3.91
4.	Art & craft skills	3.92
5.	Textbooks, workbooks & teachers' manuals	3.80
6.	Simulations & spread sheets	2.89
7.	Online and offline tutorials	2.08
8.	Multimedia use for presentations	2.70
9.	Data collection and analysis techniques	2.48
10.	Content management system on computers	3.07

Average Mean = 3.24

Table 4.64. Linkage of the Content of B.Ed Program with Professional Practice at School

Data Source		Content of B.Ed Effectiveness					Mean	Total
		D'nt Know	Not at All	Not Very Confident	Fairly Confident	Very Confident		
Student Teachers	Count	3	32	97	172	176	3.01	480
	% within Source	6%	6.7%	20.2%	35.8%	36.7%		100.0%
Teacher Educators	Count	0	4	15	41	34	3.11	94
	% within Source	0%	4.3%	16.0%	43.6%	36.2%		100.0%
Total	Count	3	36	112	213	210	3.03	574
	% within Source	5%	6.3%	19.5%	37.1%	36.6%		100.0%

Chi-square statistics = 3.333, p-value = .504, df = 4

Table 4.64 shows the cross tabulation among the responses of student teachers and teacher educators. Chi-square statistics with p-value greater than .05 alpha level revealed that there was no significant difference between the perceptions of student teachers and teacher educators.

Table shows that 35.8% of student teachers were fairly confident about the linkage of course content with professional practice for their preparedness. Whereas, 36.7% of student teachers were very confident about this linkage. 43.6% of teacher educators were also fairly confident about the linkage of course content with the professional practice. 36.2% of teacher educators were very confident about the linkage of course content with the professional practice.

It was concluded that the student teachers and teacher educators with mean scores (3.1 & 3.11 respectively out of total mean 4.00) that the course content of B.Ed had a positive linkage with the professional practice to prepare the student teachers as professionals.

Table 4.65. Balance between the Theoretical Component and Practical Component of Teacher Education Program

Data Source		Balance between Theoretical Knowledge & Professional Practice			Mean	Total
		D' nt Know	About Right	Too heavily weighted in favor of theoretical component		
Student Teachers	Count	20	165	295	1.57	480
	% within Source	4.2%	34.4%	61.2%		100.0%
Teacher Educators	Count	3	29	62	1.62	94
	% within Source	3.2%	30.9%	66%		100.0%
Total	Count	23	194	357	1.58	574
	% within Source	4%	33.8%	62.2%		100.0%

Chi-square statistics = .238, p-value = .88, df = 4

Table 4.65 shows that there was no significant difference between the perceptions of student teachers and teacher educators about the balance between theoretical component and practical component of teacher education program.

The table shows that the student teachers and teacher educators perceived about the teacher education program too heavily weighted towards the theoretical component. (61.2%) student teachers and (66%) teacher educators perceived the teacher education program as too heavily weighted in favor of theoretical component. However, there was also a considerable responses of student teachers and teacher educators (34.4% & 30.9%) that perceived the balance between theoretical and practical components of teacher education program as about right.

4.2.2. Open Ended Questions

Two open ended questions were included in the questionnaires of student teachers and teacher educators. The first question was to investigate the problems and challenges faced by the student teachers during their teaching practice to integrate theoretical knowledge, competencies and skills into their professional practice. The second question was related to the perceptions of student teachers and teacher educators about the strategies to fill the gaps between theoretical knowledge, competencies and skills, obtained through the course content in the professional practice of student teachers.

Both the respondents (student teachers and teacher educators) pointed out nearly same issues, problems and strategies. The student teachers as well as the teacher educators pointed out the problems and challenges related to the practice schools and teacher education institutions. The analysis of data has been presented separately.

4.2.2.1. Problems in teaching practice

Student teachers and teacher educators were asked in open ended questions respectively to "Identify some problems and factors which made hurdles to apply the theoretical knowledge, competencies and skills, the student teachers obtained through the course content of B.Ed, in their teaching practice." They identified the following problems and factors in general;

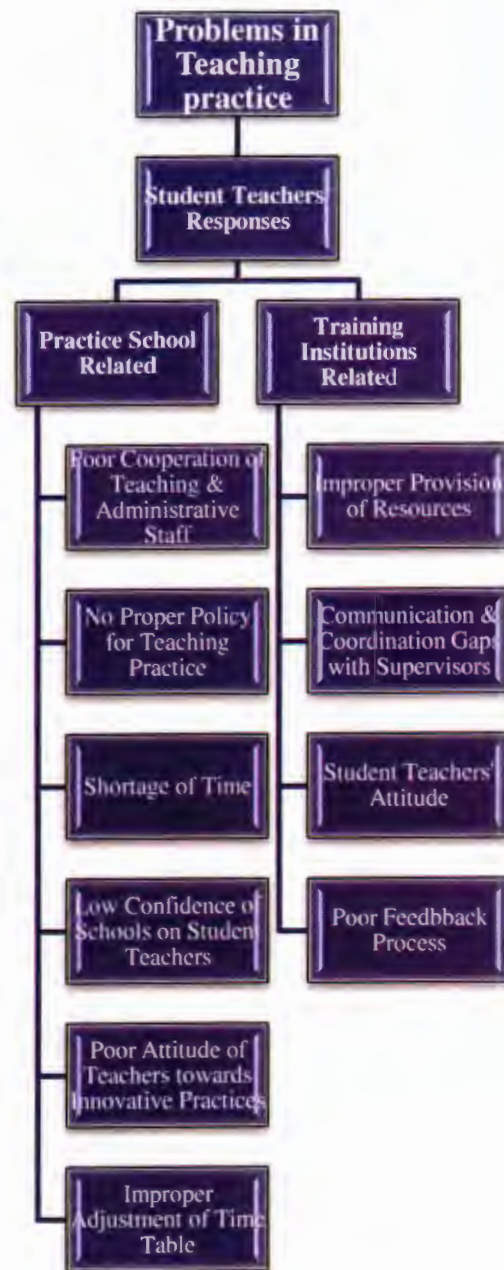


Figure 4.1. Problems in teaching practice (Student Teachers' Responses)

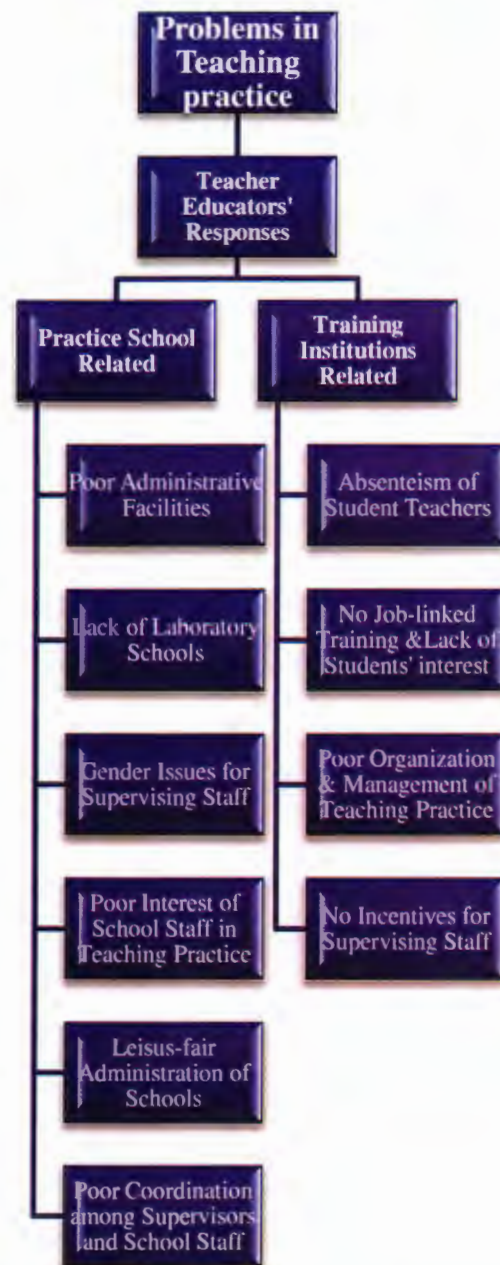


Figure 4.2. Problems in teaching practice (Teacher Educators' Responses)

4.2.2.2. Strategies for bridging the gaps

The second question in open ended form asked by the researcher was "What strategies are necessary to fill the gaps between theoretical knowledge and professional practice (teaching practice) in teacher education program?" The findings of the

perceptions of student teachers as well as of the teacher educators have been given as under:

(a). *Student teachers' perceptions*

Student teachers perceived the practical component as a new and an important experience to become the real world practitioners at schools. However, they identified the gaps regarding the application of theoretical knowledge, competencies and skills in different dimensions of teaching practice. The following themes about the strategies to fill these gaps emerged through the open ended question;



Figure 4.3. Strategies for bridging gaps (Student Teachers' Responses)

1. *Expansion in duration for practical component (teaching practice):* Student teachers found it important to make decision about the expansion in the period for teaching practice from one month to two months within each semester.
2. *Strengthening the support for teaching practice:* Student teachers perceived it better to strengthen teaching practice with full support of school and teacher education institution through close collaboration and coordination.

3. *Improvement in the assessment procedure:* Student teachers' performance in teaching practice can be strengthened through giving more weightage with numbers from one hundred to two hundreds in the university examination.
4. *Laboratory school concept:* The concept of laboratory school should be integrated into the teacher education program in the form of schools with special status of facilities necessary for teaching practice of student teachers.
5. *Provision of audio-visual aids and advanced learning technologies:* Student teachers perceived it necessary to provide all types of audio-visual aids as well as the multimedia projector and computers for introducing innovative concepts.

(b). *Teacher educators' perceptions*

In response to the open ended question "What strategies are necessary to fill the gaps between theoretical knowledge and professional practice of student teachers at schools? teacher educators gave different responses. Different themes through these responses developed as under the following;



Figure 4.4. Strategies for bridging gaps (Teacher Educators' Responses)

1. *Empowering the student teachers:* Teacher educators perceived it necessary to empower the student teachers during their teaching practice with full confidence. It should be through the teacher education institution as well as through the school administration to make decisions about innovative practices in the classroom.
2. *Delegation of powers to the TEIs for training and mentoring of school teachers:* Teacher educators suggested that the in-service training of teachers and continuous system of mentoring of school teachers must be organized through the coordination of teacher education institutions. They thought it compulsory to strengthen the role of teacher education institutions through close collaboration with the department of education.
3. *Laboratory school concept development:* Teacher educators perceived it hard to close the gaps between theoretical knowledge and professional practice of student teachers through the traditional concept of practicum experience. They identified different problems for continuous supervision and lack of authority to make things better in the context of student teachers' anxiety. Therefore, they perceived it essential to establish laboratory schools adjacent to the teacher education institutions as well as the affiliation of specific schools for the purpose of teaching practice.
4. *Eradication of irrelevant concepts in the course content of B.Ed:* Teacher educators perceived the B.Ed program too heavily weighted in favour of theoretical component. They demanded to make necessary changes in the curriculum of B.Ed through integrating the microteaching concept of elementary subjects at campus in the supervision of teacher educators. They specifically

pointed out the need for introducing practical concepts of computer skills relevant to the needs of classroom applications.

5. *Developing job linked pre-service teachers' training programs:* To overcome the lack of enthusiasm and motivation level of student teachers, the teacher educators perceived it better to make decisions about job-linked training of the trainee teachers. They marked about the fake degree programs with poor quality as well as the concept of commercialization in professional education through private sector.
6. *Integrating advanced learning technologies:* Teacher educators perceived the problem of implementation gap through the poor environment of school plant. They suggested to abandon the role of administrators as authoritative and coercive rather than their role as a professional guide.
7. *Full importance to the teaching practice:* The teacher educators suggested for the incentives and remuneration to the supervising teachers as well as for the mentor teachers in teaching practice session. A licensing program was suggested to be introduced for school teachers to achieve the successful cooperation and mentoring of student teachers during their professional practice period.

4.2.3. Focus Group Discussion & Interviews

A focus group discussion was conducted with student teachers of B.Ed one year programme. The focus group discussion was about the coherence of theoretical knowledge (episteme) with their professional practice (techne).

Two groups were invited to participate in the focus group discussion voluntarily from two selected teacher education institutions. Each group was consisted of ten participants from student teachers. Focus group discussions were organized at the end of their teaching practice session. Questions were designed in the light of research questions of the study. Analysis of the data regarding the focus group discussions for different questions has been presented below.

It is important to mention that the present study was conducted in the context of the areas of six categories of theoretical knowledge. These categories were about the planning and organization of the lesson, instructional skills, management and organization of the classroom, evaluation techniques, teaching methods, learning materials and technology integration in the classroom instruction. Student teachers identified different levels of application of theoretical knowledge they received through the course content with respect to these categories.

The in-depth interviews were conducted to obtain the perceptions of teacher educators regarding the gaps between theoretical knowledge and professional practice of student teachers. The interviews were conducted with taking the consents of teacher educators from the selected institutions included in the sample of the study. There were sixteen teacher educators who participated in the interviews.

Analysis of the data regarding the focus group discussions and interviews has been presented below.

4.2.3.1. Application of theoretical knowledge in teaching practice

In response to the research question "How do student teachers succeed to put into practice the theoretical knowledge, received through the course content, in their professional practice?" the student teachers and teacher educators expressed the following views:

(a) Student teachers' responses

Before going to the teaching practice at schools, the student teachers had no experience of teaching except the presentation of their lessons during their short term at the teachers' training institution.

The student teachers are expected to prepare the lesson plans regarding the contents of subjects. They are also expected to prepare and organize the lesson materials. However, they identified strengths and weaknesses in applying the theoretical concepts.

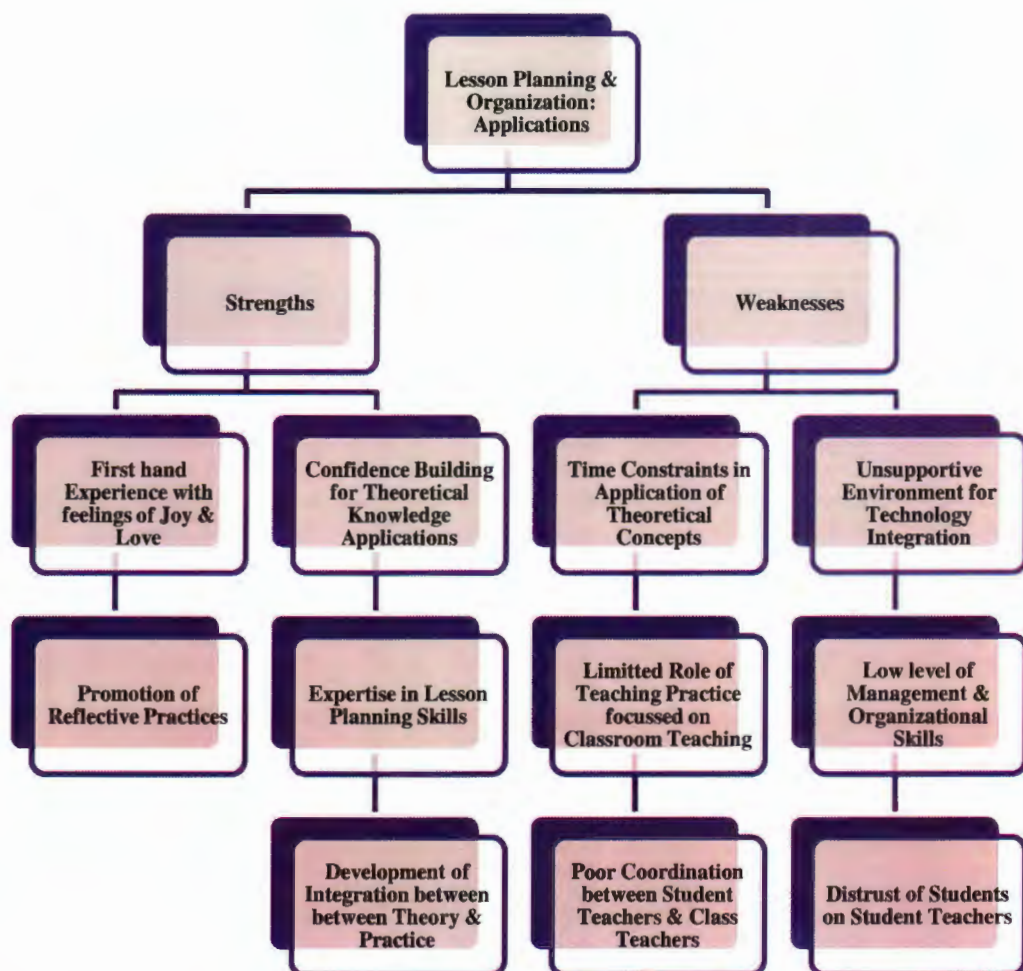


Figure 4.5. Application of theoretical concepts (Student Teachers' Perceptions)

A consensus among the student teachers was observed for the application of the lesson planning and organization. They also identified some problems to integrate theoretical and practical aspects. However, they said that they were able to present the lesson according to their lesson planning and they performed it with confidence.

Research studies identified the inadequate nature of planning the lesson by the student teachers as a challenge for their teaching practice (Ogonor & Badmus, 2006). Ralph and Noon (2004) identified the nature of lesson planning as an unobservable component of student teachers' classroom instruction and no actual interaction of face to

face lesson. They were identified to observe the high rating of lesson planning as compared to the unit planning due to greater emphasis of teacher education institutions on the lesson planning. Whereas, the practicing teachers valued the longer range unit planning rather than the fine details of each lesson (Sardo, 1982). Some students also commented on the contradictions between their lesson planning and the mentor teachers' expectations regarding the classroom instruction.

One major concern of student teachers about the lesson planning was the deficiency of using computer skills. A diversity of perceptions of the student teachers was observed in this context. Some students could not use computer skills due to the unsupportive environment of school and inaccessible nature of computer laboratory for student teachers in the school. There were also some schools with no concept of computer laboratory.

The full understanding of student teachers' pedagogic framework, as a promotion of teachers, enables them to meet the major aim of teacher education. This is only possible through the transformation or rebuilding of the perspectives of teachers with their own teaching experiences in a close and collaborative manner (Edith, Rainer & Wright, 1997). The teacher competencies regarding the classroom instruction have been identified in a draft competency framework developed in 1992-93 by the National Project on the Quality of Teaching and Learning (NPQTL) in Australia. The project identified the following five areas of competence in the context of classroom instruction:-

1. Professional knowledge development and its use
2. Communication, interaction and working with colleagues
3. Planning and management of teaching learning environment

4. To monitor and assess the students' progress and learning outcomes
5. Reflection, evaluation and planning for continuous improvement (NPQTL, 1994)

Some student teachers found it easy to enter the school and to apply the concepts they received through their course content. However, they expressed their concerns about workload and mistakes, they made in their classroom teaching.

The student teachers highlighted the workload and time management issues in their teaching practice. They viewed about the eventful nature of the teaching practice and the pressure of assessment by their supervising staff. They acknowledged their low performance in the evaluation techniques in the light of theoretical concepts.

(b) Teacher educators' responses

The teacher educators perceived the application of theoretical knowledge in the teaching practice of student teachers with different aspects of knowledge, skills and competencies. They acknowledged the opportunities provided to the student teachers through their first hands on experience of what they were taught at teacher education institution. When the teacher educators were asked about, to what extent the student teachers were succeeded to apply the concepts they received through their course content about teaching in the classroom contexts? They acknowledged the development of practical skills of student teachers, for which they were not familiar before their stay at campus or institution.

The teacher educators expressed the acquaintance of student teachers for unfamiliar problems of the classroom and their self reflection of solving these problems in accordance with the theoretical knowledge. They articulated about the professional

identity development process through their first hand experience on teaching as well as about different professional activities.

The teacher educators perceived the teaching practice as an incomplete and immature process for the preparation of future professional teachers. However, they perceived it as a beginning of the professional development of student teachers through which they experience a variety of practical actions. They acknowledged the positive impacts of teaching practice for building confidence, planning of lessons, dealing with unfamiliar problems of students' behaviour, instructional process and managing learning activities for students in the classroom and using questioning techniques for students' evaluation. They also explored the deficiencies of using different methods and techniques of teaching, technology use, management skills in classroom teaching, organization and management of co-curricular activities and poor level of evaluation process.

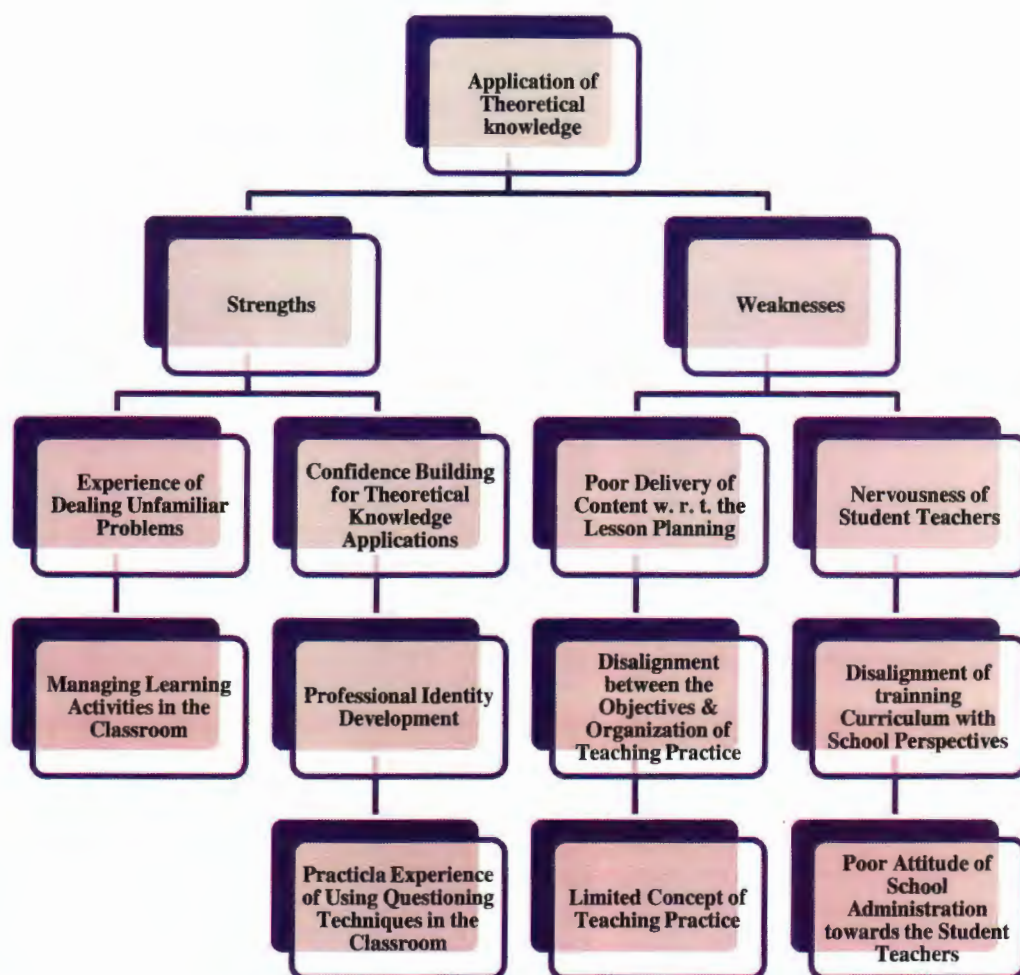


Figure 4.6. Application of theoretical concepts (teacher educators' perceptions)

4.2.3.2. Challenges and problems in teaching practice

The responses of student teachers and teacher educators regarding the question; "What challenges and problems are there in teacher education regarding the application of theoretical knowledge in professional practice?" have been given as under:

When student teachers were asked about different challenges and problems they faced during their teaching practice, they identified different challenges and problems. They indicated the problems in the context of school environment, their confidence level, coordination between school and campus, availability of learning materials, students'

attitude and assessment of student teachers during teaching practice. The process of transition from a recent school leaver to a pre-school teacher, completing placement experience at school, as a professional activity can be a challenge to many pre service teachers (Uusimaki, 2013). Parsons & Harding (2011) represented a list of actions necessary for student teachers during their teaching practice as a challenge to develop their professional identity which include:

1. To develop positive and collaborative relationship with school teachers and student teachers.
2. To engage themselves in self directed professional learning.
3. To get involve in school wide decision making process.
4. To seek help from their mentor teachers and colleagues.
5. To take the problems and challenges as an opportunity for growth.
6. To conduct action research for classroom problems.

The provision of sufficient opportunities for practice and to provide a structure for reflection of the experiences through the field experiences are considered necessary in the training programmes of pre-service educators (Pugach & Allen-Meares, 1985). A specialized academic content is usually focused in teacher training programmes rather than more importance to generic instructional methodologies. Teacher training programs are assumed to inform the specific effective teaching techniques as well as to allow the student teachers to apply these effective techniques in the classrooms (Hindman & Polsgrove, 1988).

Senom, Zakariya, & Ahmad Shah (2013) has conducted a study on the problems faced by the novice teachers during their first year of teaching with the analysis of

different studies. A study conducted in north eastern states of USA by Pifister (2006), identified the problems of beginning teachers at secondary level. The study indicated the problems of beginning teachers in six major categories of teaching, personal matters, outside testing, bureaucracy, colleagues and resources. The study indicated the category of teaching and personal matters as the most important among the six categories.

(a) *Student teachers' responses*

Students from GCETs and University of Education campuses expressed their views about the challenges and problems of teaching practice for integrating theoretical knowledge and professional practice. Sixteen students out of twenty concerned about the low level of coordination between school and campus. The international literature also suggests the development of the relationship between the school and university campus. The purpose of this relationship is to promote the learning outcomes of pre-service teachers as well as the development of the learning of mentor (Kruger, Davies, Eckersley, Newel & Cherednichenko, 2009).

Some of student teachers also expressed their views about the poor nature of administration and supervision in schools. They identified low level of students' quality in the classrooms, problems related to the adequate time table with poor concepts of learning about teaching. Some participants also expressed their concern over the mismanagement of the abilities of adequate teachers in the specific fields, the use of school resources and application of technology materials in the classrooms.

The contribution of teaching practice, for the development of student teachers as professionals, needs expertise in the teaching learning process. The most common aim of teacher education in Pakistan aims at enabling the teachers to work as independent

professionals. They have also to contribute for different affairs of school, starting from the development of school curricula to the formative and summative assessments of students (Niemi, 2011). Teaching practice demands for the development of an expert and the experts face problems in unique situations , consisting of an uncertainties, value conflicts and other tensions due to the complex situation (Schon, 1991).

There was found a common problem of student teachers to experience stress and disconnection with their sense of self during their teaching practice. However, when they begin to thrive academically and establish positive relationship with their teachers and colleagues at school then the process of the reconnection with their sense of self and confidence starts and becomes possible (Uusmaki, 2013).



Figure 4.7. Challenges & problems in teaching practice (Student Teachers' Perceptions)

(b) *Teacher educators' responses*

Teacher educators pointed out different aspects of teaching practice with different types of problems and challenges for student teachers. They differentiated among the problems lying in theoretical knowledge and teaching practice. They perceived that theoretical component dominated the training program. They interestingly professed that the teaching practice focussed on the activities related to the theoretical work. They highlighted the significant role of mentor teachers and supervisor teachers for the effectiveness of teaching practice.

The teacher educators categorically, specified the hurdles in the successful planning and organizing of the teaching practice. They recognized high pressure on the student teachers for their performance in the instructional activities rather than their overall professional development.

Khan (1993) also identified the liability of teacher education institutions for the provision of different opportunities to the student teachers. They have to experience activities as teaching practitioners as well as for the organization of games, recreational activities and socially reproductive work in school. The teacher educators confessed the inadequate preparation of the teaching practice with poor coordination of schools and teacher education institutions. They recognized the low level of information of cooperating teachers about the realistic functions of teaching practice and its aspects of evaluation of student teachers.

The teacher educators stressed that the problems associated with the on campus activities and teaching practice activities be addressed in a coherent way rather than independently. For this, they suggested the necessary concept of the laboratory school

associated with every training institution. They also acknowledged; (a) Poor infrastructure (b) Limited opportunities for teacher educators for their professional development (c) The profession of education as a very last choice of students and (d) The complex nature of process involved in the availability of resources. They identified advanced learning technologies and innovative teaching methods as the necessary requirements of training institutions. The similar nature of problems have been identified in the context of teacher education in Pakistan through different research studies and policy documents (Isani & Virk, 2005; Government of Pakistan, 2009; Azeem, 2011).

One teacher educator, from a GCET elaborated his ideas in the perspectives of the availability of resources necessary for the quality assurance of the training programs as under:

There are multidimensional problems coupled with the longitudinal process of paper work. We have to deal out of reach process to make things possible. There is a distortion at each step and the administrators are with closed hands behind them. We have to deal corrupt environment and a lack of commitment. There is a huge gap between the allocation of budget and the realistic provision of resources. This results in the gap between the objectives of teacher education and preparation of future successful professionals. The solution of such problems lies in the devolution of powers and to trust on teachers and school administrators.

Most of the participants from teacher educators expressed their views against the field experiences of student teachers with its limited sense of time and its organization at the end of teacher education program. They acknowledged the integrated concept of theoretical knowledge and professional practice introduced recently in the ADE (Associate Diploma in Education) and four years BS Education programs.

All the teacher educators expressed their concerns about the expansion of teacher education programs through the affiliation of private institutions with universities. They

raised questions about the issues regarding the quality assurance of teacher education.

They suggested for the teacher education linked with the concept of job linked programs or assurance of the placement of student teachers. All the teacher educators supported the internship concept in teacher education program with extended duration of teaching practice.

Teacher educators of GCETs also criticized the planning and organization of teaching practice with poor concept of the participation of school representatives. This problem results in the school teachers' attitude towards the poor importance of the adjustment of student teachers in time table.



Figure 4.8. Challenges & problems in teaching practice (Teacher Educators' Responses)

4.2.3.3. Gaps between theoretical knowledge and professional practice

The analysis of focus group discussion of student teachers and interviews of teacher educators regarding the question "What are the gaps between theoretical knowledge and professional practice in teacher education?" is given as under:

Student teachers admitted that a gap existed between theoretical knowledge and professional practice w. r. t. the relationship between practical training and educational theory. This view has also been supported by the researchers as theoretical knowledge and practice have been defined respectively by Carlgren (1999) "What teaching is supposed to be?" and "What teachers actually do" (p. 49). He further commented on theory to be perceived as the "Reality" whereas the practice as "An applied theory." However, he alleged this concept as problematic. He pointed out the theory and practice as a concept of seeing and doing which operates in research in teaching as well as in teaching itself. He gave his opinion that both of the theoretical and practical concepts were seen in research as well as in teaching. Both concepts included knowing with different ways of knowing and different kinds of knowing. Carr and Kemmis (1986) considered the theory practice gap as the communication gap and pointed out the use of different languages about this gap.

(a) *Student teachers' responses*

Student teachers were asked about the gaps between theoretical knowledge and their teaching practice at schools. They were asked, how did they find the similarities and differences between the teaching practice and theoretical concepts they received through the course content at campus? The students responded to the questions

according to their experiences at schools. They confessed that the teaching practice was a new experience for them and it seemed totally different of their pre-established concepts. To integrate the theoretical concepts with real world situation was not less than a challenge for them. They acknowledged that they came with full passion to apply the concepts, they received regarding the different areas of theoretical aspects i.e. lesson planning, instructional process, evaluation techniques, management and organization of the classroom, application of different teaching methods according to the lesson content and use of advanced technologies and audio visual aids in the classroom. However, they were bound to follow the routines of the school. The students and teachers were not ready to cooperate in applying the theoretical concepts which they encountered as something different to the course objectives.

Studies confirm the importance of the link between theoretical knowledge and professional practice as student teachers are required to reflect on their practices on the basis of theoretical knowledge. They are expected to examine their theoretical knowledge in accordance with their practice (Tanjala, Walimaa & Sarja, 2003). Different forms of work based learning have a capability to provide a starting point for the development of professional expertise. This professional expertise is possible only through the coherence of theoretical knowledge, teaching in the realistic situation and self regulative knowledge.

The student teachers also informed about their odd position in the schools that lead to the problems of affiliation of students in the classrooms. They stated that the time provided for teaching practice was insufficient to relate the theoretical concepts with their teaching practice. Time table adjustment was a common problem experienced by the

student teachers during their teaching practice. Studies have also identified the lack of student teachers' involvement in the regular time table (Azeem, 2011).

The student teachers also gave their comments about the gaps lying between the theoretical knowledge and professional practice at schools due to overall environment of schools, teachers' behaviour and commitment of teachers with the teaching profession. They considered it difficult to change the attitude of school teachers towards the application of innovative concepts through B.Ed training programme. They identified clearly the "washing out" effect of training programme on school teachers. However, they also acknowledged the role of teachers in the integration of theoretical knowledge and professional practice.

Some student teachers also identified the differences of theoretical knowledge and professional practice among different subjects. However, some of them also recognized the support they received through the theoretical aspect of training programme. They expressed their views about the usefulness of the concepts regarding the lesson planning, presentation of subject matter and communication skills in the instructional process, evaluation techniques and different methods of teaching as well as the use of advanced computer skills and learning materials. They revealed that several concepts were applied during the teaching practice which developed their confidence as a real world practitioner. Grainger and Taylor (2004) identified the infinite number of strategies in the context of problem solving developed through the consideration of teaching practice as a time of creative experimentation and risk taking. Coll and Zegward (2006) also recognized the willingness to learn through teaching practice as a single most important function for professional development of student teachers.



Figure 4.9. Gaps between theoretical knowledge & professional practice (Student Teachers' Responses)

(b) Teacher educators' perceptions

When teacher educators were asked about the similarities and differences in theoretical knowledge and professional practice in teacher education program, they acknowledged the importance of the problem and identified the areas of similarities and differences. They considered it the most important problem to align the teacher education program with its objectives. They made it clear that the valuable objective of the program is to prepare the future teachers with strong knowledge base, skills and competencies. This objective is essential to achieve the goals of education for students

and to prove themselves as successful professionals. They also added the importance of teaching practice in teacher education program but also expressed their concern about its poor quality in the preparation of future teachers.

The interviewee saw it necessary to expand duration of teaching practice to make it more valuable and suitable for developing skills in student teachers. They focussed about the continuous concept of the integration of theoretical knowledge and professional practice through the availability of laboratory schools as a necessary concept. They identified that the gaps between theoretical knowledge and professional practice begin with the concept of the separation of the programme in to two components of theoretical and practical. They discussed about the integration of theoretical and practical components through the easy access of student teachers to the classrooms. Different themes emerged through the analysis of data have been represented in the figure;

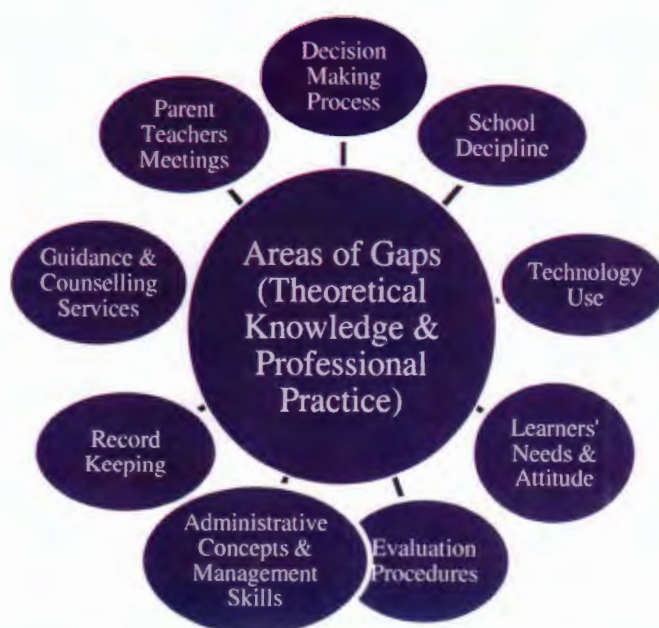


Figure 4.10. Gaps between theoretical knowledge and professional practice (Teacher Educators' Responses)

The teacher educators identified the teaching practice with poor concept of the activities of student teachers. The activities are centred on the classroom teaching and preparation of lesson plans for instruction. They identified the gaps lying in the comprehensive concept of the preparation of student teachers as professionals.

4.2.3.4. Strategies to fill the gaps

The analysis of focus group discussion of student teachers and interviews of teacher educators regarding the question "What are the strategies to fill the gaps between theoretical knowledge and professional practice in teacher education?" are given as under;

The last one research question for focus group discussion and interview was about to develop strategies to fill the gaps between theoretical knowledge and professional practice in teacher education. Different models of teacher education have been followed to make the concept of teachers' training more effective and useful for the development of advanced and well organized system of education. The process of development takes place with a concept of addition of new things and ways in the existing situation as stated by Mclyntyre and Hagger cited in Bansal (2007) "The concept of development implies that whatever is added, whatever is new, will be integrated with what is there already, and will indeed grow from what is there."

The student teachers can't be left alone regarding their training like seals, a major problem in their professional development (Holmes cited in Bansal, 2007). The change process requires new ideas and strategies to be adopted. The implementation of this change process in teacher education programs is necessary to make it more valuable and

adjacent to the new situation. The present study was an effort to develop strategies for bridging gaps between theoretical knowledge and professional practice through the perceptions of student teachers and teacher educators.

Student teachers and teacher educators were asked "What strategies are necessary to fill the gaps in the sense of necessary conditions at teacher education institutions and practice schools as well as the necessary changes required?" Different themes emerged through their perceptions have been elaborated according to the following major themes.

1. Organizational strategies
2. Instructional strategies
3. Support strategies
4. Technology integration in the classroom instruction
5. Supervision and assessment of student teachers

a) *Organizational strategies*

Student teachers made clear reservations about the poor level of organization of the teaching practice with its meager importance by the senior school teachers as well as by the school administrators. They apparently discussed about it a clear result of poor level of coordination among schools and teacher education institutions. They also identified the situation as a result of poor concept of incentives associated with school teachers and administrators. They recognized the mismanagement of school teachers and principals for the organization of teaching practice for its objectives, timings, capital and human resources, role of teachers and administrators. A significant role of the combination of transformational leadership to foster teacher's learning and to improve the

practices of teaching have been observed in the research literature (Thoonen, , Peter, Slegers, Frans, Oort, Thea, Peetsmal, & Femke, 2011).

The literature regarding the improvement of the situation of teacher education programs has also suggested the close cooperation between the school and training institute. It is possible through harmonizing the school based mentors and institution based teacher educators (Bansal, 2007). Bansal (2007) further suggested that the realistic approach of teacher education requires specific competencies from both teacher educators and cooperating teachers. Korthagen and Vasolas (2005) conceptualized two modes of integration in the context of realistic approach of teacher education, the integration of theory and practice and the integration of several disciplines.

Teacher educators also identified the poor level of cooperation and coordination among school teachers and teacher educators. They considered it important to make the planned organization of practical component of teacher education program. They recognized the efforts made by the teacher education institutions to earn the cooperation of school teachers. However, they acknowledged the poor passion of school teachers towards the pre-organized workshops for teaching practice at training institutions.

The student teachers and teacher educators confessed about the organizational strategies of teaching practice with different aspects. The summary of different aspects of organizational strategies, through focus group discussion and interviews, has been given with different points in the figure;

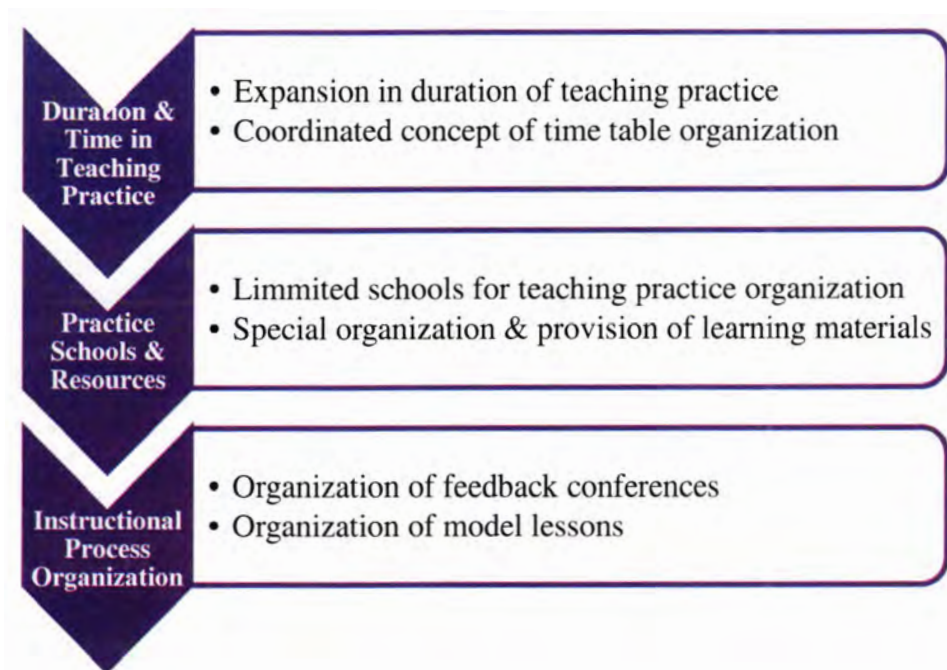


Figure 4.11. Organizational strategies to fill the gaps between theoretical knowledge & professional practice

b) Instructional strategies

The first and foremost job of a teacher is to ensure the learning of the pupils. The instructional process organized by the student teachers can be conceptualized as a key component of their professional development process (Green & Leask, 2009). Student teachers have to play a role of learning developer as well as to transfer the subject matter knowledge with understanding and comprehension. For the successful completion of teaching experiences, it is therefore, necessary to develop constructivist approach towards the learning activities of student teachers.

Student teachers and teacher educators gave important arguments about the instructional activities as a major portion of the teaching practice. The student teachers and teacher educators stressed the tasks and roles to be experienced by the student teachers while teaching in the classroom. The teaching practice is centered on the

teaching and learning process of students in the classrooms. Whereas, a major shift has been observed in the teaching practice with the concept of student teachers as learners in the classroom instruction (Groundwater-Smith, Mitchell & Mockler, 2001).

Student teachers acknowledged the complex nature of their learning as a teacher. They demanded for full opportunities to be provided according to their personal constructs and beliefs. They well thought out the school environment as an obstacle for their actions.

Student teachers also expressed their views about their focus on classroom presentations according to the lesson planning. Whereas the practical nature of classroom instruction involved different tasks within the given period of time.

The role of a teacher in the classroom can be determined through two types of responsibilities in both the academic and pastoral development of his/her pupils (Green & Leask, 2009). Therefore, the student teachers' instructional activities need to cover all those aspects related to both types of responsibilities, academic and pastoral.

Teacher educators also accredited the limited nature of activities of student teachers in the classroom rather than to bring about all the responsibilities as a professional teacher.

The work in the classroom includes the concept of hidden elements of the teachers' professional expertise. These are the planning a sequence of lessons to ensure learning progress, evaluation of previous lessons, planning and preparation for the lesson, established routines, using strategies to engage the pupils in classroom procedures with attractive personality of a teacher. It also includes the teachers' ability to capture and hold the interest of the class or to establish the authority (Green and Leask, 2009).

Therefore, for the successful completion of the teaching practice, sound strategies are required with the comprehensive concept of instructional process. For this purpose, a change process in the conventional nature of teaching practice is required with full passion of all the student teachers, teacher educators, school teachers and administrators. Coordinated efforts are necessary to make the event of teaching practice as a constructive approach in the teacher education program. Different themes emerged through the analysis of data have been represented in the figure below;

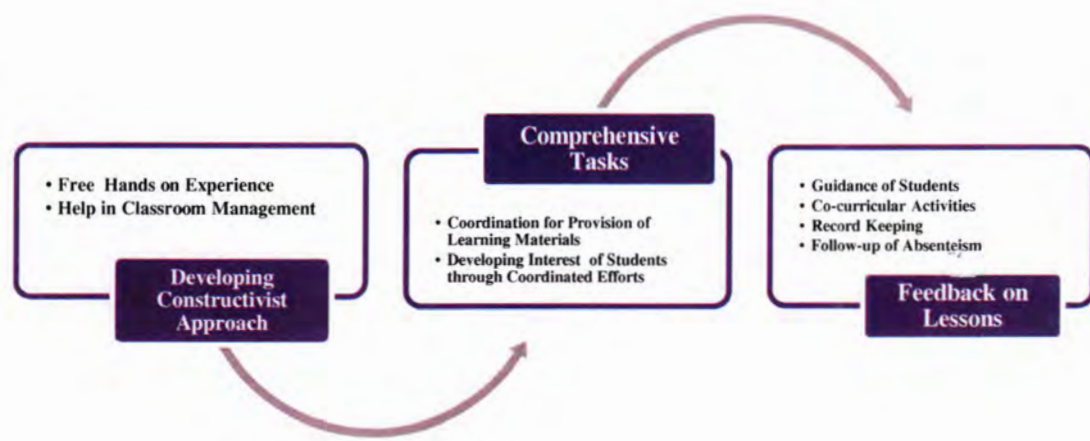


Figure 4.12. Instructional strategies to fill the gaps between theoretical knowledge & professional practice

c) Support strategies

To integrate the theoretical knowledge, skills and competencies with professional practice of student teachers, a coherence of activities needs to be established with a concept of necessary support. It enables the newly born teachers for their adjustment to the new situation at schools. Studies show the high acknowledgement of student teachers towards the practical component of teacher education for their professional development process. Hobson et al. (2006) marked the positive perceptions of student teachers towards the practical component of teacher education program.

Cheng, Cheng & Tang (2010) recommended that the quality of teacher education programs may be enhanced through helping the student teachers in identifying gaps between theory and practice. They added that it might be achieved through the support of teacher educators in linking theory and practice. Beck and Kosnik (2000) stated that;

Renewal of partner schools; like support and enhancement of the work of associate teachers, must be embraced as a priority by the university and school of education as a whole if it is to be attained to a significant degree (p. 223).

Starkey and Rawlins (2011) observed that the practicum experiences provided support and opportunity to the student teachers. The student teachers become able to make a link between their university study and their experiences and learning on practicum.

The student teachers and teacher educators were asked about "What strategies are necessary to fill the gaps in the context of support provided to the student teachers during teaching practice?" Two aspects emerged through their perceptions in the context of support strategies.

1. Initial support at beginning of the teaching practice
2. Continuous support during the teaching practice

1. Initial support

Student teachers alleged the beginning of teaching practice as a complex task for them as they were unaware of the school circumstances, principles, rules and routines. Therefore they expected to seek help and support by the senior teachers as well as by their teacher educators or supervisors. Group discussions, induction seminars,

2. Support during teaching practice

There are different tasks to be completed by the student teachers during their teaching practice session. They have to observe the lessons of experienced teachers, to plan and organize the lessons, to manage feedback conferences, discussion with peers and to complete portfolios of their activities (www.ue.edu.pk). All these tasks require full support and help by their teacher educators and mentor teachers. Starkey and Rawlins (2011) identified the usefulness of mentoring strategies extensively by the student teachers in the form of scheduled meetings, responsibility for planning the learning, verbal feedback on individual lessons, informal discussions about teaching practice, shared goal settings and overall mentoring process during the teaching practice.

A concept of training of the mentors has been highly valued for the improvement of support provided to the student teachers. Bansal (2007) explored the importance of the concept of training of mentors as "If they are to operate anything more than buddies or cheerleaders, they must be chosen carefully, receive appropriate training, and be given adequate time away from their own classroom responsibilities" (p. 92). The Student teachers professed the limited nature of the support by the school teachers with their poor theoretical concepts necessary for becoming successful practitioners.

Studies also confirm that the feedback given to the student teachers is usually along the behavior management of student teachers. Whereas, the student teachers value the feedback given in the context of students' learning (Starkey & Rawlins, 2011). The teacher educators and student teachers gave their comments about the importance of feedback given to the student teachers. They elaborated in the context of strengths and weaknesses of student teachers for different aspects of teaching in the classroom.

The following aspects were identified by the student teachers and teacher educators to improve support during the teaching practice of student teachers.

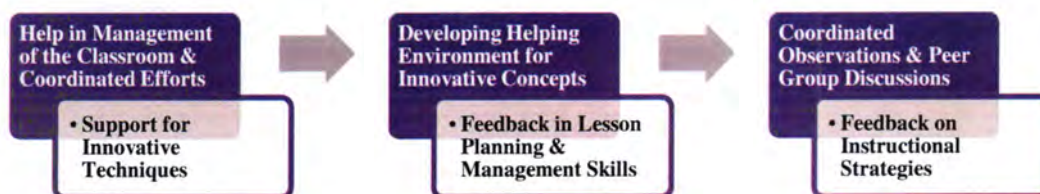


Figure 4.14. Support strategies during teaching practice to fill the gaps between theoretical knowledge & professional practice

d) Technology integration in classroom instruction

Student teachers are required to develop skills necessary for effective teaching as well as to act as professionals in the schools. These necessary skills make a repertoire of a successful teacher and include several dimensions of professional identity. Two principles are related to the technology based instructional strategy, one for demonstration of multiple approaches of pedagogy and second for learning through experiences rather than merely talking about anything (Bansal, 2007). Therefore it is necessary for student teachers to seek information about different roles of information technology in the classroom instruction.

Computer application in the classroom teaching has been introduced in the teacher education program at B.Ed level in teacher education institutions affiliated with University of Education, Lahore (www.ue.edu.pk). The student teachers as well as the teacher educators perceived importance of computers especially in the context of teacher education program with introducing new concepts for the production of newly qualified professionals. Furlong (1997) interpreted the concept of teacher education in the context

of "Constructing a new generation of teachers with different forms of knowledge, different skills and different professional values."

The integration of computer based learning in the classroom is one of the most important strategies to fill the gaps between theoretical knowledge and professional practice. Following are the emergent views of student teachers and teacher educators with different themes regarding the technology use in teacher education programs represented in the figure below;

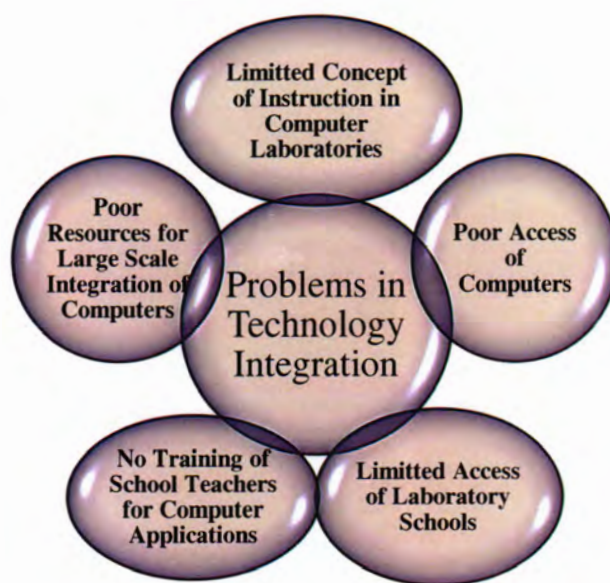


Figure 4.15. Problems for technology integration in the classroom instruction

O, Donnel, (1996) identified the teachers' failure in utilizing the computers in direct classroom instruction and observed that the teachers had no understanding of using computers in the teaching process. The research literature also reported that the teachers were not adequately trained to integrate technology in the classroom practices (Jerald & Orlofskey, 1999).

Teacher educators also marked the poor level of the use of computers in the classroom by the student teachers during their teaching practice. However, they perceived it necessary for student teachers to experience the ways of computer assisted learning in the classroom and they confessed the concept of laboratory school for this change process. The following necessary areas were identified by the student teachers and teacher educators for computer applications in the classroom;

1. Developing lesson plans
2. Developing pictures, models, maps and spread sheets
3. Using computers for co-curricular activities
4. Developing contents ad slides for instructional activities
5. Development of question items and tests
6. Developing interest through motion pictures and films

e) *Supervision and assessment of teaching practice*

The concept of supervision and assessment of student teachers, during their teaching practice session, is closely associated with their professional growth and development. In Pakistan, research studies explored the development of teaching skills effectively in the student teachers through the teaching practice with some dissatisfaction of student teachers about the styles of supervision and their impact (Qazi, Rawat & Thomas, 2012).

The concept of assessment in the teaching practice is related to the preparation of lesson plans, portfolios as well as to the student teachers' performance in the classroom instructional process. However, the deficiencies reported by the student teachers and teacher educators are at the implementation and organization level. The assessment of

student teachers not only help to improve the learning conditions for student teachers but also helps in making instructional decisions to improve the educational program of the student teachers. It requires to seek and gather data about an individual or group of the student teachers. Therefore, the teaching practice must be goals' oriented. After the completion of the teacher education program, the student teachers must be equipped with the competencies required for an effective teacher in the realistic conditions of school. Bansal (2007) identified the following competencies of student teachers to demonstrate after the completion of teacher education program;

1. Knowledge of methods for monitoring students' progress
2. Knowledge of basic terminology regarding students' assessment
3. Ability to use different types of assessment procedures
4. Familiarity with the appropriate application and interpretation of performance scores
5. To be familiar with differentiating procedures of students
6. To be familiar with the diverse situation of learners
7. Knowledge of assessment information to make instructional decisions
8. Reporting of students' results to parents, administrators and other professionals
9. Ability to encourage students for their self assessment

The research about the assessment and supervision of student teachers has also pointed out the general attitude of supervisors towards their classroom practices. During the teaching practice a number of lessons are observed by the supervisor (Stimpson, 2000). A sensitive support is necessary to evaluate and assess the student teachers through standards (Cohen, Manion & Morrison, 2004).

Student teachers and teacher educators identified different aspects of weaknesses and challenges of the assessment process. The teacher educators also acknowledged the improvement of the situation in the context of assessment and supervision of the student teachers during teaching practice. They however, pointed out the poor level of cooperation of school based mentors to complete the continuous nature of assessment. Bashir, Malik, Fatima & Bashir (2014) observed the poor level of cooperation of schools in the successful completion of teaching practice activities.

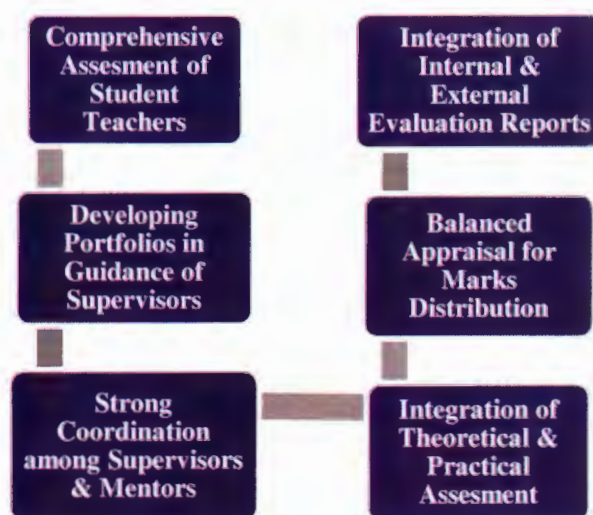


Figure 4.16. Supervision & assessment in teaching practice

4.3. Convergence of Quantitative and Qualitative Data

The research study was conducted with mixed method approach. The triangulation design with convergence model was used to collect the data which involves "Different but complementary data at the same time" (Morse, 1991, p. 122). In this model, the researcher collects and analyses quantitative and qualitative data separately on the same phenomenon and then the different results are converged (by comparing and contrasting the different results) during the interpretation (Creswell, 2007).

Table 4.66. Convergence of Data through triangulation of QUAN and QUAL

Sr. No.	Quantitative Data	Qualitative Data
1	<i>Planning and Organization of the Lesson</i> Good level of Application for planning and organization of the lesson was identified through the responses of student teachers, teacher educators and observation records of the researcher (Average mean = 3.50).	Most of the respondents from student teachers (through FGD) and teacher educators (through interviews) supported that the student teachers better planned and organized the lesson at good level during their professional practice.
2	<i>Instructional process Skills</i> Good level of Application for instructional skills was identified through the responses of student teachers, teacher educators and observation records of the researcher (Average mean = 3.49).	Most of the respondents from student teachers (through FGD) and teacher educators (through interviews) supported that the student teachers applied the instructional skills at good level during their professional practice.
3	<i>Evaluation Techniques</i> Good level of Application (however with lower mean score) for evaluation techniques was identified through the responses of student teachers, teacher educators and observation records of the researcher (Average mean = 3.33).	Most of the respondents from student teachers (through FGD) and teacher educators (through interviews) that the student teachers applied the evaluation techniques at satisfactory but not at good level during their professional practice.
4	<i>Classroom Management and Organization</i> Good level of Application (however, with some deficiencies in specific aspects) for classroom management was identified through the responses of student teachers, teacher educators and observation records of the researcher (Average mean = 3.40).	Most of the respondents from student teachers (through FGD) and teacher educators (through interviews) that the student teachers did not succeed to manage and organize the classroom at good level during their professional practice. They identified their poor skill in this regard.
4	<i>Teaching Methods</i> Overall, neither good nor poor level of application (good level for usual methods and poor level for innovative methods) for different teaching methods was identified through the responses of student teachers, teacher educators and observation records of the researcher (Average mean = 3.17).	Most of the respondents from student teachers (through FGD) and teacher educators (through interviews) identified that the student teachers did not apply the innovative methods of teaching in the classroom at good level. They identified their poor skill in this regard.
4	<i>Learning Materials and Technology Integration</i> Overall, neither good nor poor level of application (good level for usual and poor level for innovative technologies) for learning materials and technology integration was identified through the responses of student teachers, teacher educators and observation records of the researcher (Average mean = 3.24).	Most of the respondents from student teachers (through FGD) and teacher educators (through interviews) identified that the student teachers did not apply the innovative technologies in the classroom at good level. They identified their poor skill in this regard. However, they also acknowledged the better skill of student teachers in routine instructional materials.

Sr. No.	Quantitative Data	Qualitative Data
4	<p><i>Problems, challenges & gaps</i></p> <ol style="list-style-type: none"> 1. Significant difference among student teachers' perceptions & observation records, through Tukey's HSD, was found for application of theoretical concepts. 2. Considerable gaps regarding the application of lesson planning and organization were found through the responses of student teachers, teacher educators and observation records of the researcher 3. Considerable and significant gaps regarding the application of instructional process skills were identified through the responses of student teachers, teacher educators and observation records of the researcher. 4. Significant gaps regarding the application of evaluation techniques were identified through the responses of student teachers, teacher educators and observation records of the researcher. 5. Significant and critical gaps regarding the application of different teaching methods were identified through the responses of student teachers, teacher educators and observation records of the researcher. 6. Significant and critical gaps regarding the application of learning materials and technology integration were identified through the responses of student teachers, teacher educators and observation records of the researcher. 	<ol style="list-style-type: none"> 1. A problem in the lesson planning & organization of student teachers and class teachers' expectations 2. Inadequate resources for learning materials according to the lesson planning & organization 3. lack of A. V. aids and overcrowded classrooms 4. Human and capital resources with poor level of funding 5. Poor importance of teaching practice in time table with casual entries of student teachers 6. Greater focus of supervisors on teaching skills as compared to the course oriented activities of school teachers 7. Poor authority of student teachers with no free hands on experience 8. Poor cooperation of school teachers with student teachers for practicing innovative concepts of teaching 9. Time shortage for application of theoretical concepts with inadequate planning and instructional strategies 10. Poor environment of coordination for instructional process among teachers of schools 11. Inadequate organization of observation of classroom instruction 12. Inadequate use of assessment strategies 13. gender issues for supervising staff 14. lack of utilizing resources and learning materials, lack of laboratory schools 15. Lack of effective supervision of student teachers with low incentives for supervisors and mentors 16. Lack of coordination among schools' administration and TEIs 17. Poor interest of student teachers and their absenteeism in teaching practice with no concept of job-linked training programs were found through the perceptions of respondents from student teachers (FGD) and teacher educators (interviews).

Sr. No.	Quantitative Data	Qualitative Data
4	<i>Strategies to fill the gaps (themes emerged through QUAN and QUAL)</i>	
	1. A need to strengthen the practical skills of student teachers regarding the concepts of; <ul style="list-style-type: none"> • Lesson Planning and Organization • Instructional Skills • Evaluation Techniques • Classroom Management and Organization • Teaching Methods • Learning Materials and Technology Integration 2. Getting full attention of students 3. Delivery of subject matter knowledge 4. Developing interests and understanding in the pupils 5. Developing communication skills with a variety of activities	1. Coordination of schools & TEIs in decision making process about time table, feedback, model lessons & workshops 2. Strengthening the support for learning materials 3. Empowering of student teachers with A. V. aids & Information Communication Technologies 4. Continuous assessment with comprehensive nature 5. Student teachers' involvement in developing tests, administering the tests and appraising the tests 6. Innovative methods through computer applications for analyzing the test records 7. Development of laboratory schools with necessary facilities for student teachers 8. Initial support & Continuous support 9. Introductory workshops for principals and teachers, observation of classrooms, help in management of classes and continuous feedback 10. Developing curriculum for teacher education associated with professional needs of student teachers 11. Strengthening assessment procedure through giving more weightage to the practical component 12. Student teachers' involvement in developing tests, administering the tests and appraising the tests 13. Innovative methods through computer applications for analyzing the test records 14. Developing environment for innovative practices with innovative concepts of technology integration (Multi-media presentations, computer assisted instruction with individualized concepts of learning, promoting programmed instruction through computer applications

Table 4.66 represents the comparison of the results through QUAN and QUAL data and elaborate how QUAL data corroborate with the results of QUAN data. The QUAN data was interpreted for the application level of theoretical knowledge in professional practice of student teachers through five point Likert scale (excellent, good, neither good nor poor, poor and very poor). The QUAL data was interpreted for the application level of theoretical knowledge with the themes emerged in good, satisfactory and poor level.

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS & RECOMMENDATIONS

5.1. Summary

Teacher education has been considered as the most important factor in the development of teachers to fulfill the needs of national development process in Pakistan. The present study was about the long-standing problem of the gaps between theoretical knowledge, the student teachers receive at campus, and the professional practice in the real world situation of classroom. Teacher education programs have two parts, theoretical component and a practical through teaching practice at schools.

In the first chapter of the thesis, different aspects of the research were elaborated. In these aspects, the statement of the problem highlighted the research problem to be studied. The objectives of the study were given in descriptive form to set the targets to be achieved. Different research questions were established to investigate and achieve the objectives of the study. After that, the significance of the study was given to identify the beneficiaries of the research study. Methodology with population, sample, research instruments and definitions of key terms were also given in the first chapter. The study

was delimited to the B.Ed elementary one year program under the umbrella of the University of Education Lahore.

In the second chapter, literature was reviewed with different aspects of teacher education. The research, conducted in different dimensions at national and international level, was discussed in the chapter. A considerable body of literature has been found in the context of the gaps between theoretical knowledge and professional practice in teacher education. Different aspects of teacher education were discussed in the literature review. These aspects included teaching practice and its role, the challenges for teachers, the concept of effective teacher, technology integration as well as the gaps between theoretical knowledge and professional practice. Related studies within the context of Pakistan and abroad were also discussed at the end of the second chapter. The major findings of the studies revealed the gaps between theoretical knowledge and professional practice with different suggestions made by the researchers. The findings of the related studies were also about the need for improvements in the input, process and outcome procedures of the teacher education programs to make them more valuable and effective.

In chapter 3, a detailed picture of the procedures, adopted for the philosophical and methodological aspects, was given. A clear picture of the population, procedures and methods for sampling of the study as well as the different types of research instruments used in the study were given in detail. A mixed method with concurrent strategy was used to collect and analyze the data. All the student teachers enrolled in the B.Ed elementary one year program as well as all the teacher educators in GCETs and UE Lahore campuses comprised the population of the study. Multi-stage cluster random

sampling technique was used to collect the data. 522 student teachers and 100 teacher educators were selected as the sample of the study.

Fourth chapter was about the analysis of data presenting the results after the statistical methods used in the study. Data triangulation through cross tabulation with frequencies, percentage responses, mean scores, chi-square with contingency test and Tukey' s HSD were applied to analyze the data. Data gathered through the focus group discussion as well as through the interviews were also analyzed with the help of thematic analysis.

In the present chapter, summary of the research process, findings of the results and discussion of findings in the context of previous studies have been given. The conclusions and recommendations based on the findings as well as the scope of research for future studies have been given at the end of this chapter. References and different appendices have also been given after the completion of this chapter.

5.2. Findings

5.2.1. Findings of Data Triangulation (objectives 1-3)

5.2.1.1. Lesson Planning and organization

- P1; Selection of appropriate objectives
- P2; Selection of content according to the objectives
- P3; Organizing lesson presentation with logical sequence/order
- P4; Selection & organization of appropriate learning materials
- P5; Selection of activities well in advance the lesson

A) *Application Level and Gaps (objectives, 1 & 2)*

1. Overall, the student teachers identified the successful application regarding all the concepts of lesson planning and organization at good level with considerable gaps (MS; 3.25-4.25).

The teacher educators also identified the successful application regarding all the concepts at good level with considerable gaps (MS; 3.25-4.25).

The observation records identified the successful application regarding the two concepts (P₁ & P₅ respectively) at good level (MS; 3.25-4.25) with considerable gaps. However, for remaining three concepts (P₂, P₃ & P₄ respectively) the successful application was identified at moderate level with significant gaps (MS; 2.75-3.25).

B) *Differences of the Responses (Objective, 3)*

2. Overall, there was found a significant difference of the responses of student teachers with that of the observation records for three concepts (P₁, P₄ & P₅ respectively). However, no significant difference for two concepts (P₂ & P₃ respectively).

Overall, there was found no significant difference of the responses of student teachers with that of the teacher educators for first four concepts (P₁, P₂, P₃ & P₄ respectively). However, a significant difference for a last concept (P₅).

Overall, there was found no significant difference of the responses of the teacher educators with that of the observation records for all concepts (P₁, P₂, P₃, P₄ & P₅ respectively).

(Mean Scores(S); 3.73, 3.53, 3.53, 3.59 & 3.69), (Mean Scores(T); 3.46, 3.29, 3.26, 3.40 & 3.40), (Mean Scores(O); 3.42, 3.25, 3.23, 3.16 & 3.35)

5.2.1.2. Instructional competencies and skills

- I₁; Introduction of the topic through different techniques
- I₂; Using different assessment techniques for previous learning
- I₃; Appropriate utilization of learning materials
- I₄; Using four basic communication skills (Listening, Speaking, Reading & Writing) effectively in the classroom.
- I₅; Motivational techniques for active participation & learning
- I₆; Being focused on objectives throughout the instruction
- I₇; Presentation & delivery of content
- I₈; Providing opportunities to the students for active learning
- I₉; Questioning techniques to enhance learning
- I₁₀; Monitoring students' learning activities

A) Application Level and Gaps (objectives, 1 &2)

2. Overall, the student teachers identified the successful application regarding all the concepts of instructional process skills at good level with considerable gaps (MS; 3.25-4.25).

The teacher educators also identified the successful application regarding nine concepts of instructional process skills (I₁, I₂, I₄, I₅, I₆, I₇, I₈, I₉ & I₁₀ respectively) at good level with considerable gaps (MS; 3.25-4.25). However, they identified

successful application regarding only one concept (I₃) at moderate level with significant gap (MS; 2.75-3.25).

The observation records identified the successful application regarding the five concepts of instructional process skills (I₁, I₄, I₅, I₆ & I₁₀ respectively) at good level with considerable gaps (MS; 3.25-4.25). Whereas, moderate level of successful application with significant gaps (MS; 2.75-3.25) for other five concepts (I₂, I₃, I₇, I₈ & I₉ respectively).

B) Differences of the Responses (objective, 3)

4. Overall, there was a significant difference of the responses of student teachers with that of the observation records for all the concepts of instructional process skills.

Overall, there was no significant difference of the responses of student teachers with that of the teacher educators except for a significant difference of the concept (I₃).

Overall, there was no significant difference of the responses of the observation records with that of the teacher educators except for a significant difference of the concept (I₂).

Mean Scores(S); 3.76, 3.74, 3.57, 3.59, 3.60 3.67, 3.55, 3.55, 3.64, 3.59) Mean Scores(T); 3.53, 3.63, 3.23, 3.47, 3.40, 3.46, 3.39, 3.44, 3.30, 3.26), Mean Scores(O); 3.47, 2.94, 3.24, 3.29, 3.32, 3.40, 3.22, 3.19, 3.13, 3.27)

5.2.1.3. Evaluation techniques

- E₁; Developing tests for students' evaluation
- E₂; Observation of students during classroom activities
- E₃; Using different assessment methods
- E₄; Marking & grading of students' tests
- E₅; Maintaining students' progress records
- E₆; Informing students and parents with individual progress
- E₇; Diagnosing students' difficulties, weaknesses & strengths
- E₈; Feedback and reinforcement to students through tests
- E₉; Future instructional planning through progress records
- E₁₀; Evaluation of homework & assignments

A) *Application Level and Gaps (objectives, 1 & 2)*

5. Overall, the student teachers identified the successful application regarding all the concepts of evaluation techniques at good level with considerable gap (MS; 3.25-4.25) except for only two concepts. Moderate level of successful application with a considerable gap (MS; 2.75-3.25) and poor level (MS; 1.75-2.75) with a critical gap for the concepts (E₃ & E₉ respectively).

The teacher educators also identified the successful application regarding all the concepts of evaluation techniques at good level (MS; 3.25-4.25) with considerable gaps except for three concepts (E₃, E₅ & E₉ respectively). Regarding the concepts (E₃, E₅ & E₉ respectively), a moderate level of successful application with significant gaps (MS; 2.75-3.25) was identified.

The observation records identified the application regarding the five concepts of evaluation techniques (E₄, E₅, E₆, E₇ & E₈ respectively) at good level (MS; 3.25-4.25) with considerable gaps. A moderate level (MS; 2.75-3.25) of successful application with significant gaps was identified for three concepts (E₁, E₂ & E₁₀ respectively) and a poor level (MS; 1.75-2.75) of application with critical gaps for two concepts (E₃ & E₉ respectively).

B) Differences of the Responses (objective, 3)

6. Overall, there was a significant difference of the responses of student teachers with that of the observation records for all the concepts of evaluation techniques.

Overall, there was no significant difference of the responses of student teachers with that of the teacher educators for the concepts (E₁, E₂, E₅, E₆, E₈ & E₁₀ respectively). However, a significant for the concepts (E₃, E₄, E₇ & E₉ respectively).

Overall, there was a significant difference of the responses of the observation records with that of the teacher educators for the concepts (E₁, E₂, E₉ & E₁₀ respectively). However, no significant difference for the concepts (E₃, E₄, E₅, E₆ & E₈ respectively).

Mean Scores(S); 3.41, 3.46, 3.17, 3.69, 3.25, 3.50, 3.61 3.88, 2.70, 3.50), Mean Scores(O); 3.08, 3.08, 2.58, 3.36, 3.23, 3.39, 3.26, 3.53, 2.42, 3.16), Mean Scores(T); 3.43, 3.37, 2.85, 3.36, 3.12, 3.39, 3.34, 3.71, 3.00, 3.39)

5.2.1.4. Classroom management skills

- M₁: Maintenance of students' full attention
- M₂: Time & work management
- M₃: Management of classroom materials
- M₄: Setting jointly rules & their consequences
- M₅: Seating arrangements and grouping of students
- M₆: Maintaining sequence of activities
- M₇: Monitoring students' activities
- M₈: Responding quickly to the disruptive behaviour
- M₉: Managing to avoid off task behaviour
- M₁₀: Keeping & organization of students' records

A) Application Level and Gaps (objectives, 1 & 2)

7. Overall, the student teachers identified the successful application regarding all the concepts of classroom management skills at good level with considerable gaps

(MS; 3.25-4.25) except for only two concepts (M_2 & M_9 respectively). A moderate level of successful application (MS; 2.75-3.25) with a considerable gap and a poor level (MS; 1.75-2.75) with a critical gap (1.75-2.75) were identified for the concepts (M_2 & M_9 respectively).

The teacher educators identified the successful application regarding the concepts (M_3 , M_4 , M_5 , M_6 , M_7 , M_8) of classroom management skills at good level (MS; 3.25-4.25) with considerable gaps. Regarding the four concepts (M_1 , M_2 , M_9 & M_{10} respectively), a moderate level (MS; 2.75-3.25) of successful application with significant gaps was identified.

The observation records identified the application regarding the five concepts of classroom management skills (M_3 , M_4 , M_6 , & M_8 respectively) at good level (MS; 3.25-4.25) with considerable gaps. A moderate level (MS; 2.75-3.25) of successful application with significant gaps was identified for the concepts (M_1 , M_5 , M_7 , M_9 & M_{10} respectively). A poor level of application (MS; 1.75-2.75) with a critical gap was also identified for a concept (M_2).

B) Differences of the Responses (objective, 3)

8. Overall, there was a significant difference of the responses of student teachers with that of the observation records for all the concepts of classroom management skills except for two concepts (M_3 & M_8 respectively).

There was no significant difference of the responses of student teachers with that of the teacher educators for all the concepts except for two (M_6 & M_{10} respectively).

Overall, there was a significant difference of the responses of the observation records with that of the teacher educators for the concepts (M_1 , M_4 , & M_5 respectively). However, no significant difference of the responses of observation records with that of the teacher educators for all other concepts.

Mean Scores(S); 3.30, 3.12, 3.60, 3.79, 3.32, 3.93, 3.58, 3.53, 2.35, 3.45)

Mean Scores(O); 2.77, 2.68, 3.51, 3.46, 3.05, 3.62, 3.23, 3.44, 3.08, 2.23)

Mean Scores(T); 3.19, 2.85, 3.57, 3.67, 3.28, 3.62, 3.45, 3.46, 3.13, 3.24)

5.2.1.5. Teaching methods

- T1: Recitation Method
- T2: Lecture Method
- T3: Demonstration Method
- T4: Activity Method
- T5: Problem Solving Method
- T6: Micro Teaching
- T7: Programmed Instruction
- T8: Computer Assisted Instruction
- T9: Cooperative Learning
- T10: Role Play/Simulations

A) Application Level and Gaps (objectives, 1 &2)

9. Overall, the student teachers identified the successful application regarding all the concepts of teaching methods at good level with considerable gaps (MS; 3.25-4.25) except for three concepts (T_7 , T_8 & T_{10} respectively). A poor level with a critical gap (MS; 1.75-2.75) was identified for the concepts (T_7 , & T_{10} respectively). Whereas, a moderate level of successful application (MS; 2.75-3.25) with a considerable gap was identified for a concept (T_8).

The teacher educators also identified the successful application regarding all the concepts of teaching methods at good level (MS; 3.25-4.25) with considerable gaps except for three concepts (T_7 , T_8 & T_{10} respectively). Regarding the concept

(T₈), a moderate level of successful application (MS; 2.75-3.25) with a significant gap was identified. Whereas, a poor level of application (MS; 1.75-2.75) with a critical gap was identified for the concepts (T₇ & T₁₀).

The observation records identified the application regarding the five concepts of teaching methods (T₁, T₂, T₃, T₆, & T₉ respectively) at good level (MS; 3.25-4.25) with considerable gaps. Whereas, a moderate level of successful application (MS; 2.75-3.25) with significant gaps was identified for the concepts (T₄, T₅, T₇ & T₈ respectively). A poor level of application (MS; 1.75-2.75) with a critical gap was identified for a concept (T₁₀).

B) Differences of the Responses (objective, 3)

10. Overall, there was a significant difference of the responses of student teachers with that of the observation records for the concepts (T₃, T₄, T₅ & T₆ respectively). There was no significant difference for remaining six concepts (T₁, T₂, T₇, T₈, T₉ & T₁₀ respectively).

Overall, there was no significant difference of the responses of student teachers with that of the teacher educators for all the concepts of teaching methods.

Overall, there was a significant difference of the responses of the observation records with that of the teacher educators for the concepts (T₃, T₄, T₅ & T₇ respectively). However, there was no significant difference for all other concepts of teaching methods (T₁, T₂, T₆, T₈, T₉ & T₁₀ respectively).

(Mean Scores(S); 3.41, 3.96, 3.71, 3.49, 3.33, 3.57, 2.10, 3.03, 3.71, 2.08)

(Mean Scores(O); 3.30, 3.78, 3.28, 3.19, 3.00, 3.29, 3.05, 2.88, 3.83, 1.91)

(Mean Scores(T); 3.48, 3.80, 3.63, 3.40, 3.28, 3.47, 2.03, 2.86, 3.75, 2.04)

5.2.1.6. Learning materials and technology integration

- LT1: Delivery of content with the help of charts & pictures
- LT2: Using writing board(black board/white board)
- LT3: Presentation of models w. r. t. the content
- LT4: Art & craft skills (pencil sketching & geometrical shapes)
- LT5: Using text books, workbooks & teacher manuals
- LT6: Using simulation & computer games in the classroom
- LT7: Using online & offline tutorials
- LT8: Using multimedia in the classroom environment
- LT9: Data collection & data analysis through computer skills
- LT9: Developing content management system on computers

A) *Application Level and Gaps (objectives, 1 &2)*

11. Overall, the student teachers identified the successful application regarding the concepts (LT₁, LT₂ LT₃ LT₄ & LT₅ respectively) of learning materials and technology integration at good level (MS; 3.25-4.25) with considerable gaps. A poor level of application (MS; 1.75-2.75) with a critical gap was identified for the concepts (LT₆, LT₈ & LT₁₀ respectively). Whereas, a moderate level of successful application (2.75-3.25) with significant gaps was identified for the concepts (LT₇ & LT₉).

The teacher educators also identified the successful application regarding the concepts (LT₁, LT₂, LT₃, LT₄ & LT₅ respectively) of learning materials and technology integration at good level (3.25-4.25) with considerable gaps.

Regarding the concepts (LT₆ & LT₁₀), a moderate level of successful application (2.75-3.25) with significant gaps was identified. Whereas, a poor level of application (1.75-2.75) with critical gaps was identified regarding the concepts (LT₇, LT₈ & LT₉ respectively).

The observation records also identified the application regarding the first five concepts of learning materials and technology integration (LT₁, LT₂, LT₃, LT₄ &

LT₅ respectively) at good level (3.25-4.25) with considerable gaps. Whereas, a moderate level of successful application (2.75-3.25) with significant gaps was identified for the concepts (LT₆, LT₇ & LT₁₀ respectively). A poor level of application (1.75-2.75) with critical gaps was identified for the concepts (LT₈ & LT₉ respectively).

B) Differences of the Responses (objective, 3)

12. Overall, there was a significant difference of the responses of student teachers with that of the observation records for the concepts (LT₃, LT₄, LT₅ & LT₉ respectively). However, no significant difference for remaining six concepts (LT₁, LT₂, LT₆, LT₇, LT₈ & LT₁₀ respectively).

Overall, there was no significant difference of the responses of student teachers with that of the teacher educators for all the concepts of learning materials and technology integration.

Overall, there was a significant difference of the responses of observation records with that of the teacher educators for the concepts (LT₄ & LT₅ respectively).

However, no significant difference of the responses for all other concepts of learning materials and technology integration (LT₁, LT₂, LT₃, LT₆, LT₇, LT₈, LT₉ & LT₁₀ respectively).

(Mean Scores(S); 3.88, 3.88, 4.07, 4.04, 3.89, 2.93, 2.09, 2.76, 2.48, 3.09)

(Mean Scores(O); 3.70, 3.60, 3.59, 3.46, 3.56, 2.78, 3.07, 2.54, 2.31, 3.03)

(Mean Scores(T); 3.81, 3.62, 3.79, 3.85, 3.87, 2.81, 2.08, 2.73, 2.39, 3.05)

5.2.2. Open-ended Questions (objective 4)

1. *Problems in teaching practice*

Student teachers and teacher educators identified different problems in the successful completion of teaching practice at schools. Low level of cooperation by the school teachers and administrators was found a significant problem. Short duration for teaching practice was also found a considerable problem in the teaching practice.

There was also found a poor concept of proper adjustment of student teachers in the school time-table. The gender problem was a serious hurdle in the adequate supervision of teaching practice by the male staff members of teacher education institutions. The concept of laboratory schools was also limited for student teachers in teaching practice.

2. *Strategies to fill the gaps*

Student teachers and teacher educators both suggested the close co-ordination among teacher education institutions and schools as necessary for the successful completion of professional practice of student teachers. It was found that the integration of innovative concepts regarding the technology use in the classroom practices was of greater importance. The training concept of school teachers as well as the faculty development programs for teacher educators were also found as the important strategies to fill the gaps between theoretical knowledge and professional practice. The development of necessary concept of laboratory schools with teacher education institutions was perceived as an important strategy to overcome the problems in teaching practice.

5.2.3. Findings from Focused Group Discussion & Interviews (objectives 1-4)

The major findings of the focus group discussion of student teachers and interviews of teacher educators have been given as under:

1) Nature and gaps of application of the theoretical knowledge

The student teachers as well as the teacher educators both acknowledged the importance of teaching practice for the professional development of student teachers. However, the student teachers were of the view that, due to unsupportive conditions, they could not succeed effectively to apply the theoretical concepts in their teaching practice. They specifically identified the lack of integration of learning technologies in their teaching practices. The student teachers identified the problem of confidence due to their first hand on experience of teaching. They identified the gaps of application due to idealistic concepts provided in theoretical component and different demands of real world situation.

The student teachers and teacher educators both identified gaps of application of the theoretical knowledge. They identified different levels of application regarding different categories of theoretical knowledge provided through the theoretical component of teacher education in their practical component. Generally, a better level of application of the theoretical knowledge was identified with regards to the lesson planning and instructional skills. They identified also a good level of application regarding the concepts of evaluation techniques, learning materials as well as for teaching methods. However, they identified a low level of practical application of classroom management skills due to low level of confidence. They also described the poor passion of school

teachers in applying the innovative concepts of teaching methods, audio- visual aids and advanced learning technologies.

The student teachers as well as the teacher educators recognized the gaps between theoretical knowledge and professional practice in the fields of management skills, evaluation techniques, modern teaching methods and technology integration in the classroom teaching. Both the teacher educators and student teachers identified the needs of school practice far from the theoretical concepts provided to the student teachers at campus. They suggested for the integrated concept of theoretical knowledge and professional practice with continuous participation of student teachers in the classroom observations and teaching practices. For this purpose, they identified for the provision of necessary resources as well as the concept of laboratory schools adjacent to the teacher education institutions.

2) *Problems in teaching practice*

The student teachers and teacher educators identified different concepts developed through the theoretical component of teacher education program practicum to the workplace. They accredited that these concepts were not being applied in their full capacity in the teacher education programs. They indicated in this regard the concepts of micro-teaching, observation of classes, feedback and support of teaching practice as well as the poor access of student teachers to the decision making process of schools. They identified the low level of passion for change in schools, poor importance to the teaching practice of student teachers, neglected concept of training of the school mentors, no adequate planning in the field of placement of student teachers as well as poor coordination among schools and training institutions.

3) *Strategies to fill the gaps*

In developing strategies to bridge the gaps between theoretical knowledge and professional practice, improvement in the conditions of teachers' training with adequate facilities and incentives were identified as important strategies. The close co-ordination among schools, administrative departments and teacher education institutions for the organization of pre-service and in-service training of teachers were suggested as the strong recommendations. The necessary changes in the training infra-structure with a well-planned system of professional development of school teachers and teacher trainers were also recommended. The student teachers and teacher educators both recognized the expansion in the duration of teaching practice through integrated approach of practice schools. They also identified the need of necessary facilities with regards to the curriculum materials and advanced learning technologies in the schools.

5.3. Discussion

The pre-service teacher education programs render the provision of quality teachers to the profession of education. Teaching practice, as a professional and practical opportunity, gives a chance to the student teachers to experience their theoretical knowledge obtained through the on campus activities in the real world classroom settings at schools. The question about the trainees' application of theories learned in training program with problems of the classroom settings is common (Gorden & Brien, 2007).

Generally, there have been a difference and conflict of newly teachers' perceptions about the understanding of teachers developed through the training in faculties as well as their involvement in the real classroom settings (Flores, 2007).

Therefore, as a key element of formal teacher education programs, the teaching practice should have a capability to combine theory and practice in proper way (ETUCE, European Teacher Education Policy Paper, 2008).

A few studies represent the investigation of gap between theory and practice and ways to develop coherence between the two concepts in the research repository of Pakistan (Jumani, 2013). Myenes and Hatt (2012) identified the major shift of the focus of teacher education programs from teaching to the learning of students. They also emphasized the need for examining, to what extent the elements of this major shift is present in teacher education programs?

The present study was about to investigate the application of theoretical knowledge, obtained through the theoretical component of teacher education, in the classroom teaching. The study was designed to investigate the problem within the borders of teacher education program in Pakistan. A considerable body of research is available on the problems related to the effectiveness of teacher education programs and a coherence between the skills obtained through the teacher education program and skills required in the school practices (Rizvi, 2004, Jumani, 2007, Jumani, 2013, Akhtar, 2011, Gujjar et al., 2011).

However, the present study was different in its nature with mixed methods design as well as its comprehensive nature of finding out the gaps of application as well as developing strategies to fill these gaps. The perceptions of student teachers and teacher educators through questionnaires, FGD and interviews as well as the classroom observations of the researcher were managed to achieve the objectives of the study.

Different research questions were designed to investigate the nature of problem and its solution with sound evidences. These research questions were:

1. How do student teachers apply the theoretical knowledge in their professional practice?
 - i. How do student teachers succeed to put into practice the theoretical knowledge, received through the course content, in their professional practice?
 - ii. How do student teachers, teacher educators and observation records differ about the level of application of the theoretical knowledge in professional practice?
2. What are the gaps between theoretical knowledge and professional practice in teacher education program?
 - i. What is the level of gaps between theoretical knowledge and professional practice of student teachers in teacher education program?
 - ii. What challenges and problems are there in teacher education regarding the application of theoretical knowledge in professional practice?
3. What are the strategies to fill the gaps between theoretical knowledge and professional practice of student teachers in teacher education?
 - i. How do student teachers perceive to fill the gaps between theoretical knowledge and professional practice in teacher education?
 - ii. How do the teacher educators perceive to fill the gaps between theoretical knowledge and professional practice in teacher education?

Although the student teachers acknowledged the different areas of pedagogical skills in which they were provided theoretical knowledge. The six categories of pedagogical skills in the context of planning and organization of lesson, instructional

competencies and skills, evaluation techniques, classroom management skills, different methods of teaching and technology integration were the major areas of the study.

The application of theoretical concepts, at comparatively good level, was observed for the first four categories (lesson planning, instructional skills, evaluation techniques and management of the classroom). However, the study also found the significant differences between the student teachers and observation records of the researcher. The perceptions of teacher educators were found comparatively close to the observation records and generally at medium level between the student teachers and observation records.

In the context of last two categories of theoretical knowledge (teaching methods and learning materials and technology integration), the application level was found within the two extremes. These two extremes were of good level of application for traditional concept\ and poor level of application for innovative concepts. The study found the better level of application for the traditional methods of teaching as well as for traditional learning materials in the form of writing boards, charts, pictures and models. A poor level of application with significant and critical gaps was found for the innovative and modern concepts regarding the teaching methods and computer assisted instruction. A considerable body of research is available at national and international level with investigation of the teaching practices aligned with the same areas of pedagogical skills (Akhtar, 2011, Rizvi, 2004, Jumani, 2007).

Khan and Saeed (2009) identified the same findings with regards to greater mean scores in lesson planning and presentation. Whereas they identified lower level of application in the context of A. V. aids and teaching techniques and methods used in the

classroom practices. Akhtar (2011) also identified the low level of application of skills regarding the teaching methods through observational data. Sidiqqi (2004) identified that the teachers did not succeed to use a variety of evaluation techniques in the classroom. Ralph and Noon (2004) also indicated the need for improvements in the management skills of student teachers. Gujjar et al. (2011) also identified the low level of application in the use of audio-visual aids in the classroom practice.

The data was also collected through open-ended questions, focus group discussion of student teachers and interviews of teacher educators. The student teachers and teacher educators identified different problems in the application of theoretical concepts as well as regarding the strategies to fill the gaps of application.

The problems identified to integrate the theoretical knowledge into professional practice of student teachers were found in the areas of availability of proper resources, time duration of teaching practice, poor organization of teaching practice, gender issues for supervision of student teachers and non-availability of laboratory schools with teacher education institutions.

A considerable body of research has observed these issues and problems in the area of teacher education in Pakistan. Gujjar et al. (2011) identified the duration of teaching practice not compatible to the needs of theory practice integration as well as for the effectiveness of training program. Coll and Zegward (2006) agreed that if students were to develop enthusiasm and acculturated into the chosen profession then they were needed to spend more time in communities of practice such as schools. Allen and Peach (2007) identified the critical nature of supervision in teaching practice by the student teachers.

Subject matter knowledge and the professional knowledge are the two aspects of teachers' professional identity for developing individuals as professionals, researchers or reflective practitioners. The development of professional identity is possible through the teaching practice experiences with a sound body of professional knowledge (Schon, 1987; Elliot, 1991; Bromme, 1992). Ulvick and Smith (2011) discussed the concept of professional knowledge and professional practice coordinated with the Aristotle's concept of episteme, techne and phronesis. Teaching practice, however, needs for collaborative efforts of school personnel in the development of good school environment more beyond the classroom practice (Gofree, Oliveira, Serrazina, & Szndrei, 1999).

Shulman (1986) described the teacher education as an art, craft and a science. It is all about what to teach, how to teach and what methods are to be used for particular topics, particular kinds of students and for particular settings. All these knowledge and skills combine to form teacher expertise. Teacher education programs are the set of theoretical component and practical component in organizational settings. The concept of theoretical knowledge and professional practice goes side by side in teacher education and deals with the knowledge and skills necessary for actions in the real settings of teaching learning environment. Uljens (2002) described the concept of theory with three perspectives as, to create knowledge of the teaching process as a central task, to provide a base to the teachers for reflection on their actions and to play a role of theoretical framework for research on teaching.

Student teachers acknowledged the teaching practice as a firsthand experience of teaching but an initial practice with their poor confidence. Jumani (2007) observed that; "Teacher education should be the transformation or rebuilding of teachers' perspective

through a close and collaborative study of their own teaching experiences" (p. 35). The teacher educators also identified the teaching practice experience as an opportunity to apply the theoretical concepts in the real world situation of classroom. However, they also acknowledged the gaps lying in the field of professional activities and observed the teaching practice with low level of co-ordination among schools and teacher education institutions. They also recognized the environment of schools and nature of school teachers' training as unsupportive to help the student teachers in their classroom practices.

One important aspect of the study was about the nature of teacher education too heavily weighted towards its theoretical component. Chaudhary (1995) also identified the perceptions about theoretical nature of course content embedded with low level of practical nature. A poor nature of the reflection of emerging trends in pedagogical methods has been identified through a position paper represented by USAID in the context of teacher education in Pakistan (USAID, 2004). Akhtar (2011) also identified the nature of teacher education programs heavily loaded with theoretical aspect and identified the need to focus on the functional aspect.

The following themes were of major importance in the context of issues, problems in teaching practice as well as to fill the gaps between theoretical knowledge and professional practice ;

- Co-ordination among schools and teacher education institutions
- Training of school teachers through the teacher education institutions
- Job-oriented concept of teacher education program
- Expansion of time in the duration of teaching practice
- Improvement in the conditions of feedback and support for student teachers

- Opportunities for school teachers in their professional development
- Up-dated concept of teacher education curriculum with advanced learning technology integration
- Availability of resources for well-organized concept of teaching practice
- Assessment of student teachers with balanced concept of weightage to the theoretical component and practical component
- Rich environment of learning to teach through the concept of laboratory schools
- Participation and engagement of student teachers in decision making process
- Developing environment of learning to teach through interactions, trust, and collaborative experiences

Different studies recommended the strategies within line with the present study as well as the strategies to make the effective teacher education program. The partnership among the institutions conducting research and that with practice has been vowed as the global trend in teacher education (USAID, 2004). Gujjar et al. (2011) recommended the increase in the duration of teaching practice for effectiveness of training programs. Akhtar (2011) recommended the provision of resources in the context of the availability of adequate audio-visual aids in the classroom at schools.

Classroom environment has a pivotal role in the positive development of student teachers for learning to teach. Teaching practice experiences vary according to the classroom environment and supportive nature of the classroom and enhance the positive impact on student teachers' professional identity development. Gofree et al.(1999) pointed out the nature of classrooms as, with rich learning environment for both student

teachers and pupils, with little or nothing for interest to the student teachers or the classrooms with some things that can put them on wrong track.

Assessment of student teachers in their teaching practice play a vital role in the professional development of student teachers, school teachers as well as of teacher educators. A well-organized concept of the teaching practice is possible only through the coordination and collaboration of school, campus and students. Allen and Peach (2007) recommended the regular communication among these three stake holders for better improvement in the teaching practice to integrate the concept of theory and practice.

The student teachers viewed about the teaching practice as an important opportunity to experience concepts which they obtained through the theoretical component. However, for their effective professional development they also expressed the need to involve them in full range of professional and administrative experiences at schools. This theme was also identified by the international researchers in the field of teacher education like Schultz (2005); Darling-Hamond (1999); Thoonen, Slegers, Oort, Peetsma, & Geijssel (2011). They identified the learning nature of teaching practice with full range of experiences at schools rather than the traditional concept of teaching practice. Traditional concept of teacher education includes technical knowledge as a small part of teachers' knowledge without the concept of preparation of professional teachers. The studies attested the role of collaborative decision making for developing trust and ownership in the teachers. The participative decision making process also results in the positive effect through the development of motivation in teachers (Jongmans, Slegers, Biemans, & De Jong, 2004; Slegers, Bolhuis, & Geijssel, 2005).

5.4. Conclusions

The following conclusions were made through the findings of the study:

A) *Lesson planning and organization*

1. Overall, the student teachers, teacher educators and observation records identified the successful application of the theoretical concepts of lesson planning and organization at good level with considerable gaps. However, the observation records also identified moderate level of application with significant gaps for some concepts of theoretical knowledge. (Findings 5.2.1.1, A)
2. Overall, there was a significant difference between the perceptions of student teachers and observation records. However, The teacher educators perceived the level of application and gaps in between the student teachers and observation records (Findings 5.2.1.1, B).

B) *Instructional competencies and skills*

3. The student teachers and teacher educators identified the good level of application with considerable gaps of the theoretical concepts regarding the instructional competencies and skills. Whereas, the observation records identified moderate level of application with significant gaps for half of the concepts. The level of application identified by the teacher educators was in between the student teachers and observation records. (Findings 5.2.1.2, A)
4. There was a significant difference between the perceptions of student teachers and observation records. However, overall, the teacher educators had no significant difference with both of the student teachers and observation records through their perceptions at medium level. (Findings 5.2.1.2, B)

C) *Evaluation Techniques*

5. Overall, the student teachers and teacher educators perceived the good level of application with insignificant and considerable gaps regarding the concepts of evaluation techniques. However, the teacher educators also identified moderate as well as poor level of application with significant and critical gaps for some theoretical concepts. Whereas, the observation records revealed good level of successful application with considerable gaps for half of the concepts. Whereas, moderate and poor level of applications with significant and critical gaps for other half of the concepts of evaluation techniques were identified. The perceptions of teacher educators were in close with the observation records as compared to the student teachers. (Findings 5.2.1.3, A)
6. The student teachers were different in perceptions with the observation records for half of the concepts of evaluation techniques. However, the teacher educators perceived in close with the student teachers as compared to the observation records for the application of the theoretical concepts of evaluation techniques. (Findings 5.2.1.3, B)

D) *Classroom Management Skills*

7. The student teachers identified the good level of application with considerable gaps of the theoretical concepts of classroom management skills. However, a weakness in application with significant gaps was also identified by the student teachers for some concepts. The teacher educators identified good level of application with considerable gaps regarding most of the concepts of classroom management skills. However, they also identified weaknesses in application with

significant gaps of the few concepts. Overall, the observation records identified good level of application with considerable gaps regarding the few concepts of classroom management skills. However, moderate and poor level of application with significant and critical gaps were identified for several concepts of classroom management skills. (Findings 5.2.1.4, A)

8. It was concluded that the observation records did not validate the perceptions of student teachers. The Tukey's HSD also revealed the difference of mean scores of observation records with that of the student teachers. However, the teacher educators perceived close to the student teachers as compared to the observation records. (Findings 5.2.1.4, B)

E) Teaching Methods

9. The student teachers, teacher educators and observation records perceived a good level of application with considerable gaps regarding the concepts of traditional teaching methods. However, a poor and moderate level of application with critical and significant gaps were identified with regards to the innovative methods of teaching. (Findings 5.2.1.5, A)
10. It was concluded that there was a clear difference between the perceptions of student teachers and observation records for most of the concepts of teaching methods. The observation records had also a significant difference of responses with that of the teacher educators for some concepts of teaching methods. However, the teacher educators were close in perceptions with the student teachers as compared to the observation records. (Findings, 5.2.1.5, B)

F Learning Materials and Technology Integration

11. It was concluded that the student teachers, teacher educator and observation records perceived the good level of application with considerable gaps for the concepts of traditional learning materials in the form of charts, models, writing board, text books and teachers' manuals. However, there was identified a poor level of application with critical gaps of the concepts related to the computer assisted technology integration in the classroom through the perceptions of the student teachers, teacher educators and observation records. (Findings,5.2.1.6, A)
12. It was concluded that the student teachers, teacher educators and observation records were not different in most of the cases of audio-visual aids and computer technology integration. However, there was a significant difference of observation records with student teachers and teacher educators in some cases. (Findings,5.2.1.6, B)

G) Application, Gaps and Strategies to Fill the Gaps (Open Ended Questions, FGDs and Interviews: objectives, 1-4)

13. From open-ended questions, it was concluded that the student teachers and teacher educators regarded the concept of teaching practice in teacher education. The student teachers and teacher educators perceived the content of B.Ed capable of providing sufficient knowledge and skills for the future professional practice. There were also identified problems and issues for the application of theoretical concepts in teaching practice of student teachers.

14. It was concluded from the open-ended question that the student teachers and teacher educators perceived about the teacher education program too heavily weighted in favor of theoretical component rather than its practical component.
15. It was concluded, from the open-ended questions, focus group discussions of student teachers and interviews of teacher educators, that the professional practice of student teachers was an important component of teacher education program. However, they identified different problems and factors to be improved in the organization of teaching practice. The student teachers perceived the teacher education program with more emphasis on theoretical aspects with the integrated concepts of assessment.
16. The student teachers and teacher educators, both needed for the concept of continuous practice through the establishment of laboratory schools with the teacher education institutions. The teacher educators demanded for autonomy of financial resources with the integrated concept of pre-service and in-service training of school teachers under the umbrella of teacher education institutions.
17. Student teachers and teacher educators acknowledged the role of mentor teachers during the professional development of student teachers with the help of creative role by the school administrators. The student teachers and teacher educators, both identified the support given in the form of feedback and reinforcement to the student teachers by the supervisor teachers as well as by the mentor teachers. However they also recognized the need importance of advanced learning technologies integrated with the concept of micro-teaching methods.

18. Student teachers and teacher educators perceived about the strategies for bridging the gaps between the theoretical knowledge and professional practice of teacher education according to the following aspects:

- Co-ordination and collaboration among schools and teacher education institutions
- Availability of resources in the form of learning materials as well as well-equipped laboratories of computer
- Pre-service and in-service training through the teacher education institutions
- Job-linked training concept to promote the confidence of student teachers
- Faculty development programs for school teachers as well as for teacher educators
- Up-gradation of curriculum and infra-structure of teacher education programs.

5.6. Recommendations

- 1) The practical skills of student teachers regarding the teaching practice may be given more importance in the theoretical component of teacher education program. Student teachers may be provided technology integrated micro-teaching sessions during their theoretical component to improve their practical skills in the fields of communication, instruction, management, evaluation, teaching methods and audio-visual aids. Two to four sessions in a month may be organized for this purpose. Computer applications in different modes may be helpful to improve the practical skills of student teachers.
- 2) A comprehensive mode of teaching practice may be developed with full participation of student teachers in decision making process of school program.

For example, through the practical involvement of student teachers in staff meetings, management of school records, organization of co-curricular activities as well as in parent-teachers' meetings.

- 3) Proper adjustment of teaching practice in school time table may help to improve the confidence of student teachers for classroom instruction. Associated concept of a student teacher with a single school teacher in different subjects may be included in the school time table. The expanded duration of teaching practice, from four weeks to eight weeks, is also recommended to provide suitable time for the student teachers to experience theoretical concepts in the real world situation.
- 4) The field of evaluation techniques require more improvement in the teaching practice. The student teachers are required to be engaged in developing, conducting and evaluating the schools' tests. For this purpose, technology based evaluation techniques in the form of composing the tests as well as of grading the students through statistical techniques of percentile ranks and correlations with computer applications may be introduced.
- 5) Furthermore, the following strategies may be adapted to bridge the gaps between theoretical knowledge and professional practice in teacher education
 - I. Peer group teaching may be organized during the teaching practice of student teachers to experience effective techniques of classroom management skills. The concept of model lessons of experienced teachers from schools and the training institutions may be organized during the teaching practice.
 - II. Foster practical skills in student teachers to use the innovative methods of teaching in the classroom was also recommended . For this purpose, there is a

need to improve conditions and environment of schools to integrate the new concepts. Necessary training may be provided to the school teachers through the teacher education institutions to experience new concepts. It is also needed to develop a coordination among schools and teacher education institutions with a proper mechanism for the provision of necessary materials in the form of audio-visual aids and technology during the teaching practice.

- III. The computer applications in the classroom may be improved through developing well-equipped computer laboratories in the schools. easy access of student teachers towards the computer laboratories is required to give them free hands to practice the theoretical concepts acquired through the theoretical component of teacher education. Training of teacher educators as well as of school teachers in the computer applications may be improved through short term refresher courses.
- IV. More improvement in the concept of the provision of laboratory schools is needed to bridge the gaps between theoretical knowledge and professional practice. For this purpose, the process of the allocation of funds may be improved through the decentralized concept of powers at bottom level.
- V. The teacher education curriculum needs to be made more compatible to the needs of school environment. There may be developed a balance in theoretical and practical components of teacher education through developing the concept of teaching practice in the light of professional needs of the school teachers. The practical component of teacher education may be developed through the increased weightage of teaching practice from 16.21% to 30% in the curriculum of teacher education program.

- VI. The balance between the theoretical and practical components of teacher education may also be improved through the internship concept of student teachers through introducing the concept of assistant teachers in schools. The fully funded internship program, specific in the field of elementary education, may be organized with the collaboration of school education department and teacher education institutions.
- VII. The concept of job-linked training with the practical model of teacher education may be introduced in the teacher education institutions. It may be organized through promoting the role of teacher education institutions in the recruitment policies as well as in the selection procedures of newly teachers in the school education department.
- VIII. Feedback and reflective practices during the teaching practice sessions may be improved through the peer group discussions as well as through the integrated concept of multi-media presentations, microteaching and digital learning technologies or ICT use in the classroom instruction.
- IX. The concept of developing portfolios of the students by the student teachers may be improved through the increased assessment weightage of the teaching practice from six credit hours or 200 marks to twelve credit hours or 400 marks in the examination system of teacher education program.

Future Research

The issues regarding the limitations and weaknesses of the study greatly impacted the results. The present study was delimited to the public sector teacher education institutions affiliated with the University of Education Lahore in Punjab, Pakistan. Therefore, to address the research questions in a better way, further research is definitely warranted. The study may be designed to better control the issues regarding the weaknesses of survey data, direct observation as well as the open-ended questions in the interviews and focus group discussions.

1. Similar study may be conducted for the teacher education programs in other universities of Pakistan.
2. A longitudinal study may be conducted through sequential explanatory and exploratory designs starting from the beginning of the program to the end of teaching practice. A study with a longer session may allow the researcher to gather information in more comfortable way.
3. A study may be conducted through identifying the practices of professional teachers in the real world situation of schools and to develop the curriculum of teacher education aligned with these real world practices.
4. Studies in comparative perspectives of different teacher education programs, at national and international level, regarding the gaps between theoretical knowledge and professional practice may be conducted.
5. A model of teacher education with innovative practices and technology integration may be developed to meet the needs of the society.

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APPENDIX, A

Classroom Observation Protocol

The student teacher uses the following concepts, knowledge & skills regarding theoretical knowledge of B.Ed program in his teaching practice/professional practice according to the following observational criteria.

1. The student teacher applies the given component in an exemplary & efficient way. Excellent quality is observed covering all aspects of lesson up to the possible extreme level. He maintains the discipline and manages the class in an excellent way.
 2. The student teacher applies the given component up to the moderate quality level. He understands well the concept and implemented the skill in a consistent and effective manner.
 3. The student teacher applies the given component with comparatively low quality but he has a capability to improve its quality with additional reading, observation and experience. Small part was covered with few students.
 4. The student teacher is unsuccessful to apply the given component and his performance might be considered unsatisfactory for a successful teaching and further improvement is required with work on fundamental practices.
 5. The given component is not applicable to the observation and seems unnecessary to be included in the practices of a student teacher.
1. EXC = Excellent, 2. G = Good, 3. NGNP = Neither Good Nor Poor, 4. P = Poor, 5. VP = Very Poor

DATE _____ START TIME _____ _____	STOP TIME _____ CODE # _____
TEACHER _____ GRADE/CLASS _____ SUBJECT _____	OBSERVER _____ NO OF STUDENTS _____ CONTENT/LESSON _____ _____

Sr. No.	Concepts	EXC	G	NGNP	P	VP
	PLANNING & ORGANIZATION OF LESSON					
1.	Selection of appropriate objectives					
2.	Selection of content according to the objectives					
3.	Organizing lesson presentation with logical sequence/order					
4.	Selection & organization of appropriate learning materials					
5.	Selection of activities well in advance the lesson					
B.	INSTRUCTIONAL COMPETENCIES & SKILLS	EXC	G	NGNP	P	VP
1.	Introduction of the topic through different techniques					
2.	Using different assessment techniques for previous learning					
3.	Appropriate utilization of learning materials					
4.	Using four basic communication skills (Listening, Speaking, Reading & Writing) effectively in the classroom.					
5.	Motivational techniques for active participation & learning					
6.	Being focused on objectives throughout the instruction					
7.	Presentation & delivery of content					
8.	Distributing opportunities to students for active learning					
9.	Questioning techniques to enhance learning					
10.	Monitoring students' learning activities					
C.	EVALUATION TECHNIQUES	EXC	G	NGNP	P	VP
1.	Developing tests for students' evaluation					
2.	Observation of students during classroom activities					
3.	Using different assessment methods					
4.	Marking & grading of students' tests					
5.	Maintaining students' progress records					
6.	Informing students and parents with individual progress					
7.	Diagnosing students' difficulties, weaknesses & strengths					
8.	Feedback and reinforcement to students through tests					
9.	Future instructional planning through progress records					
10.	Evaluation of homework & assignments					
D.	CLASSROOM MANAGEMENT SKILLS	EXC	G	NGNP	P	VP
1.	Maintenance of students' full attention					
2.	Time & work commitment management					
3.	Management of classroom materials					
4.	Setting jointly rules & their consequences					
5.	Seating arrangements and grouping of students					
6.	Maintaining sequence of activities					
7.	Monitoring students' activities					
8.	Responding quickly to disruptive behaviour					
9.	Managing to avoid off task behaviour					
10.	Keeping & organization of students' records					
E.	METHODOLOGY & PROCEDURES	EXC	G	NGNP	P	VP
(a)	General Methods					
1.	Recitation Method					
2.	Lecture Method					
3.	Demonstration Method					

4.	Activity Method					
5.	Problem Solving Method					
(b)	Innovative Methods					
6.	Micro Teaching					
7.	Programmed Instruction					
8.	Computer Assisted Instruction					
9.	Cooperative Learning					
10.	Role Play/Simulations					
F.	LEARNING MATERIALS & TECHNOLOGY INTEGRATION	EXC	G	NGNP	P	VP
1.	Delivery of content with the help of charts & pictures					
2.	Using writing board(black board/white board)					
3.	Presentation of models w. r. t. the content					
4.	Art & craft skills (pencil sketching & geometrical shapes)					
5.	Using text books, workbooks & teacher manuals					
1.	Using simulation & computer games in the classroom					
2.	Using online & offline tutorials					
3.	Using multimedia in classroom environment					
4.	Data collection & data analysis through computer skills					
5.	Developing content management system on computers					

APPENDIX, B

Questionnaire for Student Teachers

Dear, Sir/Mdm

I am working on a research dissertation for the fulfilment of Ph.D (Education) at International Islamic University, Islamabad. Major area of my study is teacher education in Pakistan and the topic of the study is **"Teacher Education in Pakistan: Bridging gaps between Theoretical Knowledge and Professional Practice"** which deals with the long standing problem of the gaps between the knowledge and skills received by the teachers in their pre-service training programs and their application in the real world situation at schools. A questionnaire has been developed to seek information about the problem and the information gained through this questionnaire will be used only for research purpose. Please give your opinion according to your perception in this regard.

Thanks,

Muhammad. Bilal, International Islamic University, Islamabad.
(bilal.msedu29@iiu.edu.pk).

PERSONAL INFORMATION

- | | |
|--|----------------------------|
| 1.NAME (Not Necessary) ----- | 7. GENDER Male/Female |
| 2.COLLEGE FOR (B.Ed) ----- | 8.AGE (In Years) ----- |
| 3.PRACTICE SCHOOL ----- | 9. SCHOOL AREA Rural/Urban |
| 4.TEACHING SUBJECTS Science/Arts | 10. DISTRICT ----- |
| 5.QUALIFICATION BA/BSc/BS/MA/MSc | 11. Email ----- |
| 6.LEVEL OF TEACHING Primary/Middle/Secondary | 12. Ph. # ----- |

➤ **Please tick (/) the response which matches your opinion according to the following options**

EXC = Excellent, G = Good, NGNP= Neither Good Nor Poor, P = Poor, VP = Very Poor

Q. 1. To what extent, the following aspects of theoretical knowledge you obtained through the B.Ed course, were successfully applied in your teaching practice? Tick the relevant option.

Sr. No.	Concepts	EXC	G	NGNP	P	VP
	PLANNING & ORGANIZATION OF LESSON					
6.	Selection of appropriate objectives					
7.	Selection of content according to the objectives					
8.	Organizing lesson presentation with logical sequence/order					
9.	Selection & organization of appropriate learning materials					
10.	Selection of activities well in advance the lesson					
H.	INSTRUCTIONAL COMPETENCIES & SKILLS	EXC	G	NGNP	P	VP
11.	Introduction of the topic through different techniques					

12.	Using different assessment techniques for previous learning					
13.	Appropriate utilization of learning materials					
14.	Using four basic communication skills (Listening, Speaking, Reading & Writing) effectively in the classroom.					
15.	Motivational techniques for active participation & learning					
16.	Being focused on objectives throughout the instruction					
17.	Presentation & delivery of content					
18.	Distributing opportunities to students for active learning					
19.	Questioning techniques to enhance learning					
20.	Monitoring students' learning activities					
I.	EVALUATION TECHNIQUES	EXC	G	NGNP	P	VP
11.	Developing tests for students' evaluation					
12.	Observation of students during classroom activities					
13.	Using different assessment methods					
14.	Marking & grading of students' tests					
15.	Maintaining students' progress records					
16.	Informing students and parents with individual progress					
17.	Diagnosing students' difficulties, weaknesses & strengths					
18.	Feedback and reinforcement to students through tests					
19.	Future instructional planning through progress records					
20.	Evaluation of homework & assignments					
J.	CLASSROOM MANAGEMENT SKILLS	EXC	G	NGNP	P	VP
11.	Maintenance of students' full attention					
12.	Time & work commitment management					
13.	Management of classroom materials					
14.	Setting jointly rules & their consequences					
15.	Seating arrangements and grouping of students					
16.	Maintaining sequence of activities					
17.	Monitoring students' activities					
18.	Responding quickly to disruptive behaviour					
19.	Managing to avoid off task behaviour					
20.	Keeping & organization of students' records					
K.	TEACHING METHODS	EXC	G	NGNP	P	VP
(a)	General Methods					
11.	Recitation Method					
12.	Lecture Method					
13.	Demonstration Method					
14.	Activity Method					
15.	Problem Solving Method					
(b)	Innovative Methods					
16.	Micro Teaching					
17.	Programmed Instruction					
18.	Computer Assisted Instruction					
19.	Cooperative Learning					
20.	Role Play/Simulations					

L.	LEARNING MATERIALS & TECHNOLOGY INTEGRATION	EXC	G	NGNP	P	VP
6.	Delivery of content with the help of charts & pictures					
7.	Using writing board(black board/white board)					
8.	Presentation of models w. r. t. the content					
9.	Art & craft skills (pencil sketching & geometrical shapes)					
10.	Using text books, workbooks & teacher manuals					
6.	Using simulation & computer games in the classroom					
7.	Using online & offline tutorials					
8.	Using multimedia in classroom environment					
9.	Data collection & data analysis through computer skills					
10.	Developing content management system on computers					

Q.4. How you are satisfied about the content of different subjects of B.Ed programme fulfils the needs of professional practice in the real world situation at school?

☐ Very Satisfied ☐ Satisfied ☐ Unclear ☐ Dissatisfied ☐ Very Dissatisfied

Q.3. How would you rate the balance between theoretical component and practical component of B.Ed training program for your preparedness as an effective teacher?

- ☐ Too Heavily weighted in favour of Theoretical Component
☐ Too Heavily weighted in favour of Practical Component
☐ About Right
☐ D'nt Know

Q. 4. Identify some problems & factors which made hurdles to apply the theoretical concepts of B.Ed in your teaching practice.

1. _____
2. _____
3. _____
4. _____

Q.5. What strategies are necessary to fill the gaps between theoretical knowledge and professional practice, you felt during your teaching practice? Give some suggestions

1. _____
2. _____
3. _____
4. _____

APPENDIX, C

Questionnaire for Teacher Educators of Teacher Education Institutions

Dear, Sir/Mdm

I am working on a research project for the fulfilment of Ph. D program in the field of education at International Islamic University, Islamabad. Major area of my study is teacher education in Pakistan and the topic of the study is "Teacher Education in Pakistan: Bridging gaps between Theoretical Knowledge and Professional Practice" which deals with the long standing problem of the gaps between the knowledge and skills received by the teachers in their pre-service training programs and their application in the real world situation at schools. A questionnaire has been developed to seek information about the problem and the information gained through this questionnaire will be used only for research purpose. The anonymity standards will be met strongly in this regard. Please give your opinion according to your perception with regards to the nature of the questions given below.

Thanks,

Muhammad. Bilal, Reg. No. 73-FSS/PHDEDU/S-11

International Islamic University, Islamabad (bilal.msedu29@iiu.edu.pk, Ph # 03336204678)

PERSONAL INFORMATION

1. Name ----- 2. Gender -----Male/Female
 3. Teaching Subjects I ----- II----- III -----
 4. College/Univ. Campus -----
 5. Experience in years ----- 6. Qualification-----
 7. Ph. # ----- 8. Email -----
 ➤ Please tick (/) the response which matches your opinion according to the following options
 ➤ EXC = Excellent , G = Good., NGNP = Neither Good Nor Poor, P = Poor, VP = Very Poor

Q. 1. In your opinion, at what level, the following aspects of theoretical knowledge the student teachers obtain through the B.Ed course, are successfully applied in their teaching practice?

Sr. No.	Concepts	EXC	G	NGNP	P	VP
	PLANNING & ORGANIZATION OF LESSON					
11.	Selection of appropriate objectives					
12.	Selection of content according to the objectives					
13.	Organizing lesson presentation with logical sequence/order					
14.	Selection & organization of appropriate learning materials					
15.	Selection of activities well in advance the lesson					
N.	INSTRUCTIONAL COMPETENCIES & SKILLS	EXC	G	NGNP	P	VP
21.	Introduction of the topic through different techniques					
22.	Using different assessment techniques for previous learning					

23.	Appropriate utilization of learning materials					
24.	Using four basic communication skills (Listening, Speaking, Reading & Writing) effectively in the classroom.					
25.	Motivational techniques for active participation & learning					
26.	Being focused on objectives throughout the instruction					
27.	Presentation & delivery of content					
28.	Distributing opportunities to students for active learning					
29.	Questioning techniques to enhance learning					
30.	Monitoring students' learning activities					
O.	EVALUATION TECHNIQUES	EXC	G	NGNP	P	VP
21.	Developing tests for students' evaluation					
22.	Observation of students during classroom activities					
23.	Using different assessment methods					
24.	Marking & grading of students' tests					
25.	Maintaining students' progress records					
26.	Informing students and parents with individual progress					
27.	Diagnosing students' difficulties, weaknesses & strengths					
28.	Feedback and reinforcement to students through tests					
29.	Future instructional planning through progress records					
30.	Evaluation of homework & assignments					
P.	MANAGEMENT & ORGANIZATIONAL SKILLS	EXC	G	NGNP	P	VP
21.	Maintenance of students' full attention					
22.	Time & work commitment management					
23.	Management of classroom materials					
24.	Setting jointly rules & their consequences					
25.	Seating arrangements and grouping of students					
26.	Maintaining sequence of activities					
27.	Monitoring students' activities					
28.	Responding quickly to disruptive behaviour					
29.	Managing to avoid off task behaviour					
30.	Keeping & organization of students' records					
Q.	METHODOLOGY & PROCEDURES	EXC	G	NGNP	P	VP
(a)	General Methods					
21.	Recitation Method					
22.	Lecture Method					
23.	Demonstration Method					
24.	Activity Method					
25.	Problem Solving Method					
(b)	Innovative Methods					
26.	Micro Teaching					
27.	Programmed Instruction					
28.	Computer Assisted Instruction					
29.	Cooperative Learning					
30.	Role Play/Simulations					

R.	LEARNING MATERIALS & TECHNOLOGY INTEGRATION	EXC	G	NGNP	P	VP
11.	Delivery of content with the help of charts & pictures					
12.	Using writing board(black board/white board)					
13.	Presentation of models w. r. t. the content					
14.	Art & craft skills (pencil sketching & geometrical shapes)					
15.	Using text books, workbooks & teacher manuals					
11.	Using simulation & computer games in the classroom					
12.	Using online & offline tutorials					
13.	Using multimedia in classroom environment					
14.	Data collection & data analysis through computer skills					
15.	Developing content management system on computers					

Q.4. How you are satisfied for student teachers about the content of different subjects of B.Ed programme fulfils the needs of professional practice in the real world situation at school?

☐ Very Satisfied ☐ Satisfied ☐ Unclear ☐ Dissatisfied ☐ Very Dissatisfied

Q.3. How would you rate the balance between theoretical component and practical component of B.Ed training program for your preparedness as an effective teacher?

- ☐ Too Heavily weighted in favour of Theoretical Component
☐ Too Heavily weighted in favour of Practical Component
☐ About Right
☐ D'nt Know

Q. 4. Identify some problems & factors which made hurdles to apply the theoretical concepts of B.Ed in your teaching practice.

1. _____
2. _____
3. _____
4. _____

Q.5. What strategies are necessary to fill the gaps between theoretical knowledge and professional practice, you felt during your teaching practice? Give some suggestions

1. _____
2. _____
3. _____
4. _____

APPENDIX, D

List of Teacher Education Institutions in Punjab, Pakistan

Sr. No.	Public Sector Teacher Education Institutions
1.	Bahauddin Zakariya University, Multan
2.	Directorate of Staff Development, Punjab, Lahore
3.	Division of Education, University of Education, Lahore
4.	Fatima Jinnah Women University, Rawalpindi
5.	Govt. College of Elementary Teachers, Bahawalpur
6.	Govt. College of Elementary Teachers (M), Baghdad Road, Bahawalpur
7.	Govt. College of Elementary Teachers (M), Dera Ghazi Khan
8.	Govt. College of Elementary Teachers (M), Kamalia
9.	Govt. College of Elementary Teachers (M), Khanpur
10.	Govt. College of Elementary Teachers (M), Gakhar, Gujranwala
11.	Govt. College of Elementary Teachers (M), Lalamusa, Gujrat
12.	Govt. College of Elementary Teachers (M), Mianwali
13.	Govt. College of Elementary Teachers (W), Bahawalpur
14.	Govt. College of Elementary Teachers (W), Dera Ghazi Khan
15.	Govt. College of Elementary Teachers (W), H-9, Islamabad
16.	Govt. College of Elementary Teachers (W), Kamalia
17.	Govt. College of Elementary Teachers (W), Lalamusa, Gujrat
18.	Govt. College of Elementary Teachers (W), Nawan Shaher, Multan
19.	Govt. College of Elementary Teachers (W), Talagang, Chakwal
20.	Govt. College of Elementary Teachers, Rangeelpur, Multan
21.	Govt. College of Elementary Teachers, Bosan Road, Multan
22.	Govt. College of Elementary Teachers, Chiniot, Jhang
23.	Govt. College of Elementary Teachers, Chishtian, Bahawalnagar
24.	Govt. College of Elementary Teachers, Gujrat
25.	Govt. College of Elementary Teachers, Jehlum
26.	Govt. College of Elementary Teachers, Kasur
27.	Govt. College of Elementary Teachers, Kot Adu, Muzaffargarh
28.	Govt. College of Elementary Teachers, Kot Lakhpat, Lahore
29.	Govt. College of Elementary Teachers, Muzaffargarh
30.	Govt. College of Elementary Teachers, Narowal
31.	Govt. College of Elementary Teachers, Sialkot
32.	Govt. College of Elementary Teachers, Rawalpindi
33.	Govt. College of Elementary Teachers, Sahiwal
34.	Govt. College of Elementary Teachers, Samanabad, Faisalabad
35.	Govt. College of Elementary Teachers, Sargodha
36.	Govt. College of Elementary Teachers, Shahpur Sadar, Sargodha
37.	Govt. College of Elementary Teachers (W), Sharqpur, Shekhupura
38.	Govt. College University, Faisalabad
39.	Govt. Fatima Jinnah College, Chuna Mandi, Lahore

40. Govt. In-Service Training College for the teachers of Disabled Children, Lahore
41. Govt. Training College for Teachers DEAF, Lahore
42. Govt. Training College for the Teachers of Blind, Lahore
43. Institute of Education and Research (IER), University of the Punjab, Lahore
44. Islamia University, Bahawalpur
45. Provincial Institute of Teacher Education (PITE), Lahore
46. Department of Special Education, University of the Punjab, Lahore
47. University of Sargodha
48. University of Education, Jauharabad Campus
49. University of Education, Bank Road Campus, Lahore
50. University of Education, Lower Mall Campus, Lahore
51. University of Education, Vehari Campus
52. University of Education, Attock Campus
53. University of Education, Township Campus, Lahore
54. University of Education, Multan Campus
55. University of Education, Okara Campus
56. University of Education, DG Khan Campus
57. University of Education, Faisalabad Campus
- Private Sector Teacher Education Institutions**
1. Ali Institute of Education, Lahore
2. Beconhouse National University, Lahore
3. Forman Christian College, Lahore
4. Iqra College of Education, Rahim Yar Khan
5. Liccs Group of Colleges, Layyah
6. Superior College for Special Education, DG Khan

APPENDIX, E

Sampling of University of Education Campuses

Division of University of Education, Lahore campuses according to their enrolment level

highlighted with selected campuses

S. No.	Institutions with high level enrolment (100 & above)	Institutions with medium level enrolment (60-100)	Institutions with low level enrolment (Below 60)
1	UE Bank Road, Lahore campus	UE D. G. Khan campus	UE Jauharabad campus
2	UE Faisalabad campus	UE Multan campus	UE Vehari campus
3	UE Township campus, Lahore	UE Attock campus	
4	UE Lower Mall, Lahore campus	UE Okara campus	

APPENDIX, F

Sampling of Government Colleges of Elementary Teachers (GCETs)

Division of Government Colleges for Elementary Teachers (GCETs) according to their
level of enrolment and selected colleges for sample highlighted

S. No.	Institutions with high level enrolment (100 & above)	Institutions with medium level enrolment (60-100)	Institutions with low level enrolment (Below 60)
1	GCET (W) Nawan Shehr Multan	GCET (M) Chiniot	GCET (W) Model Town, A Bahawalpur
2	GCET (M) Gakhar	GCET (M) Gujrat	GCET (W) Manka Canal D. G. Khan
3	GCET (M) Kot Lakhat, Lahore	GCET (M) Khanpur	GCET (W) H-9, Islamabad
4	GCET (M) Muzafar Garh	GCET (M) Kot Adu	GCET (W) Kamalia
5	GCET (M) Chungi # 6 Multan	GCET (M) Barkat Park Lala Musa	GCET (W) Tala Gang
6	GCET (M) Norowal	GCET (M) Sargodha	GCET (W) Baghdad Road Bahawalpur
7	GCET (F) Sharqpur	GCET (W) Setellite Town Bahawalpur	GCET (M) Chistian
8	GCET Pasrur	GCET(M) Miawali	GCET (M) Rehmatabad Rawalpindi
9	GCET KASUR	GCET (M) Rangeelpur, Multan	GCET (M) Shahpur
10	GCET Kamalia (F)	GCET (M) Sahiwal	GCET Lala Musa (F)
11		GCET (M) Jehlum	GCET Nawan shehr Multan
12		GCET (M) Ghazi Park D. G. Khan	

<http://www.ue.edu.pk/>

APPENDIX, G

A Questionnaire for Focus Group Discussions

- Q.1. How and to what extent, do you succeed to apply the theoretical knowledge, you obtained through the course content at campus, in your professional practice?
- Q.2. How do you perceive the relevance of pedagogical skills provided at campus with your professional practice at schools?
- Q.3. What challenges and problems do you perceive are there in applying the theoretical knowledge, you obtain through your course content, in your teaching practice?
- Q.4. How do you perceive the gaps between theoretical knowledge and professional practice in teacher education program?
- Q.5. What are the strategies to fill the gaps between theoretical knowledge and professional practice in teacher education
- I. How do you perceive the favorable conditions at teacher education institutions and practice schools to fill the gaps between theoretical knowledge and professional practice of student teachers?
- II. What necessary changes in teacher education program would you recommend to integrate the theoretical knowledge into professional practice?

APPENDIX, H

A Questionnaire for Interview

- Q.1. How and to what extent, the student teachers succeed to apply the theoretical knowledge, they obtain through the course content at campus, in their professional practice?
- Q.2. How do you perceive the relevance of pedagogical skills provided to the student teachers at campus with their professional practice at schools?
- Q.3. What challenges and problems do you perceive are there in applying the theoretical knowledge, the student teachers obtain through their course content, in their teaching practice?
- Q.4. What are the gaps between theoretical knowledge and professional practice in teacher education program?
- Q.5. What are the strategies to fill the gaps between theoretical knowledge and professional practice in teacher education?
- I. How do you perceive the favorable conditions at teacher education institutions and practice schools to fill the gaps between theoretical knowledge and professional practice of student teachers?
- II. What necessary changes in teacher education program would you recommend to integrate the theoretical knowledge into professional practice?