

**EFFECTIVENESS OF PROFESSIONAL
DEVELOPMENT PROGRAMS ON ENHANCING THE
KNOWLEDGE LEVEL AND CHANGING THE
PROFESSIONAL MINDSET OF UNIVERSITY
TEACHERS**



**ADNAN SALEEM
Roll No. Y804339**

**Department of Secondary Teacher Education
Faculty of Education
Allama Iqbal Open University, Islamabad
2016**

**EFFECTIVENESS OF PROFESSIONAL
DEVELOPMENT PROGRAMS ON ENHANCING THE
KNOWLEDGE LEVEL AND CHANGING THE
PROFESSIONAL MINDSET OF UNIVERSITY
TEACHERS**

**ADNAN SALEEM
Roll No. Y804339**

**Submitted in partial fulfillment of the requirements of the Doctor of
Philosophy degree in Education with specialization in Teacher
Education at the Faculty of Education Allama Iqbal Open University
Islamabad 2016**

DEDICATION

I

Dedicate this humble effort

To

ALL TEACHERS

Of the past and times to come

AUTHOR’S DECLARATION

I, Adnan Saleem S/O Mirza Muhammad Saleem Ullah Roll No.Y804339, a student of Ph.D at Allama Iqbal Open University do hereby solemnly declare that the thesis entitled “Effectiveness of Professional Development Programs on Enhancing the Knowledge Level and Changing the Professional Mindset of University Teachers” submitted by me in partial fulfillment of Ph.D degree in the discipline of Teacher Education is my original work, and has not been submitted or published earlier and shall not, in future, be submitted by me for obtaining any degree from this or any other university or institution.

Signature: _____
Adnan Saleem

ACKNOWLEDGEMENTS

I being the son of great educationists (Father: Mirza Muhammad Saleem Ullah and Mother: Mrs Asifa Saleem, Late) thank to Almighty Allah who gave me the wisdom to join the sacred profession of teaching voluntarily despite being in fighting arms of Pakistan Army. I also bow my head for excelling in this noble profession as Ph.D scholar in the field of teacher education.

I broadened my horizon and learned a lot during this process of research for which the credit goes to my supervisor, Prof. (Retd.) Dr. Rehana Masrur, Faculty Members of Department of Secondary Teacher Education, AIOU and Dr. Muhammad Tanveer Afzal whose unconditional help remained granted. My special thanks to honourable Prof. Dr. Shahid Siddiqui, VC and Prof. Dr. Nasir Mehmood who helped me a lot in my final preparation at viva voce stage.

I am obliged to all respondents and LID (HEC) concerned staff that facilitated me in provision and gathering of data at different stages and helped to the maximum in the accomplishment of this uphill task. Thanks to respondents (university teachers) for sparing their precious time to provide desired information at short notice in certain cases.

I cannot forget to mention the encouragement provided by my family members, senior officers of my department and colleagues during the completion of research. My prayers for Waqas Ahmad who helped me all the time. At the end, I pray to Allah to give me more strength and courage to serve this holy profession in future as well.

(Adnan Saleem)

ABSTRACT

Title: Effectiveness of Professional Development Programs on Enhancing the Knowledge Level and Changing the Professional Mindset of University Teachers

Pages: 154

Researcher: Adnan Saleem

Advisor: Prof (Retd.) Dr. Rehana Masrur

University: Allama Iqbal Open University, Islamabad

Year: 2016

Subject Area: Teacher Education

Degree: Doctor of Philosophy

The study was taken up to see the effectiveness of Master Trainer Faculty Professional Development Program being conducted by LID (HEC). The results of the study provided evidences of effectiveness of existing efforts with strengths and weaknesses which will give guidelines to further improve the program. It will also help the participants to assess their own performance in the light of received training and to improve further in the future. The major areas under focus were the extent of knowledge achieved during the program, learning of teaching skills & its application on ground and the change in mindset of teacher during the professional training. The statement of the problem was “Effectiveness of professional development programs on enhancing the knowledge level and changing the professional mindset of university teachers”.

For this purpose, objectives and hypotheses were worked out keeping in view the scope of the study. Qualitative and quantitative approaches were used in the study:

in quantitative approach pre-test post-test design was employed whereas in qualitative approach interviews were conducted in order to triangulate the data.

Population of the study comprised of university teachers from seventy five government universities and eighteen private HEC funded universities who participated in MT-FPDP since 2003 till Nov 2011. Sample of the study was selected in three layers. The first layer of sample non-probability consisted of MT-FPDP-15 twenty eight male and female for pre & post-test and for mindset comprised of participants of MT-FPDP-15&16 (fifty six teachers). Second layer of sample for survey data consisted of 205 participants out of total population of 441 from FPDP-1 to FPDP-15. Final layer of sample for interview consisted of 10% (20) randomly selected out of 205 participants, who responded to survey.

In this study written test, mindset questionnaire, survey questionnaire and interview were used as instruments. The written test was used to measure the effectiveness of training provided by LID. Mindset questionnaire developed by researcher was used to see the change in mindset of respondents.

The study revealed the findings which lead to major conclusions, like, professional development training of the university teachers has positive impact on the knowledge level of participants of MT-FPDP 1 to 15, the training has enhanced the application of professional development practices of the participants university teachers at their job in the areas of awareness, identification of communication barrier, evaluation of teaching practices and comfort in the adoption of instructions whereas the participating teachers need more training regarding understanding of the research, development of instruments, sample selection and curriculum development as these were rated low and the change in mindset of the fresh trainees was higher than the previous one. Consequently, the major recommendations were, as MT-FPDP

has positive effect on the knowledge level of university teachers therefore the training may be continued in future, understanding of research, development of instrument, sample selection and curriculum development areas may be allocated more time during the faculty development training of university teachers and faculty development training courses may be run after every 10 years rather than offering once in a career.

TABLE OF CONTENTS

Chapter	Topic	Page
1.	INTRODUCTION	1
1.1	Statement of the Problem	4
1.2	Objectives of the Study	5
1.3	Research Hypothesis	6
1.4	Significance of the Study	7
1.5	Delimitations	8
1.6	Limitations	8
1.7	Assumptions	8
1.8	Methodology of the Study	9
	1.8.1 Population	10
	1.8.2 Sample	11
	1.8.3 Instrumentation	12
1.9	Data Collection	13
1.10	Analysis of Data	13
1.11	Operational Definitions	14
	1.11.1 Experience	14
	1.11.2 Training Batch	14
	1.11.3 Knowledge Level	14
	1.11.4 Perception	14
	1.11.5 Mindset	14
	1.11.6 Implementation Level	15
	1.11.7 Professional Development	15

2.	REVIEW OF RELATED LITERATURE	16
2.1	Historical Background of Teacher Education	16
2.2	Approaches to Teacher Development	18
2.3	Opportunities for Teacher Development	24
2.4	Teaching Beliefs, Practices and Strategies	24
2.5	Phases of Development of University Teachers	27
2.6	How Academics Learn to Become Effective Teachers	31
2.7	Development Program Impact	32
2.8	Place of Research in Reform in Teacher Education	34
2.9	Private Sector and Teacher Education	35
2.10	Teacher Education – Pakistani versus International Reform	37
2.11	The Professional Development Mindset	41
2.12	How Teachers Change	45
	2.12.1 Change Hurts	46
	2.12.2 Voluntary Change	47
2.13	Training Models	49
2.14	Contributions of Learning Innovation Division in Teacher Training	56
2.15	Master Trainers-Faculty Professional Development Program	57
2.16	Need to Assess and Evaluate	59
3.	RESEARCH METHODOLOGY AND PROCEDURE	62
3.1	Conceptual Framework of the Study	63
3.2	Population	66

3.3	Sample	66
3.4	Instrumentation	67
3.5	Pilot Testing	69
3.6	Data Collection	70
3.7	Analysis of Data	70
4.	DATA ANALYSIS AND INTERPRETATION	71
4.1	Knowledge Level of University Teachers	72
4.2	Application of Professional Development Practices	74
4.3	Perception towards Professional Development	79
	4.3.1 Qualitative Analysis for Comparison of FPDP-15 & FPDP-16 batches	84
4.4	Change in Mindset	86
	4.4.1 Overall Mindset Comparison	86
	4.4.1.1 Component of Flexibility	88
	4.4.1.2 Component of Positivity	89
	4.4.1.3 Component of Ambition	90
	4.4.1.4 Component of Honesty	91
	4.4.1.5 Component of Receptivity	92
	4.4.1.6 Component of Communication	93
	4.4.1.7 Component of Collaboration	94
	4.4.1.8 Component of Patience	96
	4.4.1.9 Component of Balance	97
4.5	Mindset of Experienced and Less Experienced Professionals	98
4.6	Relationship between Implementation Level, Change in	100

	Mindset and Knowledge Change	
	4.6.1 Implementation level & Change in Mindset	100
	4.6.2 Implementation level & Knowledge Change	101
	4.6.3 Perceptions and Implementation level	101
4.7	Perceptions towards Professional Development Training	102
	4.7.1 Contributions/Impact of MT-FPDP	102
	4.7.2 Evaluation and Research Abilities	103
	4.7.3 Communication and Educational Psychology	103
	4.7.4 Curriculum Development	103
	4.7.5 Mindset	104
4.8	Summary of the Responses about Interview Protocol	104
5.	SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	106
	5.1 Summary	106
	5.2 Findings	108
	5.3 Discussion	112
	5.4 Conclusions	116
	5.5 Recommendations	117
	5.6 Recommendations for Further Research	118
6.	BIBLIOGRAPHY	119
Appendix A	Interview Protocol	130
Appendix B	Letter for Research	132
Appendix C	Marking Rubric – Written Pre/Post Test	133
Appendix D	Pre-Post Test LID	135
Appendix E	Outlines of the Modules of the Professional Competency	139

Enhancement Program for University Teachers (PCEPT)

Appendix F	Questionnaire	150
Appendix G	Travel Plan	154

LIST OF TABLES

TABLE#	TOPIC	PAGE
1.	Descriptive Statistics of the Sampled Participants Scores on Pre-Test and Post Test	73
2.	Paired Sample t-statistics of the Participants Scores on Pre-Test and Post-test	74
3.	Description of Level of Implementation	75
4.	Perception towards Professional Development	81
5.	Summary of Overall Mindset Description	87
6.	Summary of t-Statistics on Overall Change in Mindset Response	87
7.	Summary of Flexibility – Component of Mindset	88
8.	Summary of t-Statistics Flexibility – Component of Mindset	88
9.	Summary of Positivity – Component of Mindset	89
10.	Summary of t-Statistics Positivity – Component of Mindset	89
11.	Summary of Ambition - Component of Mindset	90
12.	Summary of t-Statistics Ambition – Component of Mindset	90
13.	Summary of Honesty – Component of Mindset	91
14.	Summary of t-Statistics Honesty – Component of Mindset	91
15.	Summary of Receptivity – Component of Mindset	92
16.	Summary of t-Statistics Receptivity – Component of Mindset	93
17.	Summary of Communication – Component of Mindset	93
18.	Summary of t-Statistics Communication – Component of Mindset	94
19.	Summary of Collaboration – Component of Mindset	95
20.	Summary of t-Statistics Collaboration – Component of Mindset	95

21.	Summary of Patience – Component of Mindset	96
22.	Summary of t-Statistics Patience – Component of Mindset	86
23.	Summary of Balance – Component of Mindset	97
24.	Summary of t-Statistics Balance – Component of Mindset	97
25.	Batch Statistics of Experienced and Less Experienced Teachers	99
26.	Independent Samples t-Test of Experienced and Less Experienced Teachers	99
27.	Correlation between Implementation level & Mindset	100
28.	Correlation between Implementation level & knowledge Change	101
29.	Correlation between Perceptions and Implementation level	101

LIST OF ABBREVIATIONS

LID	Learning Innovation Division
HEC	Higher Education Commission
CPD	Continuous Professional Development
NAHE	National Academy of Higher Education
ELTR	English Language Teaching Reforms
MT-FPDP	Master Trainer Faculty Professional Development Program
PCEPT	Professional Competency Enhancement Program for Teachers

CHAPTER 1

INTRODUCTION

There is no alternative to acquisition of knowledge and knowledge is always the source of comprehensive individual and professional growth. There is no stagnation in the level of knowledge as it changes after every moment and one has to keep abreast accordingly (Holmes, 2005, p.133).

Professional development refers to skills and knowledge attained for both personal development and career advancement. Professional development encompasses all types of facilitated learning opportunities, ranging from college degrees to formal coursework, conferences and informal learning opportunities in practice. There are a variety of approaches to professional development, including consultation, coaching, communities of practice, lesson study, mentoring, reflective supervision and technical assistance etc. Professional development is defined as, “activities that develop an individual’s skills, knowledge, expertise and other characteristics as a teacher” (OECD, 2009, p. 49).

A broad definition is given in Teaching and Learning International Survey (TALIS, 2010), which includes following aspects in professional development:-

- Initial training
- Induction courses
- In service training
- Continuous professional development in school settings

It implies that professional development is a broad term which encompasses a range of people, interests and approaches. Those who engage in professional development share a common purpose of improving their ability to do their work in a

befitting manner. The opportunities for professional development range from a single workshop to a semester-long academic course. Some examples of approaches to professional development are Case Study Methods (Minale, 2006).

Every profession has its basic issues, challenges, ideas and limitations which vary in different locations and environments. However, students who enter in the profession of teaching bring many years of experience with schools, teachers and other students as a background to their course of study. If teachers (or everybody) recall their own respective teachers, they will find that few were good teachers and few were bad. Most students believe that they can identify the good teacher and the bad one as well. Most trainers and school managers also claim that they can also differentiate between good and bad teacher. Then the next logical question is, what makes a good teacher and what all which do not make a good teacher. Assessing a teacher as good and bad is a relative term when it is considered as a personal point of view, but the teachers are being rated as good and bad on certain criteria and norms. There are standards available for the assessment of teachers and important components are content knowledge, pedagogical knowledge and the mindset towards teaching. A number of expert investigators observing the same teaching performances have also failed to reach agreement. Standards for assessing teacher effectiveness shift from age to age, from community to community, from urban to rural within one country, from one expert to other in the same society (Ornstein & Miller, 1980, p.252).

Irrespective of age, community and region, teacher is considered the most important figure in teaching learning environment. Recently, a study has highlighted the central role of teachers and expressed, “the quality of an education system cannot

exceed the quality of its teachers” and that “the only way to improve outcomes is to improve instruction” (Barber and Mourshed, 2007).

The way good or bad teachers teach is grounded in their backgrounds, motivation, their biographies, their hopes and dreams, their opportunities and aspirations and above all their training and education as a teacher. Teacher training is a very complex and difficult academic responsibility. Developing teacher education programs based on the best research is like playing with nested dolls; inside each layer is embedded another layer. Good teacher education programs have to be based on several layers of knowledge. One layer deals with the learning process of the students with reference to their needs and capabilities. The second layer deals with the learning of teachers themselves in relation to their respective students. The next layer is how to combine the other two layers into a coherent teacher education program. The fourth layer deals with the delivery of knowledge and skills in an effective manner. The last layer is the different context of the teacher education; the school, college and university (McIntyre & Byrd, 2000, p.ix).

In Pakistan, efforts have been made to train the teacher till secondary school level and the professional training is the prerequisite for getting jobs as teacher in any government school. Desired standard of teacher training will remain a dream till the point basic factors like, quality of teachers’ academic background, status of teachers, mindset of teachers, qualified and motivated trainers, resources and selection of training contents as per global trends are taken care of.

In Pakistan the professional training for getting the job as university teachers is not the prerequisite so far. Even there is no systematic effort for in-service teacher training at university level. The question, why the need for training was not felt at any level, needs deliberation. In the recent past, HEC established Learning Innovation

Division (LID) as a hub for in-service Faculty Professional Development. LID is giving the training to university teachers through short and long duration courses under the Faculty Professional Development Program rather than the short projects. FPDP is being financed through recurrent budget every year since 2003 instead of the project which is being dealt through developmental budget as one time measure (as per HEC rules). Newly appointed university teachers are unaware of the importance of the pedagogical skills as well as professional training but when they are involved in teaching learning process then they face certain problems which can be resolved with professional training. They also observe their senior trained colleagues which is a further source of motivation to join professional training courses as soon as possible. Quality at all levels and stages has to be ensured while imparting professional training, include the quality of contents for training and trainers which can ultimately confirm the quality of teaching learning process. At the moment, a dire need is felt to see the effect of training being imparted on the mindset of the teachers because any amount of training will remain useless if the mindset of the teacher is not in line with the desired goals of training. The present study is a humble effort to find out the effectiveness of training on the knowledge, skills and mindset of university teachers being imparted through LID.

1.1 STATEMENT OF THE PROBLEM

Teachers at all levels play a pivotal role in the development of the nation. Japan and China who have same life after coming on world globe as of Pakistan but they are among leading countries of the world. One of the basic factors of their rapid development is strong education system. Good education system depends on realistic objectives and policies, economy and sincere professional teachers. Both the countries

focused on teacher training at all levels. Pakistan could not do much in the field of education due to many reasons. At provincial level, teacher training has been imparted at school level but the quality is again questionable. There was no training for university teachers in Pakistan at any level other than the on job experience and coaching by the senior faculty members at departmental level. HEC for the first time felt the need and started the training for university teachers. After passing through the different stages, Learning Innovation Division (LID) of HEC has developed teacher training programs at different levels. One of the program for teacher training is Master Trainer Faculty Professional Development Program for eight weeks which is still being run continuously at Islamabad under arrangement of Learning Innovation Division since 2003. In the present study, researcher assessed the effectiveness of the training on the participants in different areas. The areas under focus were the extent of knowledge achieved during the program, learning of teaching skills & its application on ground and the change in mindset of teachers during the professional training. The statement of the problem is “Effectiveness of professional development programs on enhancing the knowledge level and changing the professional mindset of university teachers”.

1.2 OBJECTIVES OF THE STUDY

The general objective of the study was to explore the implementation of existing professional development programs for university teachers that focus on enhancement in knowledge level, and change in mindset. The specific objectives were to:-

1. Find out the level of knowledge of university teachers before and after attending the professional development training.

2. Investigate the extent to which professional development practices are implemented by the university teachers who had attended the training courses.
3. Assess whether or not there are positive perceptions towards professional development among university teachers after obtaining the training.
4. Examine the differences in mindset among university teachers who attended the training courses from 2003 to 2011.
5. Compare the mindset of less experienced and more experienced university teachers after attending the professional development training.

1.3 RESEARCH HYPOTHESES

- H₁ It was hypothesized that perception of FPDP-1-13 and FPDP-15-16 participants towards professional development program for university teachers who attended professional development training was positive.
- H₂ There is no difference between the knowledge level of participants of FPDP-15 on professional development training courses as measured before and after training.
- H₃ There was no difference in the mindset score between FPDP-15-16 batches and FPDP-1 to 13 batches after attending the training courses with respect to following constructs: Flexibility, Positivity, Ambition, Honesty, Receptivity, Communication, Collaboration, Patience and Balance.
- H₄ There is no difference between the mindset mean score of less experienced university teachers and more experienced university teachers who attended the Faculty Professional Development Program.

H₅ Mindset, knowledge and perception about professional development has no affect on implementation level of teachers who had attended professional development training.

1.4 SIGNIFICANCE OF THE STUDY

The study may be very helpful in determining the effectiveness of present efforts in the field of teacher education at university level. There is no doubt, that higher education in Pakistan has been improved revolutionary in the last ten years with the efforts of HEC, who has taken it very seriously.

The researcher has taken up the study to see the effectiveness of MT-FPDP which served the purpose of evaluation of university teacher training program. The results of the study have given the effectiveness of present efforts with strengths and weaknesses which will give guidelines to further improve the program. It may provide information to the heads of departments/institutions who have nominated their academics to undergo through long duration training. It will also help the heads of the department and university administration to run such courses at their own as perceived by HEC. If this study finds any positive change it will provide information to HEC regarding the contribution of length of experience in mind change as well as change in the learning and implementation of skills. It will also help the participants to assess their own performance in the light of received training and to improve further in the future. The study will also provide the information on mindset of university teachers in different phases during their career because the study measured the change in mindset of different batches who had attended professional development training in 2003 to 2011. The factors of mindset of teachers under

consideration are Flexibility, Positivity, Ambition, Honesty, Receptivity, Communication, Collaboration, Patience and Balance.

1.5 DELIMITATIONS

Due to various constraints, the study was delimited to:

1. The participants of one batch (28) for pre and post-test evaluation only as the standard paper being administered to all batches.
2. Locally developed instrument to measure the change in mindset of participants of MT-FPDP.

1.6 LIMITATION

In order to evaluate the effectiveness of training, the important component was to get feedback from the students to whom these trainees are teaching, but for this study it was not possible to get the feedback from the students. Due to ex-post facto nature of the study, students have not been included because of the fact that during the PhD research project period same student were not taught by the same teacher and of course the same subject, therefore, before and after comparison with respect to students responses cannot be made.

1.7 ASSUMPTIONS

1. It was assumed that information obtained from MT-FPDP (batches 15&16) will serve as criterion for assessing the change in mindset of previous batches (MT-FPDP-1 to MT-FPDP-13)
2. Learning pedagogical skills is compulsory component for university teachers.

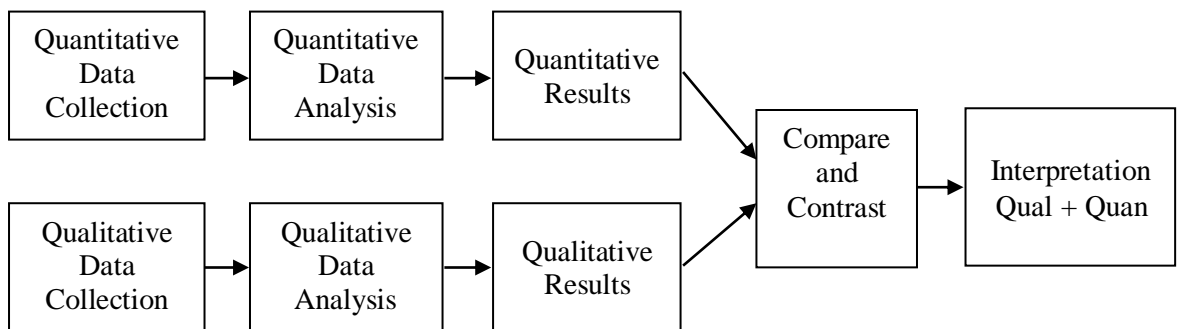
1.8 METHODOLOGY OF THE STUDY

The present study is descriptive in nature in which both qualitative and quantitative approaches were used; in quantitative approach pre-test post-test design was employed whereas in qualitative approach interviews were conducted in order to triangulate the data. The study employed mixed method (both qualitative and quantitative approach). Researchers are more inclined towards quantitative method when testing the hypotheses, but this study demands the feedback of the respondents when they were back in their work place after the training. Also many of them have already got the training therefore ex post facto nature compelled the qualitative component which served the purpose of triangulation.

In descriptive research the most common and well-known approach to mixing methods (Qualitative & Quantitative) is the Triangulation Design (Creswell, Plano Clark, et al., 2003). The purpose of this design is “to obtain different but complementary data on the same topic” (Morse, 1991, p. 122) to best understand the research problem. The advantage of using this design is to bring together the differing strengths and non-overlapping weaknesses of quantitative methods (large sample size, trends, generalization) with those of qualitative methods (small N, details, in depth) (Patton, 1990). This design is normally used to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data. The Triangulation Design is a one-phase design in which researchers implement the quantitative and qualitative methods during the same time frame. Because of the single-phase timing of this design, it has also been referred to as the “concurrent triangulation design” (Creswell, Plano Clark, et al., 2003). It generally involves the concurrent, but separate, collection and analysis of quantitative and qualitative data so that the researcher may best understand the

research problem. The researcher attempts to merge the two data sets, typically by bringing the separate results together in the interpretation or by transforming data to facilitate integrating the two data types during the analysis.

The ultimate aim of this model is to end up with valid and well-substantiated conclusions about a single phenomenon. For example, Anderson, Newell, and Kilcoyne (1999) converged their quantitative survey results with their qualitative focus group findings to better understand the motivations of college student plasma donors.



1.8.1 Population

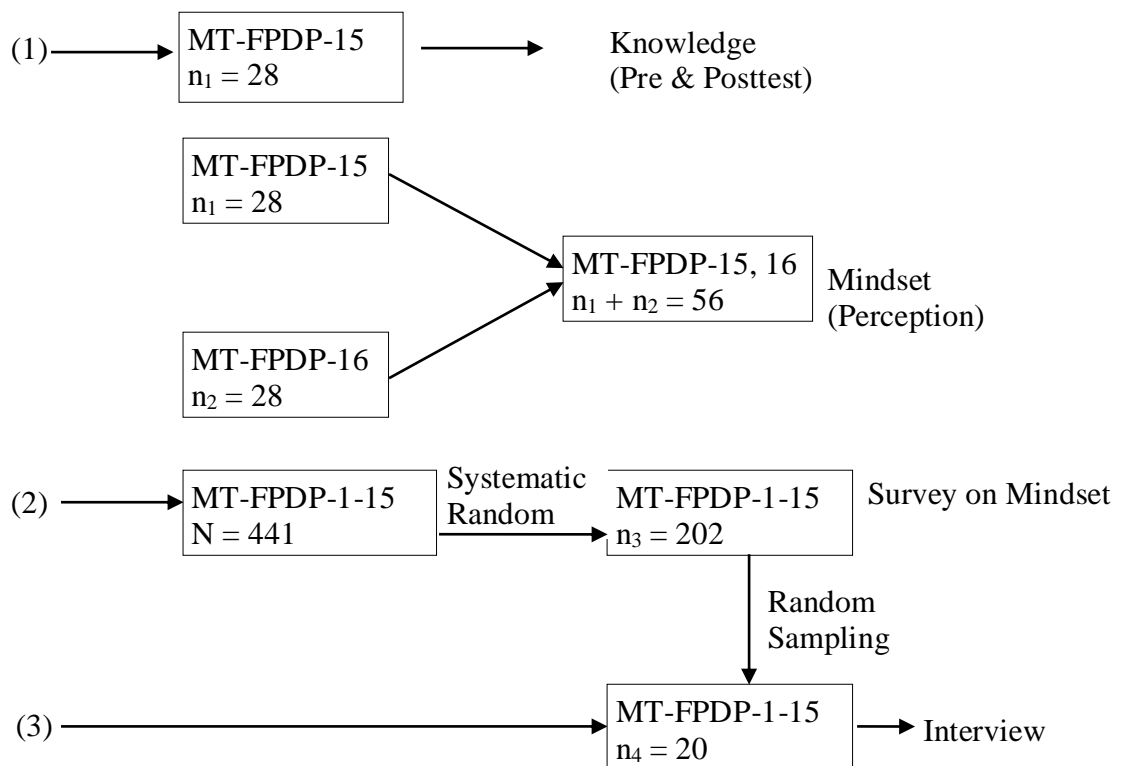
Population of the study comprises of university teachers from seventy five government universities and eighteen private HEC funded universities who participated in MT-FPDP since 2003 till Nov 2011 and the total strength is 469 teachers from ninety three universities of Pakistan. LID asks from the universities to nominate one principal candidate and one alternative candidate with maximum five years of service irrespective of department out of which thirty to thirty five candidates are selected keeping in view the regional and gender ratio.

1.8.2 Sample

Sample of the study was in three layers.

- a. The first layer of sample consisted of MT-FPDP-15 twenty eight teachers for pre & posttest and for mindset comprised of participants of MT-FPDP-15&16 (fifty six teachers from the various universities of Pakistan as per the allocation of seats by HEC).
- b. Second layer of sample for survey data consisted of 202 participants out of total population of 441 from FPDP-1 to FPDP-15 (Gay, 1995).
- c. Final layer of sample for interview consisted of 10% (20) randomly selected out of 202 sampled for survey data.

Sampling Frame



1.8.3 Instrumentation

The instrument included constructs that were used to measure mindset; Flexibility, Positivity, Ambition, Honesty, Receptivity, Communication, Collaboration, Patience and Balance (Elizabeth, 2005). Statements for each domain of the construct were formulated on five point scale. Psychometric principles were considered in the process of development of the scale. Each response category was assigned a scale value. A person's score on the mindset on each statement of the construct was added up to obtain a cumulative score. The higher score was taken as indicative of positive mindset score and vice versa.

In this study following instruments were used:-

- a. Written test
- b. Mindset questionnaire
- c. Survey questionnaire
- d. Interview

The written test was used to measure the effectiveness of training provided by LID. Mindset questionnaire developed by researcher was used to measure the change in mindset of respondents. Survey questionnaire was used to evaluate the extent to which trainee teachers have acquired the knowledge and skills during training. The interview served the purpose of validation of data collected through other instruments. It also provided in depth understanding about the change in mindset and effectiveness of the delivered contents. The detail of each instrument is given as under:

- a. Standard written test prepared by Learning Innovation Division (HEC) for MT-FPDP was used to solve the purpose of Pre & Post testing for quantitative data.

- b. Locally developed Instrument by the researcher with the help of experts, psychologists, educationists and related literature measured the change in mindset of the participants. Instrument was developed on five point rating scale.
- c. Survey instrument for the implementation of acquired knowledge & skills and state of motivation was developed by the researcher on five point rating scale based on the acquired knowledge and skills during the program. This was used to collect the data from participated university teachers.

1.9 DATA COLLECTION

The survey instrument was distributed and collected through department heads of the respective staff members. Pretest and posttest data regarding knowledge level and change in mindset was collected from sample n_1 & n_2 .

1.10 ANALYSIS OF DATA

Quantitative and qualitative analyses were employed. For qualitative data the triangulation method was used to show the credibility of data collected through interview, mindset scale, and survey questionnaire.

Depending on the information obtained, the quantitative data (pretest-posttest scores, change in mindset score) was analyzed by using parametric analysis; t-test and Pearson Moment Correlation Coefficient. These statistical methods were preferred because of the nature of measurement, scale (Interval scale) and relatively large sample using probability sampling techniques (Systematic random sampling) and research hypotheses. Hypotheses were tested on .05 probability level. SPSS-18 was used for testing the hypotheses.

1.11 OPERATIONAL DEFINITIONS

Operation definitions of the terms used in conceptual framework of the study are as under:

1.11.1 Experience

The experience means the job experience of the participating teachers. For this study the participants of MT FPDP 1-10 were considered as more experienced and of MT-FPDP 11-13, 15-16 as less experienced.

1.11.2 Training Batch

The participants of one training course were taken as one training batch for this study.

1.11.3 Knowledge Level

Knowledge level of the participating university teachers was measured by the test developed by LID and is being used as pre and post-test for the training.

1.11.4 Perception

The thinking of participants about the training as measured by researcher developed questionnaire was taken as perception.

1.11.5 Mindset

The mindset is the set of perceptions/beliefs a person has which affects the outcome of all their endeavors.

Constructs of mindset:-

- Flexibility
- Positivity
- Ambition

- Honesty
- Receptivity
- Communication
- Collaboration
- Patience
- Balance

1.11.6 Implementation Level

The change in the thinking of the participants and application of pedagogical skills learned during the training was measured by a questionnaire. It was considered as implementation level for this study.

1.11.7 Professional Development

Professional development is teachers' experience, a vast range of activities and interactions that can increase their knowledge and skills, improve their teaching practice, and contribute to their personal, social and emotional growth.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Programs for the preparation of teachers have had a long history. In every country and community, teachers have been given importance as per the priority of the government of the time. Teachers are trained keeping in view the demands of the society in the different fields and the needs of the students according to the desired skills. Before the planning of teacher training program, it is important to keep in mind the social status of the teacher in that particular community, various roles performed by the teacher in that particular environment and situation and above all the mindset of the trainee teacher.

Teacher education is referred to the policies and procedures designed to train potential teachers with the knowledge, attitudes, behaviors and skills they require to perform their tasks effectively and efficiently in the classroom, school and wider community. The basic aim is to develop an understanding of the theoretical bases of education and its role in society, the factors which influence learning, teaching strategies and educational processes. It involves developing an ability to plan, implement and evaluate learning programs and the assessment & reporting of student achievement.

2.1 HISTORICAL BACKGROUND OF TEACHER EDUCATION

Teaching learning process was started after the creation of first human being in the universe. Being Muslim, God Almighty was the first teacher who taught Adam. All the prophets of God preached while playing the role of a teacher after getting guidance through revealed knowledge. The profession of teaching was at its climax in

the time of Last Prophet (PBUH) when 'Nabvi Mosque' was declared the first university. Worldly knowledge of sciences was being imparted and education was declared compulsory for every male and female. The importance of teaching learning process can be analyzed from the quotes of the Prophet: "Seek knowledge whether you have to go to China" & "The ink of the pen of a scholar is more sacred than the blood of martyr".

Most of human history lies in pre-history, the period before the use of writing skill. In pre-literate societies, education was acquired through demonstration and copying as the young learned from their elders. Rural communities had less resource to expend on education, and there was a lack of commercially available products for schools. Some forms of traditional knowledge were expressed through stories, legends, folklore, rituals, and songs, without the need for a writing system.

In ancient Egypt, literacy was common among educated elite of scribes. Only people from certain specific backgrounds were allowed to train to become scribes, in the service of temple and military authorities. In ancient Israel the Torah (the fundamental religious text) includes commands to read, learn, teach and write the Torah, thus requiring literacy. Emphasis was placed on developing good memory skills in addition to comprehension oral skills. Although girls were not provided with formal education, they were required to know a large part of the subject areas to prepare them to maintain the home after marriage, and to educate the children before the age of seven. Despite this schooling system, it would seem that many children did not learn to read and write, because it has been estimated that "at least ninety percent of the Jewish population of Roman Palestine [in the first centuries AD] could merely write their own name or not write and read at all", or that the literacy rate was about 3 percent.

During the middle ages, the profession of teaching was not given any importance. Graduation from a university in UK was a certificate of admission for teaching. The local and general arts and science curriculum was thought adequate to prepare one to teach. There was no formal training of teachers during this period. Teaching profession was not considered at par with other professions like medicine, law and theology. There was one person, Richard Mulcaster, who took physical steps for teacher training in the reign of Henry VIII and stressed to make teaching as profession at par with other professions (Ornstein & Miller, 1980, p.191).

2.2 APPROACHES TO TEACHER DEVELOPMENT

There are different approaches to teacher training or improving the teaching force. Hargreaves and Fullan (1996) have explained three approaches in chapter one of their book, 'Understanding Teacher Development' which are:-

- Teacher development as knowledge and skill development.
- Teacher development as self-understanding, and
- Teacher development as ecological change.

The first approach deals with providing the opportunity to teachers to equip them with knowledge and skills that will give them the confidence to teach their students in a better way and increases their ability at the same time. There are numerous challenges for the teacher in the classroom which can only be faced if teachers are fully equipped with the knowledge of latest teaching strategies and skills. The achievements of pupils can only be ensured if the teaching force is more skilled and flexible in its teaching strategies.

Teacher development aims at changing the behavior of teachers. Behavior is changed when beliefs are strong. Behaviors and beliefs are closely bound together. To

build the belief there are many contributory factors which play pivotal role. It is not done overnight. Beliefs are made by the efforts of generations after generations. It also involves the place and respect of a teacher in the society. One cannot focus on behavioral skills without basing on attitudes and beliefs.

The context in which teacher development takes place is the base and the success of the program depends on the context. The nature of this context can make and break teacher development efforts. It is important for the teachers to give priority to the understanding to the ecology of the teacher development. The context of teachers' working environment and the context of teaching itself provide conditions in which teacher development initiatives succeed or fail.

The basic indicators of effective approaches to teacher development; they are continuous, build on learners' existing knowledge and skills, and include sufficient intensity and practice that new learning can become part of teachers' ongoing practice. The study of research and experience in staff development (Loucks-Horsley et al. 1987) suggests that programs that effectively support teacher growth have the following characteristics: Content that is either based on research or has demonstrated its effectiveness in classrooms;

- Opportunities for teachers to work together like a team as they learn, plan to use, and implement their new knowledge and practices;
- Opportunities for teachers to participate in decisions about what all and how they will learn and how they will implement what they learn;
- Norms that support experimentation;
- Time for teachers to participate fully in the learning experience, to practice, to master new behaviors, and to incorporate new practices into their teaching routines;

- Integration of staff development into other initiatives of the institution, with a connection between individual and organizational goals;
- Leadership that provides direction and clear expectations, coupled with ongoing support for teachers to learn and to implement what they learn;
- Appropriate and sufficient incentives; and
- Designs based on knowledge about learning and the process of change being continuous phenomena.

A constructivist-driven teacher development model (unlike traditional) suggests that we view the teacher development process, from beginning coursework through in-service opportunities, from a constructivist perspective that encourages teachers to explore, experience, and incorporate new strategies. Teachers need to decide when, how, and under what conditions these new strategies should be used. This approach prepares teachers to deal with increasing classroom diversity (wide range of students) and a multitude of daily on spot decisions.

1. **Attention should be paid to prior teacher knowledge.**

Teachers at all levels of preparation come to teaching with their own specific experiences and observations of what works with children of different ages, what should be taught, and what instructional strategies work the best. Pre service teachers, for example, may assume that engaging students with a good dose of creativity and enthusiasm is itself enough to ignite the learning curiosity. Experienced teachers may accept that engagement is essential to good learning but might also believe that reading about science qualifies as a stand-in for the exploration stage of the learning model. How can we begin to help teachers actively reconstruct their views about teaching and learning

science if we don't attempt to pinpoint the prior knowledge teachers bring with them?

2. **Concepts should be developed and introduced over sufficient periods of time.**

Just reading or listening about new concepts is rarely enough to advance authentic learning. Teachers need to participate in multiple, interactive, collaborative experiences to polish their skills. For example, rather than learn about the topic of pond life through discussion method, teachers can work in small groups to share what they know and then, visiting an actual pond, work together to reconstruct their views. This type of learning will allow them to develop their understanding of such concepts as diversity and systems over time.

3. **Theory should be tied to experience by using learning activities that make abstract concepts personal.**

Such experiences are the catalysts that help teachers learn. Follow this with activities that give teachers time to reflect on their experiences. Then introduce new information that prompts teachers to focus on the formation of abstract concepts and generations. To continue with same pond life example, teachers can design aquariums for their classrooms so they (and their students) can observe and answer questions that relate to pond life. They can also divide readings, relate the readings to what they observe, and share their findings with each other. Concept development continues in this phase as teachers digest new information. The teacher slowly adds fuel as discussions turn to formal theories such as food webs, interdependency of pond organisms, ecosystem factors that enable pond life, and so on. Learners can personally

experience concepts when the methods of experiential engagement and exploration, along with theory conceptualization and the pedagogical techniques of small working groups, are employed.

4. **In the final step, teachers should have opportunities to try out developing concepts by making multiple applications in their classrooms.**

Teachers need the chance to experiment with new concepts and techniques with their students for which initiative must be given. At meetings held after their trials, teachers can compare successes and strategies about back-to-the-drawing-board activities and can also note weaknesses if any.

5. **As a follow-up, a long-term plan should be instituted for supporting novices.**

Give teachers a voice in how this process wins work. They may elect to form support or check-in groups, designate those who are most expert as mentors, or continue to refine applications with their original work group.

In addition to above mentioned approaches schools and districts can choose among several approaches for teacher development that can incorporate these training programs.

- **Training with coaching.** Most frequently equated with staff development, this approach can result in demonstrable changes in teacher behavior and, subsequently, in the behaviors of children. The model includes development of the theory and rationale behind the new behaviors to be learned, demonstration or modeling, practice in training settings, and guided practice or peer coaching in the classroom with supportive feedback from a colleague. The process of peer coaching is particularly important in helping teachers change their teaching practices, in providing them with opportunities to discuss their

changing ideas about teaching, and in giving them the psychological support they need to persist in learning (Joyce and Showers 1988).

- **Observation and assessment.** This approach involves careful and keen observation of teaching with attention to certain behaviors and an open discussion of the results. Teachers agree on a focus for the observations, with the observer recording behaviors as these occur. A conference follows, in which the observations are discussed, strengths and weaknesses assessed, and goals set for the future. Both the observed teacher and the observer can gain insight into effective pedagogy and how to incorporate it into daily teaching practice.
- **Inquiry.** This approach incorporates such practices as action research and reflective inquiry. Teachers, alone or collaboratively, decide what problem or situation they are interested in examining, gather and analyze data, and interpret the results in light of changes they might make in their classrooms or in school practice.
- **Individually guided staff development.** In this approach, teachers, individually or as teams, identify their interests and concerns; establish a goal; and seek input by way of coursework, workshops, library research, field trips, and other forms of self-study to achieve the goal. These approaches to staff development can complement, and in some cases replace, the traditional in-service workshop. When well designed, they can help teachers increase their knowledge of science, learning, and teaching in ways that they can apply directly to classroom teaching.

2.3 OPPORTUNITIES FOR TEACHER DEVELOPMENT

Craft (2000) in her book 'Continuing Professional Development' has discussed various methods of professional learning which are as follows:-

- Action research
- Self-directed study
- Using distance-learning material
- Receiving and/or giving on-the-job coaching
- School based and off-site courses
- Job shadowing and role rotation
- Peer networks
- School cluster projects
- Personal reflection
- Experimental assignments

2.4 TEACHING BELIEFS, PRACTICES AND STRATEGIES

All teachers hold personal conceptions and approaches to teaching resulting from their own specific experiences as students and teachers (Dall' Alba, 1991; Pratt, 1992; Ramsden, 2003; Samuelowicz & Bain, 2001). Studies on teachers' approaches to teaching identify two qualitatively different categories. The 'learning-focused' approach is about teaching as facilitating students' learning and learning is taken as knowledge construction, while the 'content-focused' approach concerns teaching as transmission of knowledge and learning as absorbing the transmitted information (Kember & Kwan, 2000; Prosser & Trigwell, 1997; Trigwell, Prosser & Waterhouse, 1999). Among these, Kember and Kwan (2000) identified four subcategories of teaching: teaching as transmitting information; teaching as making information

accessible to students; teaching as meeting learning needs; and teaching as facilitating students to become independent learners. Each of these conceptions is manifested through teacher behavior such as motivational approaches, teaching strategies, attention to and engagement with students, and assessment practices.

Åkerlind (2005) opines that individual academics experience the world of teaching differently and therefore have different conceptions of it. She states that a teacher-centered focus is seen across the range of studies as constituting a less sophisticated view of teaching than a learner-centered focus, and is regarded as less likely to produce high-quality learning outcomes amongst students. She also suggests that teacher-centered approaches and student-centered approaches do not constitute two different categories, but rather that they relate to each other, in the same way as there is a relationship between conceptions of teaching and learning (Åkerlind, 2003).

The debate on the idea of considering whether student-centered and teacher-centered approaches represent two ends of one continuum or whether they are separate categories has also been investigated by Postareff, Lindblom-Ylänne and Nevgi (2008). In their opinion, the latter view emphasises that a student-centered teacher might sometimes use features that are typical of teacher-centered teaching depending on the teaching context. However, a corresponding relationship in the opposite direction is not possible.

Some studies have explained the relationship between teachers' conceptions and student learning (Hanbury, Prosser & Rickinson, 2008; Kember & Gow, 1994; Trigwell, Prosser & Waterhouse, 1999) or focused on the university teachers' experience of change in their understanding of the subject matter (Trigwell et al., 2005). Few have linked the perceptions of the teaching environment or the disciplines with approaches to teaching (Prosser & Trigwell, 1997; Lindblom-Ylänne et al.,

2007) and maintain that changes in the teachers' teaching and learning environment prompt new concerns and changes in teaching practices. Finally, research also investigated the relationship between the teachers' initial training and their approaches to teaching and learning (Gibbs & Coffey, 2004). All agree that teaching approaches are manifestation of the teachers' conceptions, practices and beliefs, mainly in interaction with their students but also as a reflection of their attitudes and skills when working with other colleagues, at a particular point of time and a specific context.

Teachers' educational beliefs also influence and determine the teaching behavior. According to Marcelo (1987), some teachers experience conflicts between their beliefs and their behavior in class; consequently, their behavior does not correspond to their beliefs and vice versa. This view is supported by Samuelowicz and Bain (2001), who claim that teachers have 'ideal' conceptions of teaching and 'working' conceptions of teaching; therefore, even if they believe that student-centered approaches are best, they may not act on this belief. It is likely that during the initial years of teaching, educational beliefs and classroom behavior may conflict. With the passage of time, teachers are likely to strengthen their beliefs, which may also result in an increased consistency with their teaching behavior. Consistency between beliefs and behavior is also increased if beliefs are adjusted towards behavior.

Many studies support the idea that changes in teacher beliefs and behavior and student learning approaches occur over time (Cilliers & Herman, 2010; Hanbury, Prosser & Rickinson, 2008; Ho, 2000). Ho (2000) and Kember and Kwan (2000) conclude that changes in teacher's conceptions of teaching are necessary before

changes in teacher behavior towards more student oriented approaches can be expected.

Norton et al. (2005) maintains that teaching intentions are a compromise between teachers' conceptions of teaching and their academic and social contexts. In accordance to this, Eley (2006) adds that the link between teachers' conceptions and teaching practice is fragile and that the relationship is one of espoused conceptions and reported approaches. Kane et al. (2002) cautions that the connection between teachers' beliefs and their actions must be viewed as uncertain since few studies provide sufficient evidence of changes in classroom practice.

In her study of the changes in teaching throughout academics' professional careers at two universities in Catalonia (Spain), Feixas (2010) focused on the effects of teacher preparation on pedagogic understandings and orientation, as well as on changes in teachers' approaches to and conceptions of teaching and learning. Results suggest that some teachers were clearly and systematically either learning or content focused but most teachers reported a hybrid approach to teaching. To conclude, all these studies report the idea that change is a natural and continuous process, it is developmental and occurs over time. Practice changes before beliefs do and that it is a strictly personal experience conditioned by the teachers' academic and social context.

2.5 PHASES OF DEVELOPMENT OF UNIVERSITY TEACHERS

Most of the universities offer professional development activities designed for new staff, and the aim is to develop advanced expertise and leadership skills in university teaching roles. Through a combination of seminars, discussions and practical activities such as peer review of teaching and reflective portfolios, participants gain insight into principles and theories of effective university teaching.

In addition to their primary goal of developing teachers' repertoire of skills in teaching (course planning, teaching, assessing), professional development programs promote the scholarship of teaching and learning (Boyer, 1990) and aim "to infuse teaching with scholarly qualities in order to enhance learning" (Brew & Ginns, 2008, p. 535). Teacher development programs induce good teaching practices designed to promote good student learning and engagement. Good teaching and good learning are linked to the students' experience of what teachers do in classrooms.

As Ramsden (2003) points out, "we cannot teach better unless we are able to see what we are doing from their point of view" (p.84). It is important therefore that professional development programs focus on approaches that foster 'scholarly teaching' and 'excellent teaching' (Healy, 2003).

The post-experience programs may also be reinforced with other dynamic measures such as specific teaching staff development activities including systematic mentoring, observation-based video feedback, action research and work-based learning to enable participants to develop subject-specific pedagogical practices. Additionally, they promote the creation and consolidation of professional communities of practice to support the application of disciplinary and pedagogical knowledge and skills among peers.

Teachers developing approaches to teaching may be associated with the stages of their professional development, from less sophisticated conceptions and strategies to more sophisticated ones. According to Kugel (1993), Nyquist and Sprague (1998) and Robertson (1999), university teacher development has a sequential and progressive structure. The theoretical perspective in Kugel's work assumes that knowing the content and presenting it in a fluid way is sufficient for good teaching (what do I want to teach or what can I teach?). The theoretical perspective adopted by

Nyquist and Sprague complements this picture with additional skills and improved teaching strategies (how can I teach better?). The third perspective (in Robertson's study) presupposes prior competences and understands teaching as a process aimed at changing teaching conceptions and helping students to develop their own rationale (what do students need to learn?). Kugel's development schema (1993) describes five stages in the development of a university teacher and explores what happens within each stage and in the transition process from one stage to the next. Stages 1 – 3 comprise a single phase in which academics work on different aspects of teaching or presenting the material, while in the second phase, there is a shift in the focus from teachers' teaching towards students' learning. Similarly, Nyquist and Sprague's scheme (1998) underlines a shift in the development of beginning teachers from the emphasis on the self (stage 1) to the skills (stage 2) to the student (stage 3). Changes in the development of beginning teachers are described according to four dimensions: concerns, discourse level, relationship with students and relationship with authority. They conceive the development as occurring in a three-stage process.

While Kugel (1993) and Nyquist and Sprague (1998) focus on how new university teachers go through phases of development and their implications for staff development. Robertson (1999) analyses each of the phases of the development process of professor-as-teacher. According to Robertson (1999), there are three different perspectives regarding how academics view their work as teachers, which are organised as they usually appear in the teachers' development process: egocentrism (focused on the teacher), aliocentrism (focused on the student) and system centrism (focused on the student and the teacher).

In an attempt to highlight, Feixas (2010) identified three different approaches to developing as a university teacher and suggested that these are hierarchical with each phase building on the achievement of the previous. The phases are:

- a) A focus on self and surviving the first teaching semester which leads to improving content knowledge or what to teach,
- b) A focus on improving the repertoire of strategies in order to gain experience in how to teach more effectively, and
- c) A focus on reflecting on what works and why in order to effectively facilitate student learning.

The previously espoused theory (Feixas, 2010; Kugel, 1993; Nyquist & Sprague, 1998; Robertson, 1999) states that academics' approaches to teaching and learning develop in pedagogical phases and gradually shift from a focus on self, to a focus on teaching until teachers adopt the perspective of the students' learning approach. This suggests a progression in teachers' beliefs in their approaches to teaching and learning and an improvement in the sophistication of teaching strategies, leading to deeper engagement with students. Teachers' beliefs are also affected by personal and contextual factors related to their professional pathway (e.g., including experiences with various teaching models, teaching working culture, own teaching philosophy, pedagogical training). Feixas (2004) concludes that it is impossible to claim that all teachers can reach a teaching approach focused on the students' learning, unless they undergo extensive pedagogical training. Teaching preparation courses do have an influence on teaching conceptions and behavior but there are many other variables to be controlled for to support efficient changes in teaching practices.

2.6 HOW ACADEMICS LEARN TO BECOME EFFECTIVE TEACHERS?

Irrespective of the age, human learning is based on a common set of principles. While adults have more life experience to draw from than younger learners and are often clearer about what they want to learn as per the importance but the means by which the learning occurs is remarkably similar. Learning is experience plus reflection (Handy, 2006), and the ability to acquire new ideas from experience and retain them in the memory (Kandel, 2007). Learning is organic, sometimes incidental, not highly structured; it only partly happens in the formal setting or classroom, it is more or less intentional and driven by the learner. Learning also happens unintentionally in informal manner while working (Marsick & Watkins, 1990).

According to Vermunt and Endedijk's (2011) review, teachers employ a great variety of learning activities, regulate their learning in different ways and report a great variety in learning outcomes. This may include different kinds of teaching practices, beliefs about learning & teaching and behavioural intentions. Teachers learn from their own practical experience (Eraut, 2007; Kolb, 1984) and enhance their learning in the workplace in collaboration with their peers and students.

Deep approaches to learning have to be considered in the design of teachers' training to enhance academics' learning processes. There are some implications in doing so. First, teaching and learning methods should support the aims and intended outcomes of the program. Learning methods used in professional development should mirror the methods which teachers are expected to use with their students as closely as possible. Second, teaching should make the structure of the topic explicit, and should elicit active responses, confront and eradicate misconceptions, and build on

what teachers already know. Finally, teaching should promote deep rather than surface learning.

Teachers develop through a cycle of continuing reflection and through conventional forms of staff development (e.g., workshops and conferences). They also learn through informal forms of training (including peer review, reading, sharing within their communities of practice). These forms of learning should be enhanced by capturing what teachers learn from these activities and by exploring in their own teaching context how they might test and apply what they have learnt. Series of opportunities to reflect with colleagues from different disciplines can contribute to enhancing the scholarship of teaching and learning.

In short, staff development units should expose teachers to challenging experiences, support them to reflect on their learning of such experiences, and help them to apply and test their learning. Sharing practical experiences and ideas both within the workplace and within the larger community can lead to better understanding of various teaching contexts.

2.7 DEVELOPMENT PROGRAM IMPACT

Research into teachers' learning over the last decades has repeatedly shown the existence of qualitatively different pedagogical models in the manner teachers learn. However, empirical evidence of the effectiveness of these models is rare (Grossman, 2005). For last few years, academics have learnt to become teachers by applying the models they had experienced, thus their teaching approach has been content-centered rather than student-focused. Academics must begin to think about teaching and learning differently, in a scholarly way (Ramsden, 2003) in order to challenge their long-held conceptions. McAlpine and Weston (2000) and Norton et al.

(2005) agree in fundamental changes to the quality of university teaching which can only come about by changing teachers' underlying conceptions of teaching and learning.

Knight (2006) states that teaching training programs which are based on Conceptual Change Models can be effective in shifting teachers' beliefs from a teacher-centered to a more student-focused approach. These changed conceptions have the potential to move students' learning from surface approaches to approaches which focus on understanding and conceptualization of new realities which are more likely to promote deep learning (Hanbury et al., 2008).

In the past, systematic impact evaluation of educational development has not been common or very superficial (Kreber & Brook, 2001). Evaluation was rather descriptive than evaluative (Gilbert & Gibbs, 1998) and usually restricted to immediate event evaluation of participants' satisfaction. However, in recent years, research on the impact of pedagogical training is reporting gains in changing teachers' behaviour and conceptions (Gibbs & Coffey, 2004; Lindblom-Ylänne et al., 2006; Postareff, Lindblom-Ylänne & Nevgi, 2007; Stes, Clement & Van Petegem, 2007; Stes, Min-Leliveld, Gijbels & Van Petegem, 2010).

Professional development programs can lead to changed conceptions of teaching with consequential changes in teaching practices and student approaches to learning over time (Ho, 2000; Stes et al., 2007). Stes et al. (2007), Postareff et al. (2007) and Feixas (2010) also confirmed that in general academics who participate in extended pedagogical training which challenges conceptions of teaching demonstrate positive self-efficacy beliefs considerably more than those who take short courses that can remain uncertain about their understandings of teaching and their abilities.

Still, while there appears to be tentative evidences that professional development programs can lead to changes, conclusions from research have to be drawn with caution. In fact, learning is a complex and challenging business that takes place in different ways, in different contexts. Many factors encourage or inhibit learning and these will vary from learner to learner, depending upon purpose and environment. A study of the impact of pedagogical training into the classroom can be approached differently according to the objective. Kirkpatrick's (1998) evaluation model essentially measures reaction, learning, application and impact whereas Holton, Bates and Ruona (2000) explore a model diagnosing the system of factors influencing learning transfer.

In the context of higher education, Feixas and Zellweger (2010) found that factors influencing learning transfer from teachers' development programs can be classified into those related to the training's design, to the individual teacher and to the workplace context. More specifically, individual factors relate to motivation, self-efficacy and performance expectations to transfer. Contextual factors consider the resources and opportunities of the learning environment, peer support, supervisor support, students' feedback, the workplace teaching and learning culture and resistances to change. Assessing learning transfer from a holistic perspective can shed new light into the arguments supporting pedagogical training for university teachers.

2.8 PLACE OF RESEARCH IN REFORM IN TEACHER EDUCATION

Globally teacher education has been a focal point of discourse on educational reforms. Research in the field of teacher education got intensified, particularly in developed countries and as a result, an impressive body of good quality knowledge on teacher learning and development is available. This research knowledge has helped in

many countries in transforming policy and practice of teacher education. Unfortunately, teacher education in Pakistan has distanced itself from global trends in thinking about reforms in teacher education. In Pakistan, Faculty/Department of education at public sector universities and other leading institutions such as Institute for Educational Research (IER), Provincial Institute of Teacher Education, Bureau of Curriculum, Education Planning and Management are expected to direct their resources and efforts for research intended at generation of useful knowledge. In fact, they seem to have failed to contribute to development of teacher education in the country through quality research output and dissemination. These institutions receive substantial funds from federal or provincial governments to promote research and disseminate lessons learnt. Apparently there is no good reason as why these institutions, particularly the departments or faculties of education at universities do not become models of good practice in the area of research as well as academic programs.

In fact, these institutions are not being held accountable for what they receive in terms of resources and what they deliver. There should not be any doubt that without these forms of public accountability, improvement in the status of teacher education would continue to remain a utopian dream.

2.9 PRIVATE SECTOR AND TEACHER EDUCATION

There is a growing emphasis on the participation of private sector (Government of Pakistan, 2009, 2006a; 2004a; 2002a; Gulzar, Bari & Ejaz, 2005; World Bank, 1996), resultantly; private sector is increasingly becoming a major player in teacher education; the trend however is commercialization of teacher education. Only a few institutions in the private sector are recognized for designing

and delivering quality pre-service and in-service training programs based on state-of-the-art knowledge of the practice and profession of teaching. These institutions are trying to promote teaching and learning practices in the classroom that are participatory, more interactive, which focus on fostering conceptual understanding, critical thinking, and problem solving skills (Saleem, 2009; Kazilbash, 1998; UNESCO, 2006c). There has been an obvious lack of efforts and coordination on the part of government to learn from the work undertaken by the private sector. The government system can adopt innovative models and approaches to teacher education successfully tested in the private sector. To sum up the above reflections, some of the major problems facing education system in Pakistan owe their origin to the critical deficiencies in the system of teacher education. The factors contributing to deficient teacher education system are complex, multilayered and intricately interlinked. However, at fundamental level critical deficiencies in teacher education have their roots in the acute lack of will of political leadership to reform the system which has resulted in the huge gap between policies and actual implementation of policies.

Policies are stuffed with false promises or lofty claims about improving the system of teacher education. The areas identified or targets or goals set for interventions are either too many or unachievable within the limits of given resources and timeline. A closer look at the successive education policies reveals a serious lack of connection between policy recommendations and actual action plan to implement these recommendations.

2.10 TEACHER EDUCATION – PAKISTANI VERSUS INTERNATIONAL REFORM

Teacher education is always a complex, multifaceted and ever changing field. The concern for the quality of Education calls for a more demanding vision of teaching and teacher education in any country in the world. A comparative overview of the literature on teacher education in Pakistan and international context recognizes a few critical gaps in the understanding and practices of teacher education in Pakistan. In Pakistan there seems to be a considerable shift in thinking about school educational improvement and teacher's pivotal role in it. In recognition of teachers 'strategic role in school reform effort, which has been consistently recognized throughout successive National Education Policies, teacher education has been considered a key area of the reform. All reports produced by government recognize teacher's pivotal role in school reform and emphasize efforts to enhance the status of teachers and teaching profession at large. This emphasis is very much consistent with the international literature on teachers 'role in educational change and school improvement. Educational change depends on what teachers do and thin, Fullan (1991, p.117), opines.

In fact, a critical look at the native literature's attempt at depicting teacher education clearly reflects a narrow focus in that the literature tends to over emphasize the structural and organizational issue, and there is a clear tendency to overlook the conceptual and pedagogical underpinnings to teacher education practices. Moreover, the discourse on teacher education tends to stress upon the technical aspect of teaching, which involves subject knowledge and a fixed set of skills required to transfer that knowledge to students. Other critical dimensions of teacher education, emphasized in the international literature, including personal, social, and moral seem to have received little or no attention. The literature on teacher education in Pakistan

appears to be heavily influenced by the theories and assumptions that underpin the traditional transmission paradigm of teacher education and development, which regards teaching as an individually centered, culturally and socially neutral kind of activity aiming at the transmission of knowledge (Cole & Knowles, 2000; Joyce, 1987; Little, 1993). The "technical paradigm" (Frechner, 1983; Levine, 2006; Lewin & Stuart, 2003) implies that the process of becoming a teacher is simply learning to teach. This view considers teaching as a technical activity, and the role of the teacher as a technician is to equip himself or herself with the necessary knowledge and skills required by the teaching task (Dewey, 1964; Cocheran-Smith & Fires, 2001; Valli, 1990). Such a view of teacher education and development tends to focus on the acquisition of teaching skills required to deal with routines situations inside the classroom. However, this view fails to recognize the dynamics of the classroom, complex realities of the school, teachers 'personal make up, life and family circumstances. As Valli (1990) argues, Life in classroom is dynamic and uncertain, that answers to teaching problems are not a simple process of rule application, and that teachers must exercise wisdom of practice (p.38). Similarly, Dewey (1964) has also stressed, Education programs should produce students of teaching who are thoughtful about educational theory and principles rather than skill only in the routines, mere technician, copiers, and followers of tradition and example (p. 38). The typical pre-service teacher education programs in Pakistan appear to be heavily influenced by the theories and assumption that underpin the technical paradigm widely criticized in the international literature.

On the other hand, the emerging paradigms within teacher education and professional development such as reflective practice (Schon, 1983) and inquiry (e.g. Joyce, 1988; Dawson, 2006), lifelong learning (Longworth & Davies, 1996; Thiessen,

& Pike 1992), view the teacher as an active agent in his or her own development. They aim at developing inquiry attitude as well as practical skills in teachers. A teacher is expected to be aware of the origins and the consequences of his or her own decisions, actions, behaviors and the realities that may constraint these actions (Luke & McArdle, 2009). The greater is the likelihood that the teacher can control and change both actions and the constraints and solve problems associated with pedagogy and educational change. The classroom is an extremely complex place requiring vast teacher knowledge and understanding as well as skills and abilities in coping with rising problems. Because given the nature of their work, teachers are not to be dependent on a fixed body of knowledge of teaching and technical skills which they acquire participating in teacher development programs; and teachers' experiences in different work contexts are the sources from where teachers can derive new insights and understanding (Darling- Hammond, 2002; Lawton, 1996).

Moreover, the growing body of research on teacher change and development suggests that problems that complicate teacher's work in the classroom do not exist in isolation; they are intricately interlinked. Teachers' life and work are socially constructed and powerfully influenced by the choices and constraints of the larger society (Bottery, 2006; Darling-Hammond, 1996; Hargreaves, 1997). Researchers and change leading theorists stress the importance of broadening our approach to educational change and school improvement. This requires to diversifying teachers' role in change by extending teachers 'work beyond the school into homes, communities and workplaces (Hargreaves, 1999, Fullan, 2001). Teachers are required to see themselves at the heart of any project to improve school and society (Thiessen, 1993, 297).

The literature also recognizes the contextualized and personalized nature of teacher's knowledge, influences of biographies on teaching practices and teachers using ways of thinking and method of teaching inherited from their teachers and school experiences (Beattie, 2001; Boyle, While & Boyle, 2003; Cole & Knowles, 2000; Clandinin & Connelly, 1995; Marshall, 2009; Thiessen & Kilcher, 1993). Studies conducted in Pakistan confirm the findings of similar studies from the international contexts, which have found teachers as being the product of various influences of their socio-economic, religious and cultural structures (e.g., Ali, 2007; Ashraf, 2004; Bashiruddin, 2003; Halai, 2001; Fred, 2000; Matice, 2002; Rizvi, 2004).

The above perspectives suggest that teacher education system can be better understood in the light of particular culture and society; what happens outside the school is more important than what happens inside because it shapes and influences what takes place inside the school. This underscores the need for recognizing the links between political, socio-economic contexts and teacher education, thus necessitating the need for in depth understanding of the forces, factors and the nation's character, socio-cultural philosophy that shape the nation's teacher education system, within which teachers learn, develop and work. Hence, in the final analysis, educational, political and social problems are inseparable; requiring deeper understanding of culture and context. It also requires attention to political factors and other variations in national efforts to promote new forms of practice in educational improvement in schools through new modalities in teacher education. There is a wide agreement on the view that teacher possesses a unique set of personality traits and pattern of behaviors. Teacher's total personality is shaped by prior life experiences and social circumstances in which he or she lives. Teacher's pedagogical beliefs, behaviors and

practices are grounded in his or her unique personality. In this context, teacher education and development may be regarded as individual development and to a great extent it is affected by the social-cultural and political forces and as well as the various encounters teachers' experiences in their daily lives. Hargreaves (1991a pp. 255-256) argues the holistic change of the teachers' personality, mindset, attitude and knowledge. Analysis of approach to teacher development in Pakistan has overlooked the perspective on the influences personal and biographical factors exert on teacher change.

2.11 THE PROFESSIONAL DEVELOPMENT MINDSET

It is important to define the mindset first then its relationship with personal and professional development. "The set of beliefs a person has which affects the outcome of all their endeavors" (Rader II, 2008).

Our performance in every job is dependent on our aptitude and mindset. Where aptitude is positive our performance is good and where our aptitude is not supportive and we have to undergo some assignment against our will, our performance is not good. Mindset encourages us to maintain our performance on one hand and helps us to improve further on the other hand. (Elizabeth, 2005, p.136)

Elizabeth has mentioned the factors which indicate the presence of a state of mind that is open to personal and professional development include:

- A willingness to seek out learning opportunities
- A willingness to see positive learning potential in all aspects of life
- An affinity with the process of reflecting on learning and change

- An overriding learning towards curiosity about, rather than resistance to, change She has further listed key factors in nurturing the mindset for development include:-
 - Flexibility
 - Positivity
 - Ambition
 - Honesty
 - Receptivity
 - Communication
 - Collaboration
 - Patience
 - Balance

Seyoum (2011) while endorsing the Guskey (2000) point of view on the need for professional development of teachers for educational reforms stated, "in the present view, this goal can only be realized by ensuring that teachers are equipped with subject matter knowledge and an evidence-and-standards-based repertoire of pedagogical skills" (p.381). Seyoum (2011) in his study on the professional development programs in Ethiopian Higher Education Institutions surveyed probability and non-probability sample of 40 university staff members who got professional training, and eight training facilitator Data were collected through questionnaire, interview, and from document Product Moment Correlation, Coefficient ($r = .54$, $\alpha .01$) revealed that perception of staff members who participated in professional training was significantly correlated with' their performance in teaching. In another study conducted by Minale (2006) on Higher Diploma Program for professional development at AAU found that with the

acquisition of new knowledge; and skills the university teachers reported behavioral changes after the training. The findings of a study (Wossenu, 2009) concluded that most of the teachers of higher education learn teaching skills from experiences. It implies that learning of teaching skills without having basic theoretical knowledge of teaching could probably instill unacceptable skills.

A number of research studies (Seyoum, 2011; Komba & Nkumbi, 2008; Fekadu, 2008; Lesseing & De Witt, 2007) have reported positive attitude of university teachers towards professional training. On the basis of the, findings of these studies it can be inferred that professional development has the potential to make university teachers equipped with the necessary pedagogical skills and keep them up-to-date to cope up with the current technology.

It is assumed that change in mindset improves actual practice (implementation) and consequently productivity. This change process leads toward progress and the progress is seen as a transformation from one state to better state. This change ultimately is called improvement and requires from an individual to see things from new angles. Dweck (2008) argued that anyone can change his / her mindset at any age or at any stage in life. It implies that mindset is not permanent and that mindset has direct relation with productivity and positive mindset improves the productivity. Smith and Holfer (2003) concluded in a study of 100 basic education teachers that experience in the field contributed towards the amount of change in teachers. They reported that teachers with less length of service experience changed more after attending professional development programs. It is assumed after reviewing the related literature and research studies that a basic premise of professional development is to equip the faculty members with the necessary

professional knowledge and skills in their years of their teaching career for teacher change.

The Mindset Works is a set of resources developed to provide teachers and administrators with the growth mindset knowledge and tools to help them support their students' learning and success. The Mindset Works contains three main components:

1. **Professional Development** - *“Mindsets & Motivation” online professional development course for educators*: The professional development is an online multimedia course for educators to learn about the growth mindset and how to put it to practice. It includes 5 brief (approx. 15-minute) video modules that introduce teachers to relevant findings from psychology and neuroscience. Teachers explore applications of mindset theory to classroom practice, with specific growth-mindset instructional strategies.
2. **Educator Toolkit**: To support continued growth, educators can find interactive tools and resources to support their own process of adopting and implementing a growth mindset over time in their classroom and school. The Toolkit includes online tools for educators to plan, assess and learn about their own mindset-related beliefs and practices at the individual, classroom, and school level, and activities for students to practice and monitor their use of growth mindset strategies, including real-time data reporting.
3. **Growth Mindset Online Community**: As members of the Online Community, educators can collaborate with colleagues near and far who are learning and pursuing growth mindset-based practices. This community connects a network of informed educators to help develop and disseminate knowledge about implementing the growth mindset in schools. It includes

private and public topical discussion forums and groups to foster innovation in practice where teachers can pose questions and share experiences, ideas, tools and resources with their peers and a blog with content contributed by experts and practitioners.

Mindset is defined as a particular way of thinking: a person's set of opinions about something. There are two types of mindsets the growth and fixed. As the type growth indicate towards the change in the mindset, so it is evident that the mindset can be changed, whereas some people may have fixed one. The change can occur in many ways but the important steps to develop the right mindset are:

1. Get the Best Information Only
2. Role Model the Best People
3. Examine Your Current Beliefs
4. Shape Your Mindset with Vision and Goals
5. Find Your Voice
6. Protect Your Mindset

These steps are integrated in the MT-FPDP trainings, focusing more on role model, examination of beliefs and shape your vision and goals. Therefore it was perceived that the training may have effect on the mindset of the university teachers.

2.12 HOW TEACHERS CHANGE?

Teachers don't change. They resist change. They just get in a groove of doing what they have always done and what they are comfortable with." The notion that teachers don't change does not match my experiences. I am a teacher, a teacher-educator, a supervisor of student teaching, a researcher, and have spent considerable time observing teachers in their classrooms. I have observed teachers in such diverse

locations. The teachers I worked with in these places were not teaching exactly the same way they did the previous year; nor do I as a teacher-educator. In fact, teachers change all the time.

Where, then, did the view come from that teachers resist change? And how can this view co-exist with the notion that teachers change all the time? The differences between these two views of teacher change may hinge on who is directing the change. Teachers often resist change suggested by others, but they do engage in change that they initiate: what I call voluntary change.

2.12.1 Change Hurts

Teachers do not change, that change hurts and that is why people do not change, and that teachers are recalcitrant (e.g., Duffy & Roehler, 1986; Fullan, 1991). The literature suggests that teachers resist doing whatever is being proposed because they want to cling to their old ways. Change makes people feel uncomfortable. This view of change in teaching practice dominated the educational literature until the early 1990s. It focuses on the failure of teachers to adopt teaching activities, practices, and curricula that are suggested or mandated by those who are external to the setting in which the teaching is taking place: administrators, policy-makers, and staff developers. The view of the teacher as reluctant to change is strong and widespread, and is being expressed by many teachers as well. It is promulgated by those who think they know what teachers should be doing in the classroom and are in a position to tell them what to do. In that sense, it relates to issues of power (Wasley, 1992). As pointed out by Morimoto (1973): "When change is advocated or demanded by another person, we feel threatened, defensive, and perhaps rushed. We are then without the freedom and the time to understand and to affirm the new learning as something

desirable, and as something of our own choosing. Pressure to change, without an opportunity for exploration and choice, seldom results in experiences of joy and excitement in learning" (p. 255).

2.12.2 Voluntary Change

These changes, while often minor adjustments can be dramatic (Richardson, 1990). In a long-term collaborative study of teacher change, my colleagues and I found that when a teacher tries new activities, she assesses them on the basis of whether they work: whether they fit within her set of beliefs about teaching and learning, engage the students, and allow her the degree of classroom control she feels is necessary. If she feels the activity does not work, it is quickly dropped or radically altered (Richardson, 1994).

The decision as to whether a new activity works is often unconscious and may be based on experiences and understandings that are not relevant to the particular setting in which instruction is taking place. In other words, a teacher may try an activity that worked with another batch of students and fail to notice that it is inappropriate for the new batch. Thus, while voluntary change is what teachers actually do in their classrooms, it does not necessarily lead to exemplary teaching.

➤ Laissez Faire

If teachers make voluntary changes all the time, perhaps they do not need help direction, or encouragement to make change. According to Cuban (1988), the changes teachers make in their classrooms are minor and inconsequential. Therefore, one could argue that teachers need outside mandates and help to make major changes. We found that teachers sometimes do make major changes on their own (Richardson, Anders, Tidwell & Lloyd, 1991).

Teachers may, however, make decisions about change that are spur-of-the-moment and based on unwarranted assumptions. Without examining the beliefs underlying a sense of what does or does not work, teachers may perpetuate practices based on questionable assumptions and beliefs. This suggests that some direction would be helpful. And, the question arises: do learners benefit from teachers acting alone, making changes as they see fit within the confines of their classrooms? If all teachers make decisions autonomously, the schooling of an individual student could be quite incoherent and ineffective. This, too, suggests that help, direction, or encouragement provided to staff rather than to individuals could be necessary to promote change that is valuable to the learner.

➤ **Vision of Teachers**

Over the period of time, our concept of teaching has shifted from industrial model teachers replicating a specific set of instructional tasks to a "complex, dynamic, interactive, intellectual activity" (Smylie & Conyers, 1991, p. 13). This shift occurred for many reasons, including a change to a much more diverse student body (Devany & Sykes, 1988) and changes in our economy. We therefore need teachers who approach their work with a change orientation: an orientation that suggests that constant reflection, evaluation, and experimentation are integral elements of the teaching role. We now expect teachers to alter curricula on the basis of new knowledge and ways of knowing, to change styles of teacher-student interaction depending on needs of the student population, and to change methods when research indicates more effective practice.

Gary Fenstermacher (1994) suggests that reflecting on one's work as a teacher must be undertaken within the framework of a clear sense of purpose in relation to the learner. He quotes Isr'el Schaffer's view of the purposes of education: "the formation

of habits of judgment and the development of character, the elevation of standards, the facilitation of understanding, the development of taste and discrimination, the stimulation of curiosity and wonder, the fostering of style and sense of beauty, the growth of a thirst for new ideas and visions of the yet unknown" (Scheffler, 1976, p. 206).

Schaffer's notion of teacher, however, is quite individualistic. The autonomous, individual teacher works with her students in the classroom, and is reflective about what goes on in that classroom. The sense of teacher autonomy must be broadened beyond the individual teacher to the batch of teachers who are working, over time, with a given student or set of students. Shirley Pendlebury (1990) suggests that we should think of schools or programs as communities of practice whose members are granted equal respect and concern. This requires an agreed-upon understanding of aims and purposes. Thus autonomy should be considered within a community of practice in which there is continual critical discussion about aims, standards, and procedures.

In sum, the description of the teacher that is preferred is one that balances autonomy with community. The teacher is an inquirer, working within a community of practice in which fellow teachers engage, with each other, in critical discussions concerning aims, goals, procedures, and practices.

2.13 TRAINING MODEL

The more traditional form of staff development begins with someone from outside the school determining that a process, content, method, or system should be implemented in the classroom. The training model has a clearly stated set of objectives and learner outcomes. These outcomes can be teaching skills, such as using

learner-generated material or teaching critical thinking processes. Sparks & Loucks-Horsley (1990) identified a number of important assumptions inherent in the training model. Two of these assumptions are 1) that there are behaviors and techniques worthy of replication by teachers in the classroom, and 2) that teacher-education students and teachers can learn or change their behaviors to replicate these techniques in their classrooms (p. 241).

Many of the staff development programs that employ the training model are relatively short term, involving teachers in several hours or several days of workshops, with limited follow-up activities. Such programs have a chance of succeeding with those teachers whose beliefs match the assumptions inherent in the innovation; even these teachers might not try out the innovation. It is estimated that such staff development garners an implementation level of only 15 percent (Meyer, 1988).

On the other hand, not all training models result in such limited change. A substantial body of research has identified characteristics of reasonably successful training models. These qualities have been summarized by many (e.g., Griffin, 1986) and include the following:

- ✓ The training process should be school-wide and context-specific.
- ✓ Principals (or program directors) should be supportive of the process and encouraging of change.
- ✓ The training should be long term, with adequate support and follow up.
- ✓ The training process should encourage collegiality.
- ✓ The training content should incorporate current knowledge obtained through well-designed research.

- ✓ The process should include adequate funds for materials, outside speakers, and substitute teachers to allow teachers to observe each other.

Even if the staff development process is successful as determined by the percentage of teacher participants who immediately implement changes in their classrooms, the longer-term effects of training models are questionable. For example, in a four-year study of a very popular staff development program, developed and conducted by Madeleine Hunter, which trained teachers in a structured approach to instruction, Stallings & Krasavage (1986) found that in the third year teachers implemented the desired behaviors much less often than they had in the first two years.

Several hypotheses are used to explain the disappointing long-term effects of Madeline Hunter's training model. One is the following: "We believe that the innovative practices teachers learn will not be maintained unless teachers and students remain interested and excited about their own learning. Good staff development program will create an excitement about learning to learn. The question is how to maintain momentum, if we cannot merely maintain previously learned behaviors" (Stallings & Krasavage, 1986, p.137).

This leads to the question of long-term goals of these staff development programs. Do we want teachers to continue using a process, method, or approach into the distant future? Many of us assume that something new and better will come along that will be more appropriate for teachers to use. This discussion of long-term goals leads to the second form of staff development.

➤ **Reflective, Collaborative Models**

It attempts to develop in teachers a more systematic and reflective approach to their own change process. Gallagher, Goudvis, and Pearson (1988) called the approach "mutual adaptation," which, they suggested, is the best approach to use to create dramatic change such as shifts in orientations and beliefs. An example of mutual adaptation is a program developed by Patricia Anders and myself (Richardson, 1994). This was a long-term process in which researcher met with teachers in batches and with individual teachers in their classrooms. Teachers were helped to explore their beliefs and practices through videotaping their classrooms, and talking about their practices with them while viewing the video. Instead, we worked with teachers as they explored their own practices and determined their own directions for change. New practices were sometimes introduced by us in response to requests from the teachers, and often by other teachers. This process required time to meet, exposure to new practices, and time and opportunity to experiment with new practices and to reflect.

Reflective and collaborative staff development models such as the one in which we engaged have a set of similar characteristics. They are not based on a deficit model of change. They assume that reflection and change are on-going processes of assessing beliefs, goals, and results. They are designed to help develop and support a change orientation. The desired outcomes of such models are not pre-specified behaviors and skills. The purpose is procedural: to create ecology of thinking, deliberation, and experimentation. The goals, therefore, may be unstated at the beginning of the process. In these models, change is not considered to be static. That is, a change made by a teacher during the staff development process may not be in place the next year. In fact, it is hoped that teachers will continue to change after

completing the staff development. Each teacher is free to follow her own lines of inquiry and change. The batch is not necessarily expected to decide on the same change. The outcomes of interest are not just changes in behaviors and actions, but also changes in the rationale and justifications that accompany the new practices.

While the reflective and collaborative model of staff development works well with individual teachers, it does have the possibility of creating, within a given program, a number of effective, autonomous, change-oriented teachers who have very different beliefs about what should be taught and how. A student progressing through the program may become very confused with these different approaches. How can we shift elements of this approach to these considerations?

➤ **Community of Practice**

What is necessary is the creation of a sense of autonomy and responsibility that goes beyond the individual class and moves to the school, program, and community levels. Judith Warren Little (1992) describes this as civic responsibility, but cautions against "formally orchestrated" collaboration that becomes bureaucratic and contrived. Little suggests that a solution to the individual autonomy versus civic responsibility tension is the development of "joint work" that brings teachers together and creates interdependence among them.

One way of bringing teachers in a program together in a non-bureaucratic and unforced way is to focus attention on what happens to students over the course of their program or school career. Our current approach to testing and assessment is cross-sectional and grade or classroom-level based. This tends to focus administrators' and teachers' attention on the individual classroom or grade level rather than the institution. If we concentrate on what happens to students as they move through a program, the focus for teachers might shift from the students in their classroom to

students within their program. This shifts responsibility, in part, to the collective, and requires consideration of both individual and organizational change. Teacher autonomy would not, then, be an individual right and responsibility, but would be earned and assumed within a community of practice.

In 2003 National Center for the Study of Adult Learning and Literacy (NCSALL) carried out a study to investigate how adult education teachers changed after participating in one of three different models of professional development (multisession workshop, mentor teacher batch, or practitioner research batch), all on the same topic of learner persistence. The study also investigated different factors like individual, professional development, program, and system factors that influence the type and amount of teacher change. These factors include:-

- Individual factors—their experience, background, and motivation as they come into the professional development
- Professional development factors—the quality and amount of professional development attended
- Program and system factors—the structure of and support offered by the program, adult education system, and professional development system in which they work, including teachers' working conditions

In result of findings of the study, recommendations were given at three levels:-

a. **For Program Directors and States**

- Improve teachers' working conditions and environment, including participation in decision-making process.
- Pay teachers to attend professional development for encouragement.
- Increase interaction with colleagues and directors during and after professional development.

- Establish expectations at the all levels that teachers must continue to learn.

b. **For Professional Developers**

- Ensure high quality professional development.
- Plan a variety of professional development models for teachers to attend, including program-based professional development.
- Help teachers learn skills to build theories of good teaching and student success.
- Add activities to each professional development session to help teachers to apply theoretical knowledge on ground.

c. **For Teachers**

- Set high targets and expect high-quality professional development.
- Recognize the need to develop a philosophy and theory which can guarantee good teaching and student success.
- Work to increase opportunities for teacher decision-making in their programs.
- Support for paid prep time, professional development release time, and benefits as part of their adult education jobs.

2.14 CONTRIBUTIONS OF LEARNING INNOVATION DIVISION IN TEACHER TRAINING

Learning Innovation Division (LID) is one of the branch of Higher Education Division (HEC) which was established in 2003 as an ‘In-service Continuous Professional Development (CPD) hub’ for the Higher Education Teaching Faculty and university administrators across Pakistan to assist them in maintaining their academic excellence and qualitative governance by supporting their professional needs through open and customized programs.

A dire need was felt to start the training of teachers at university level as there is no pre-requisite training standard at the induction time of new lecturers and even there were no arrangements for in-service training. There are about more than 17000 university teachers and it was very difficult to train them at once. LID started the teacher training at two levels, one by going to the doorsteps of different universities and giving the training there and secondly by inviting volunteer teachers at LID Islamabad.

LID consists of three departments which are:

- LI Dept – Learning Innovative Department
- NAHE – National Academy of Higher Education
- ELTR – English Language Teaching Reforms

LI Dept is responsible for running five types of programs which are Faculty Professional Development Program (FPDP), Capacity Building of HEC Employees, NCES Seminars/Workshops, Short Term Faculty Professional Development Program and Modern University Governance Program in which 346, 696, 401, 3871 and 221 (total-5542) individuals from various universities have been trained respectively.

NAHE is responsible to organize three types of programs, namely Staff Development Courses, ICDL/ITE and Workshops/Seminars in which they have trained 3726, 246 and 120 (total-4092) individuals respectively.

ELTR is assigned to run two programs namely, Long Term Fellowships and Short Term Workshops/Seminars in which they have trained 161 and 1343 (total-1504) individuals respectively.

2.15 MASTER TRAINERS – FACULTY PROFESSIONAL DEVELOPMENT PROGRAM

An 8 to 12 Week Faculty Professional Development Program, held at LID Islamabad, is designed for Higher Education teaching faculty to develop their Androgical / Research skills and requisite professional skills (Appendix E). This program being the continuous features of LID is funded through recurrent budget.

Sixteen such batches of FPDP have been organized so far by LID and is still in progress, in which faculty members of different Public and HEC Funded Private Sector Universities got professional certification in their teaching as well as research & management skills.

The faculty members developed as Master Trainers disseminate similar training in their respective institutions. So far 441 HEC faculty members have benefited from it and they are serving as Master Trainers in their respective institutions.

a. Objectives:

- To make teachers understand their responsibilities & duties towards the teaching profession.
- To produce professional teachers, who have the theoretical knowledge and understanding, combined with practical skills,

competencies and commitment to teach at high national standards.

- To expand their teaching skills from conventional teaching to include a variety of innovative teaching methods, using case study, problem based learning & simulation teaching techniques etc.
- To promote the knowledge of curriculum development and its right implementation in classroom settings.
- To enable teachers to select, construct and use assessment strategies for monitoring student learning.
- To enable teachers enhance their management skills and utilize them in the teaching learning situations.
- To develop their research skills so that they can contribute to the existing knowledge sphere in their respective fields.
- To strengthen teacher's communication skills so that they can effectively communicate as professional teachers.
- Most importantly to trickle down quality education & knowledge to their students as expected of them.

b. Expected Learning Outcomes:

- Have awareness about their role as a teacher.
- Be equipped with requisites of androgogy and research skills.
- Be equipped in ICT & E-Learning latest tools and techniques.
- Have improved teaching & communication Skills.
- Have in depth awareness about Teaching as a Profession.

- Be able to handle students in a better way by understanding their psychology.
- Have hands-on opportunities to identify, select, implement, and evaluate learning strategies that are most appropriate for particular teaching situation.
- Be able to assess the suitability of a variety of approaches to the curricula that they teach.
- Conduct a program similar to FPDP in their respective institutions.
- Act as Master Trainers to train Faculty Members of their respective institutions.

2.16 NEED TO ASSESS AND EVALUATE

A need assessment is a systematic process for determining and addressing needs, or "gaps" between current conditions and desired conditions or "wants". The discrepancy between the current condition and wanted condition must be measured to appropriately identify the need. The need can be a desire to improve current performance or to correct a deficiency.

A needs assessment is a part of planning processes, often used for improvement in individuals, education/training, organizations, or communities. It can be an effective tool to clarify problems and identify appropriate interventions or solutions. By clearly identifying the problem, finite resources can be directed towards developing and implementing a feasible and applicable solution. Gathering appropriate and sufficient data informs the process of developing an effective product that will address the batch's needs and wants. Needs assessments are only effective

when they are ends-focused and provide concrete evidence that can be used to determine which of the possible means-to-the-ends are most effective and efficient for achieving the desired results.

The overall goal of assessment is to improve learning. Assessment provides students, parents/guardians, and teachers with valid information concerning student progress and their attainment of the expected curriculum. Assessment should always be viewed as information to improve achievement. Assessment and evaluation measure whether or not learning and/or learning objectives are being met. One could look at assessment and evaluation as the journey (assessment) versus the snapshot (evaluation). Assessment requires the gathering of evidence of student performance over a period of time to measure learning and understanding. Evaluation on the other hand occurs when a mark is assigned after the completion of a task, test, quiz, lesson or learning activity.

HEC has under taken the challenging task of giving training to university teachers through LID and they have successfully completed sixteen professional development courses till Nov 2011. Incidentally, impact of the training has not been assessed so far except the LID itself to improve the every new course training. The researcher has undertaken the subject study with the help of LID to see the impact of training imparted on university teachers. Assessment is not the end but the start point of future course of action. We carry out the assessment for the following reasons (Anderson, Brown & Race, 1998):

- To guide improvement
- To diagnose faults and rectify mistakes at all levels
- To give feedback to all stake holders
- To motivate and encourage ongoing training process in right direction

- To provide statistics for future planning
- To consolidate learning

Therefore the researcher conducted an evaluative study of the LID training program keeping in view the above mentioned objectives identified by Anderson, Brown & Race, (1998).

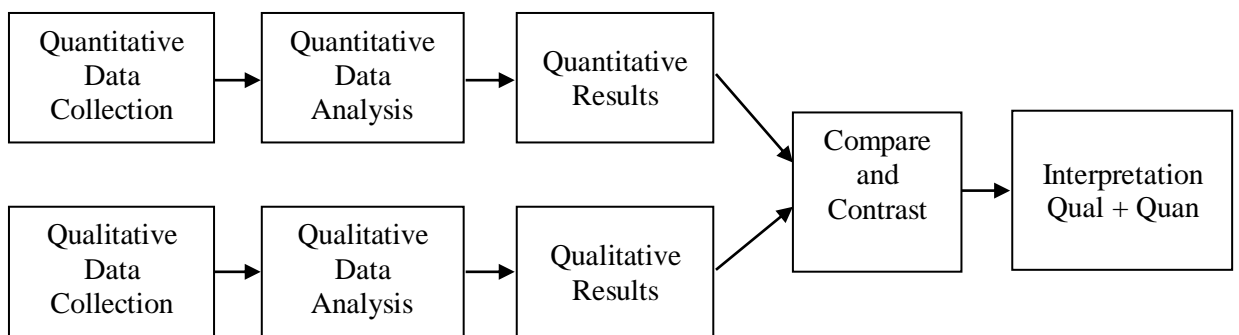
CHAPTER 3

RESEARCH METHODOLOGY AND PROCEDURE

The study focused to see the “Effectiveness of professional development programs on enhancing the knowledge level and changing the professional mindset of university teachers”. The present study used both qualitative and quantitative approaches: in quantitative approach pre-test post-test design was employed whereas in qualitative approach interviews were conducted in order to triangulate the data. In descriptive research the most common and well-known approach to mixing methods (Qualitative & Quantitative) is the Triangulation Design (Creswell, Plano Clark, et al., 2003). The purpose of this design is “to obtain different but complementary data on the same topic” (Morse, 1991, p. 122) to best understand the research problem. The advantage of using this design is to bring together the differing strengths and non-overlapping weaknesses of quantitative methods (large sample size, trends, generalization) with those of qualitative methods (small N, details, in depth) (Patton, 1990). This design is normally used to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data. The Triangulation Design is a one-phase design in which researchers implement the quantitative and qualitative methods during the same time frame. Because of the single-phase timing of this design, it has also been referred to as the “concurrent triangulation design” (Creswell, Plano Clark, et al., 2003). It generally involves the concurrent, but separate, collection and analysis of quantitative and qualitative data so that the researcher may best understand the research problem. The researcher attempts to merge the two data sets, typically by bringing the separate

results together in the interpretation or by transforming data to facilitate integrating the two data types during the analysis.

The ultimate aim of this model is to end up with valid and well-substantiated conclusions about a single phenomenon. For example, Anderson, Newell, and Kilcoyne (1999) converged their quantitative survey results with their qualitative focus group findings to better understand the motivations of college student plasma donors.

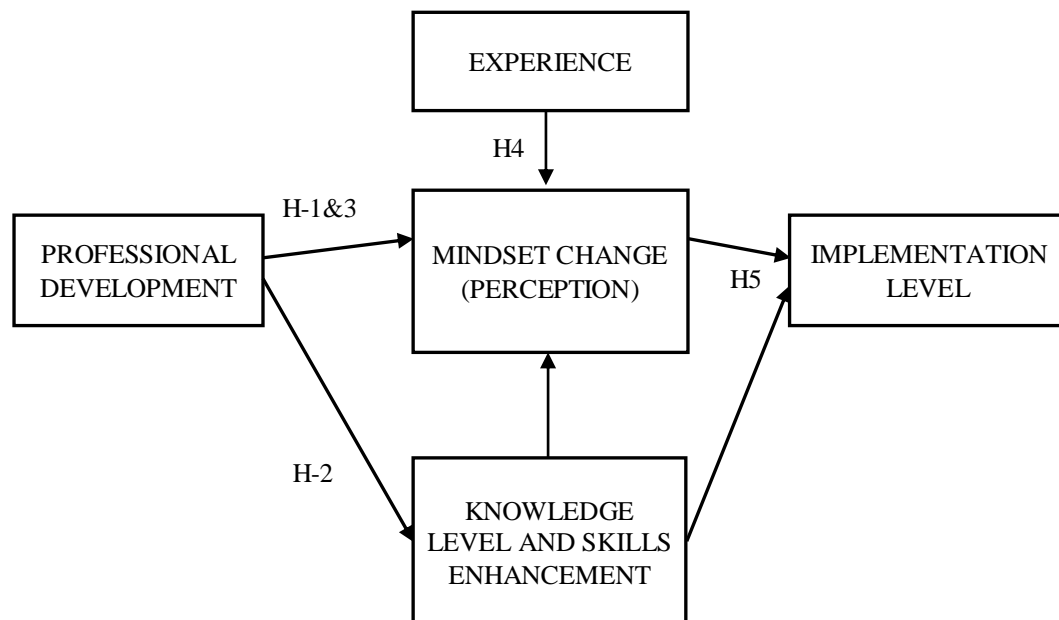


The procedure of the study includes population, sample, and details of sampling, preparation of instruments, pilot testing, data collection and statistical analyses of the data.

3.1 CONCEPTUAL FRAMEWORK OF THE STUDY

Conceptual framework of the study is given in the form of flow chart which shows that professional development takes place through training and during the process perception of teachers cannot be ruled out. In result the outcomes of the training were perceived in the form of change in mindset, knowledge level and the actual implementation of the practices in the classroom. The literature summarized that professional developments of the teachers have positive impact on the belief that consequently lead to the practice. The Learning Innovation Division of HEC is imparting training to the university teachers, the research intended to evaluate the

effectiveness of this training on the change in mindset, pedagogical knowledge and the implementation level of the university teachers. Therefore five hypotheses were formulated as shown in the figure. These hypotheses addressed the perceptions of participant university teachers towards the current professional development training initiatives, level of knowledge of university teachers before and after attending the professional development training courses, relationships in the perceptions of different batches of university teachers who attended professional development training, change in the level of different constructs of mindset of participant university teachers before and after attending the professional development courses, and contribution of professional experience of participant university teachers contribute towards change in mindset. The following flow chart illustrates the five hypotheses for the study:-



Perception of the university teachers towards the professional development may be positive after getting the training. According to Marcelo (1987) the conflict between the teachers' belief and the experience help them to improve their actual practices, therefore the researcher intends to test whether there is positive perception of the teachers towards the professional development, and so the first hypothesis

addressed the association of the positive perception with the professional development.

The second hypothesis of the study is to test the theoretical base that whether there is effect of professional development training on the knowledge of the university teachers. Prosser and Trigwell (1997) and Gibbs & Coffey (2004) has already highlighted that teachers' professional development have positive impact on the actual practices in the classroom in the form of enhanced subject matter knowledge, so, to test this theoretical base the researcher intends the MT-FPDP have positive effect on the knowledge level of the participants.

The professional development may also affect the change in mindset of the employees to test this theoretical underpinning for the MT-FPDP the researcher formulated the third hypothesis studying the no difference between the change in mindset of the different batches of the participants teachers. The researcher has the intention to investigate the change in mindset due to professional development training in more and less experienced university teachers. Therefore, the fourth hypothesis, more change in the mindset of the less experienced university teachers as compared to more experienced university teachers was formulated.

Impact of the professional development can only be seen in the form of actual practices in the classroom. To what extent MT-FPDP has contributed to the improvement in the implementation level, the researchers formulated fifth hypothesis addressing the increase in the change in mindset and knowledge will also change the implementation level of the teachers.

Overall five hypotheses are formulated to investigate the effectiveness of the MT-FPDP training imparted by LID of HEC to the university teachers over the period of 2003 to 2011.

3.2 POPULATION

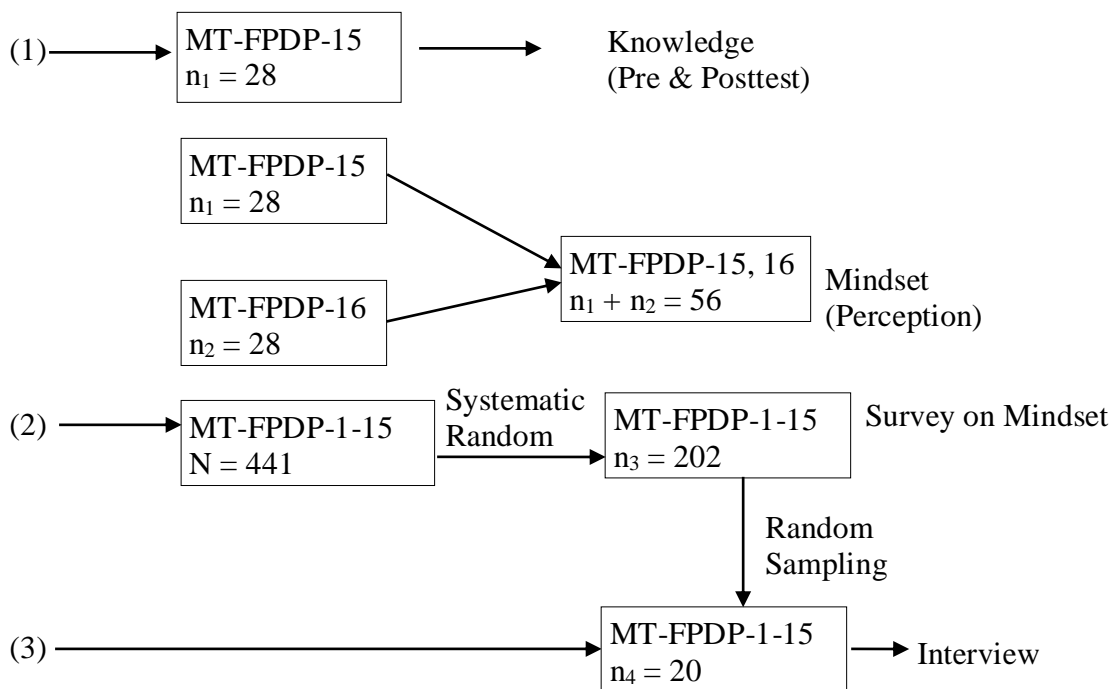
Population of the study comprises of university teachers from seventy five government universities and eighteen private HEC funded universities (affiliated universities with HEC only) who participated in MT-FPDP since 2003 till 2011 and the total strength is 469 teachers from ninety three universities of Pakistan. LID asks from the universities to nominate one principal candidate and one alternative candidate with maximum five years of service irrespective of department out which thirty to thirty five candidates are selected keeping in view the regional and gender ratio. The researcher requested to LID (HEC) and got the details of all participants (course wise) with their email addresses.

3.3 SAMPLE

Sample of the study was in three layers.

- a. The first layer of sample non-probability consisted of MT-FPDP-15 twenty eight male and female for pre & posttest and for change in mindset comprised of participants of MT-FPDP-15 & 16 (fifty six teachers from the various universities of Pakistan as per the allocation of seats by HEC).
- b. Second layer of sample for survey data consisted of 202 participants out of total population of 441 from FPDP-1 to FPDP- 15 (Gay, 1995).
- c. Final layer of sample for interview consisted of 10% (20) randomly selected out of 202 sampled for survey data.

Sampling Frame



3.4 INSTRUMENTATION

The purpose of the study was to explore the implementation of existing professional development programs for university teachers that focuses on enhancement in knowledge level, and change in mindset. In order to achieve this, following instruments were used:-

- a. Written test
- b. Perception and Mindset questionnaire
- c. Interview

The written test was used to measure the effectiveness of training provided by LID. Perception and mindset questionnaire developed by researcher was used to measure the change in mindset and the extent to which trainee teachers have acquired the knowledge and skills during training. The interview served the purpose of

validation of data collected through other instruments. It also provided in depth understanding about the change in mindset and effectiveness of the delivered contents. The detail of each instrument is given as under:

- a. Standard written test prepared by Learning Innovation Division (HEC) for MT-FPDP was used to solve the purpose of Pre & Post testing for quantitative data to assess the enhancement in knowledge level. LID administers the same test to all courses for the same purpose, that is, to see the enhancement of knowledge level during the duration of training.
- b. Perception and implementation part of the instrument for the implementation of acquired knowledge & skills was developed by the researcher on five point rating scale based on the knowledge and skills acquired during the program.

Alignment of Statements from Questionnaire

Perception	Statement No. 1,2,8,9,10,11,13,14,19-21,23-27,29,30,37,38
Implementation	Statement No. 3-7,12,15-18,22,28,31-36,39-41

- c. The second part of the instrument was locally developed by the researcher with the help of experts, psychologists, educationists and related literature to measure the change in mindset of the participants. Instrument was developed on five point rating scale. The instrument included constructs that were used to measure mindset, e.g. Flexibility, Positivity, Ambition, Honesty, Receptivity, Communication, Collaboration, Patience and Balance (Elizabeth, 2005). Statements for each domain of the construct were formulated on five point scale. The mindset score on each statement of the construct was added up to obtain a cumulative score of a person. The higher score was taken as indicative of positive mindset score and vice versa.

- d. The researcher prepared the semi structured interview based on the items of survey questionnaire and visited all Provinces (Karachi, Quetta, Lahore, Rawalpindi/Islamabad, Peshawar, Hazara, Muzaffarabad, Mirpurand Gilgit) and met the university teachers who were randomly selected for this purpose. During the informal meeting, researcher kept on noting the important key points of conversation and then immediately after the conduct of every interview, researcher recorded the feedback in detail so that no point is missed out. Semi structured interview protocol was developed by the researcher and was validated through expert opinion. Protocol is attached as Appendix A. The two instruments, survey questionnaire and change in mindset developed by the researcher were pilot tested. The details of pilot testing are as under:-

3.5 PILOT TESTING

The instrument consisting of two parts (perception and change in mindset) was pilot tested to improve and refine. It allowed the researcher to change/remove certain items, which were ambiguous. There were 45 statements in the perception part of the survey after the pilot testing four statements were removed and two were revised, leaving 41 statements in the final implementation questionnaire with alpha reliability coefficient and the value of Cronbach's Alpha $\alpha = 0.875$.

The mindset set change scale (Part 2) was also pilot tested on a sample of participants of one course (28) who attended MT-FPDP-14 but were not part of survey. After field testing the reliability indices was calculated through alpha reliability coefficient and the value of Cronbach's Alpha was **.900**, after deleting two statements.

Language teachers, program coordinators, psychologists, educationists, faculty teachers, supervisor and experts from related field judged the validity of mindset scale by examining the content validity of the instrument.

3.6 DATA COLLECTION

The survey instrument was distributed and collected mainly through email and some physically by the researcher from the candidates as well. Pretest and posttest data regarding knowledge level and pilot testing of change in mindset was collected from the concerned staff of LID.

3.7 ANALYSIS OF DATA

Quantitative and qualitative analyses were employed. For qualitative data the triangulated method was used to show the credibility of data collected through interview, Mindset scale, and survey questionnaire.

Depending on the information obtained, the quantitative data (pretest-posttest scores, change in mindset score) was analyzed by means of t-test and Pearson Moment Correlation Coefficient. These statistical methods were preferred because of the nature of measurement, scale (Interval scale) and relatively large sample using probability sampling techniques (Systematic random sampling) and research hypotheses. Hypotheses were tested on .05 probability level. SPSS-18 was used for testing the hypotheses.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

Professional training of university teachers was being ignored since long due to unknown reasons. In recent years, HEC felt the dire need for professional training of teachers at university level and for this purpose; LID (HEC) started its endeavor in the shape of MT-FPDP. The researcher has taken up the study to see the effectiveness of MT-FPDP as conducted in this area so far. It was intended to provide information to the heads of departments/institutions who have nominated their academics to undergo through long duration training. It is also helpful for the heads of the department and university administration to run such courses at their own as perceived by HEC. The result of the study may provide information to HEC regarding the contribution of length of experience in mindset change as well as change in the learning and implementation of skills. It has also helped the participants to assess their own performance in the light of received training and to improve further in the future. The study has provided the information on mindset of university teachers in different phases during their career because the study has measured the mind change of different batches who had attended professional development training from 2003 to 2013.

The general objective of the study was to explore the implementation of existing professional development programs for university teachers that focuses on enhancement in knowledge level, and change in mindset. However, there were five specific objectives covering different aspects of the training which include, level of knowledge of different batches of university teachers before and after attending the professional development training, the extent to which professional development

practices are being implemented by the university teachers who had attended the training courses, whether or not there are positive perceptions towards professional development among university teachers, the differences in change in mindset among different batches of university teachers who attended the training courses and change in mindset between less experienced and more experienced university teachers before and after attending the professional development training.

Population of the study comprised of university teachers from seventy five government universities and eighteen private HEC funded universities (affiliated universities with HEC only) who participated in MT-FPDP since 2003 till Nov 2011 and the total strength was 469 teachers from ninety three universities of Pakistan. The experience of nominated teachers was less than five years. Sample of the study was selected in three layers. The first layer of sample consisted of MT-FPDP-15 twenty eight male female for pre & posttest and for change in mindset comprised of participants of MT-FPDP-15&16 (fifty six teachers from the various universities of Pakistan as per the allocation of seats by HEC). The second layer of sample for survey data consisted of 202 participants out of total population of 441 from FPDP-1 to FPDP-15 (Gay, 1995). To triangulate the study, the final layer of sample for interview consisted of 20 randomly selected participants out of 202 samples for survey data.

The researcher used three instruments; written test, perception and mindset questionnaire and interview. The collected data was analyzed using different statistic and qualitative techniques. The details of data analysis are in subsequent paragraphs.

4.1 LEVEL OF KNOWLEDGE OF UNIVERSITY TEACHERS

The first objective of the study was to evaluate the levels of knowledge of university teachers before and after attending the professional development training

courses run by HEC and see if there was any measurable change in the levels of knowledge of university teachers arising from their participation in the professional development training courses.

Overall, 469 university teachers from 93 universities have participated in the professional development training of HEC so far. LID has developed a written test to measure course effectiveness. The participants of MT-FPDP-15 were selected for effectiveness of training on knowledge of the participants. The researcher coordinated the pre-test (standard test prepared by HEC) on the first day of the course and then conducted the post-test on final day. All papers for both pre- and post-tests were marked by the same panel of ‘experts’ to ensure impartiality (Rubric is attached in appendix C).The scores were coded into SPSS software for data analysis. The summary of the descriptive statistics of pre-test and post-test is given in Table 1.

Table 1 Descriptive Statistics of the Sampled Participants Scores on Pre-Test and Post-Test

Type	N	Minimum	Maximum	Mean	Std. Dev.
Pre-Test	28	07	19.5	13.2	1.56
Post-Test		14	25.0	18.2	3.42

The table 1 indicates that the participants’ scores on pre-test with minimum value 7 and maximum 19.5 whereas on post-test the mean and maximum values increase to 14 and 25, showing an increase in the mean ‘5’.

To achieve first objective the researcher formulated the hypothesis “There is no difference between the knowledge level of participants of MT-FPDP-15 on

professional development training courses as measured before and after training. The hypothesis was tested by using paired sample t-test.

In order to investigate the significance of the mean difference (18.2–13.2=5), the summary of the t-statistics is shown in the table 2.

Table 2 Paired Sample t-statistics of the Participants Scores on Pre-Test an Post-Test

Type	Mean	Mean Difference	Std Error Mean	t-Value	Significance
Pre-Test	13.2				
Post-Test	18.2	5.0	0.38	13.3	.001

The table 2 indicates the value (t=13.3, .001), at $\alpha=0.05$ level of significance which is significant to reject the null hypothesis that “There is no difference between the knowledge level of participants of FPDP-15 on professional development training courses as measured before and after training”.

4.2 APPLICATION OF PROFESSIONAL DEVELOPMENT PRACTICES

The second objective of the study was inter-related with hypothesis about the level of implementation of professional development practices by the trained university teachers at their job. There were 21 statements in the questionnaire, for this purpose the researcher also interviewed 20 teachers. The descriptive analysis of the responses is given in table 3 below:-.

Table 3 Description of Level of Implementation

S/No	Statements	N		SA	A	UNC	DA	SDA	Mean
1.	FPDP gave you the awareness to transform from conventional teaching to a variety of innovative teaching methods.	202	f	142	60	0	0	0	4.70
			%	70.3	29.7	0	0	0	
2.	You can identify various barriers to effective communication and can also overcome.	202	f	132	64	6	0	0	4.62
			%	65.3	31.7	3.0	0	0	
3.	You can evaluate the teaching competencies of your classroom teaching.	202	f	104	94	0	4	0	4.48
			%	51.5	46.5	0	2.0	0	
4.	You can comfortably adapt your instruction to meet the needs and characteristics of all students.	202	f	110	82	8	0	2	4.48
			%	54.5	40.6	4	0	1	
5.	You have the ability to	202	f	94	104	2	2	0	

	appreciate the need and		%	46.5	51.5	1	1	0	4.44
	desired standards for								
	professional development of								
	teachers which enable them								
	to perform their academic								
	duties successfully.								
6.	FPDP makes you wise in the	202	f	104	84	10	4	0	
	procedures of content								4.43
	selection.		%	51.5	41.6	5	2	0	
7.	You feel better placed to	202	f	108	82	6	2	4	
	handle students in a better								4.43
	way by understanding their		%	53.5	40.6	3	1	2	
	psychology.								
8.	You can easily conduct a	202	f	78	108	10	6	0	
	program similar to FPDP in								4.42
	your own institution.		%	38.6	53.5	5	3	0	
9.	Teachers are able to trickle	202	f	110	68	20	4	0	
	down quality education &								4.41
	knowledge to their students		%	54.5	33.7	9.9	2	0	
	as expected of them after								
	attending FPDP.								
10.	You can apply educational	202	f	94	92	8	4	4	
	psychology for making								4.33
	teaching-learning process		%	46.5	45.5	4	2	2	
	effective.								

11.	FPDP assisted to learn to construct tests according to the objectives of the taught material.		f	80	106	10	6	0	4.29
			%	39.6	52.5	5	3	0	
12.	You feel that you are well equipped with requisites of andragogy, research skills, e-Learning latest tools and techniques after qualifying FPDP.	202	f	76	114	6	6	0	4.29
			%	37.6	56.4	3	3	0	
13.	You can easily apply the principles of administration in concerned fields.	202	f	74	108	16	2	2	4.24
			%	36.6	53.5	7.9	1	1	
14.	You can easily perform subjective or objective measurement of students.	202	f	62	124	16	0	0	4.23
			%	30.7	61.4	7.9	0	0	
15.	You can use a variety of tools for measurement and evaluation of educational programs.	202	f	64	122	10	6	0	4.21
			%	31.7	60.4	5	3	0	
16.	You can design and conduct the research according to the objectives of the study.	202	f	66	120	6	8	2	4.19
			%	32.7	59.4	3	4	1	
17.	You have the capability to	202	f	58	124	12	8	0	

	use a variety of methods for the educational research.		%	28.7	61.4	5.9	4	0	4.15
18.	You can understand and apply proper type of research in its actual manner.	202	f	60	114	24	4	0	4.14
			%	29.7	56.4	11.9	2	0	
19.	You take active part in the process of curriculum development in professional life.	202	f	66	110	4	18	4	4.07
			%	32.7	54.5	2	8.9	2	
20.	You can develop valid and reliable research instruments suitable to studies.	202	f	64	98	28	12	0	4.06
			%	31.7	48.5	13.9	5.9	0	
21.	FPDP has made you expert in applying sampling techniques as per objectives of the study.	202	f	52	128	8	10	4	4.06
			%	25.7	63.4	4	5	2	

Table 3 shows that on the basis of frequencies and mean score of the responses it was observed that the participants rated the awareness, identification of communication barriers, evaluation of teaching competencies and comfort in the adoption of instructions as the major components on which the MT-FPDP was most effective. It has been observed on the basis of participants' scores that statements relating to the research and curriculum elements were low. Understanding of the research, development of the instruments and sample selection along with the curriculum development need more attention during the MT-FPDP as per response analysis.

These responses were categorized and explained in the light of data collected through interviews. Also the researcher visited the LID and managed to interact with the participating teachers and conducted semi structured interview and got the feedback in overall change in implementation after attending the course. The response was almost towards positive change. The related response through interview is as under:-

- Three respondents said that after this course we are very confident teachers and communicating more effectively in the classrooms.
- Four respondents expressed that they can arrange professional development training but with guidance and also coordinated the programs faculty development in the universities.
- The respondents were not confident enough to play any role in curriculum development as they have never been involved in this process. As two respondents said “we were provided the course outline and recommended books, but have no idea about the curriculum development process”

4.3 PERCEPTION TOWARDS PROFESSIONAL DEVELOPMENT

The third objective was to assess whether or not there are positive perceptions towards professional development among university teachers after obtaining the training. It was interlinked with the hypothesis, “Perception of FPDP-1-13 and 15-16 participants towards professional development program for university teachers who attended professional development training was positive”.

On the basis of the responses the statement regarding perception about implementation level are analyzed and tabulated in the Table 4 below which also addresses the hypothesis related to perception level of FPDP 1-13 and 15-16.

Table 4 Perception towards Professional Development

S/No	Statements	N		SA	A	UNC	DA	SDA	Mean
1.	Communication is the most important to teachers.	202	f	166	30	6	0	0	4.79
			%	82.2	14.9	3	0	0	
2.	Every teacher must know communication process.	202	f	160	38	2	2	0	4.76
			%	79.2	18.8	1	1	0	
3.	FPDP helps you to learn to give effective presentation.	202	f	154	46	2	0	0	4.75
			%	76.2	22.8	1	0	0	
4.	FPDP helped you to make you understand your responsibilities & duties towards the teaching profession.	202	f	148	54	0	0	0	4.73
			%	73.3	26.7	0	0	0	
5.	You are aware of the role of university teachers in educational administration.	202	f	144	56	2	0	0	4.70
			%	71.3	27.7	1	0	0	
6.	Active listening behavior plays an important role in communication.	202	f	146	52	4	0	0	4.70
			%	72.3	25.7	2	0	0	
7.	Objectives and content play basic role in curriculum development.	202	f	128	70	4	0	0	4.61
			%	63.4	34.7	2	0	0	
8.	Evaluation is must for ensuring the quality of curriculum.	202	f	126	74	2	0	0	4.61
			%	62.4	36.6	1	0	0	
9.	Without effective feedback communication is incomplete.	202	f	126	72	4	0	0	4.60
			%	62.4	35.6	2	0	0	

10.	You understand the concept and importance of curriculum.	202	f	126	68	8	0	0	4.58
			%	62.4	33.7	4	0	0	
11.	You think that educational psychology is very important for making the teaching-learning process effective.	202	f	128	66	6	0	2	4.57
			%	63.4	32.7	3	0	1	
12.	FPDP has played major role in producing professional teachers, who have the theoretical knowledge and understanding, combined with practical skills, competencies and commitment to teach at high national standards.	202	f	126	66	8	2	0	4.56
			%	62.4	32.7	4	1	0	
13.	Educational psychology is very much relevant for teachers.	202	f	108	82	10	2	0	4.47
			%	53.5	40.6	5	1	0	
14.	You are well aware of nature, purposes, principles and maxims of teaching which enable the teacher more effective after FPDP.	202	f	96	102	4	0	0	4.46
			%	47.5	50.5	2	0	0	
15.	You can easily analyze the	202	f	72	122	6	2	0	

	domains and skills related to teaching process and determine the extent of their adaptability during teaching.		%	35.6	60.4	3	1	0	4.31
16.	You are able to examine the different areas of educational psychology and their status in educational process.	202	f	78	108	10	6	0	
			%	38.6	53.5	5	3	0	4.28
17.	You feel satisfaction if you review your own professional performance in the light of different areas of educational psychology.	202	f	74	106	20	2	0	
			%	36.6	52.5	9.9	1	0	4.25
18.	Measurement and evaluation is badly needed in educational process.	202	f	72	110	16	2	2	
			%	35.6	54.5	7.9	1	1	4.23
19.	Teacher does not have the right to teach without going through the continuous research process.	202	f	64	104	16	18	0	
			%	31.7	51.5	7.9	8.9	0	4.06
20.	You can undertake curriculum activities independently.	202	f	60	104	20	18	0	
			%	29.7	51.5	9.9	8.9	0	4.02

Table 4 shows that the descriptive analysis of the perception towards implementation revealed that the respondents were good in communication, presentation, understanding the responsibilities, and role of administration.

The respondents' perception towards role of curriculum, quality of curriculum, incomplete feedback, importance of curriculum and role of education psychology was rated average. Their perception for implementation of adaptability to skills related to teaching, examine the different area of educational psychology, satisfaction towards use of psychology and undertake the curriculum activities independently were rated low.

The data collected through interview also revealed that:-

- FPDP helps the teachers to communicate the contents to their respective students through effective presentation and helped them to understand their responsibilities and duties. They also agreed that active listening behaviours help to improve the communication skills.
- Teachers are well aware of educational administrations, understand the importance of curriculum, consider educational psychology as integral part of teaching learning process and give weightage to students' feedback.
- Teachers need training to analyze domains and skills related to teaching process, they were learning positive perception towards the use of educational psychology but were not confident in its use. And they identified the need for training in measurement and evaluation skills.

4.3.1 Qualitative Analysis for Comparison of FPDP-15 & 16 Batches

The researcher visited the LID and managed to interact with the participating teachers, conducted semi structured interview and got the feedback in overall change in perception after attending the course. The response was almost towards positive change. The related response through interview is as under:-

The interview revealed that most of the respondents were agreed with the concept that communication plays an important role in teaching learning process, and listening is an important aspect in communication process. One of the respondents said that “before attending this workshop I was too vocal in the classroom and was not listening to the students’ point of views. After that when I started listening students during the class, it gave me more confidence that the students raised very relevant questions. Sometime as a teacher I only have to say yes or no to answer the students’ questions”.

The interview response also highlighted that respondents are taking more interest in educational administration. Six respondents were of the view that curriculum plays an important role but they are not adept in curriculum developmental process as one of them said “it is a complex, continuous process a teacher may not be capable and control the curriculum changes, but as a science teacher I am more interested to learn the process as the environment around us is changing and touching the old syllabus is mess at all”. Three respondents focused upon the evaluation of the students learning and highlighted the need of evaluation.

As one of the respondent said that “before the training I was developing test taking questions from the exercises in the textbooks, but now I felt that these may not serve the purpose and now I am trying to develop my own test questions”

On the other hand one was of the view that “developing test is my common practice and is not new to me”.

Two respondents strongly supported the research work to be done by the university teachers.

4.4 MINDSET OF UNIVERSITY TEACHERS AFTER PROFESSIONAL DEVELOPMENT

To assess the change in mindset, a separate portion was added to the questionnaire which was prepared very carefully with the help of a team of experts. Mindset portion was consisted of nine components, i.e. Flexibility, Positivity, Ambition, Honesty, Receptivity, Communication, Collaboration, Patience and Balance. Every component further contains four to seven statements. To achieve the objective of the study “examine the differences in mindset among university teachers who attended the training courses from 2003 to 2011” and related hypothesis “there was no difference in mindset score between FPDP-15 to 16 batches and FPDP-1 to 13 batches after attending the training courses with respect to following constructs: Flexibility, Positivity, Ambition, Honesty, Receptivity, Communication, Collaboration, Patience and Balance”. Separate portion on each sub construct was placed in the questionnaire.

The data analysis for overall change in mindset is presented in the following lines.

4.4.1 Overall Mindset Comparison

There were 42 statements and 9 components which are flexibility (5) statements, positivity (4) statements, ambition (4) statements, honesty (5) statements, receptivity (4) statements, communication (5) statements, collaboration (4) statements, patience (7) statements and balance (4) statements. Overall score were calculated and compared the mindset score of FPDP 15 to 16 and FPDP 1-13. The summary of descriptive statistics is given in table 5 below:-

Table 5 Summary of Overall Mindset Description

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	167	15.5
FPDP 1-13	146	161	11.4

Table 5 indicates that there were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The mean score of FPDP 15 to 16 (167) is higher than Mean score of FPDP 1-13 (161). To test the significance of the difference between the mean score independent sample t-test was used. The summary of t-statistics is presented in table 6.

Table 6 Summary of t-statistics on Overall Change in Mindset Response

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16					
	200	6	2.0	2.716	.007
FPDP 1 to 13					

Level of significance $\alpha=0.05$

Table 6 indicates the p value =0.007 is less than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is significantly higher than the mean of FPDP 1-13 which shows that the overall mindset score of participants of FPDP 15 to 16 is higher than the score of the participants of FPDP 1-13 which allows to reject the null hypothesis that “there was no difference in mindset score between FPDP 15 to 16 batches and FPDP 1-13 batches after attending the training courses”.

The overall picture of the data revealed that there is a difference and the mean score of the respondents of MT-FPDP-15 to 16 were higher than the mean score of MT-FPDP-1-13.

There were nine components the summary of the analysis for each component is presented below. It also helped to investigate that which component contributed more towards the overall difference. Component wise analysis follows below:-

4.4.1.1 Component of Flexibility

There were 56 participants of FPDP-15 to 16 who responded to the questionnaire and 146 for FPDP-1-13. The summary of descriptive statistic relating to Flexibility component is given in Table 7.

Table 7 Summary of Flexibility – Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	21.1	2.54
FPDP 1-13	146	20.7	2.07

Table 7 shows that the mean score of FPDP 15 to 16 (21.1) is higher than mean score of FPDP 1-13 (20.7). To test the significance of the difference between the mean score independent sample t-test was used. The summary of t-statistics is shown in table 8.

Table 8 Summary of t-Statistics Flexibility – Component of Mindset

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16					
	200	0.4	.351	1.000	.319
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 8 shows the p value =0.319 is higher than the level of significance $\alpha=0.05$. The means of both batches are almost same, so there were no significant

evidence to reject the null hypothesis and both batches were equal on the flexibility component. The next component was positivity.

4.4.1.2 Component of Positivity

There were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The summary of descriptive statistic relating to Positivity components given in Table 9:-

Table 9 Summary of Positivity – Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	15.5	2.23
FPDP 1-13	146	15.0	2.19

Table 9 indicates the mean score of FPDP 15 to 16 (15.5) is higher than Mean score of FPDP 1-13 (15.0). To test the significance of the difference between the mean score independent sample t-test was used. The summary of t-statistics is as under.

Table 10 Summary of t-statistics Positivity – Component of Mindset

Batches	Df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16					
	200	0.5	.351	1.000	.117
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 10 shows that the p value =0.117 is greater than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is almost equal to the mean of FPDP 1-13, which was not statistically significant to reject the null hypothesis, so it allowed to accept the null hypothesis that there is no difference in the positivity change score between

FPDP 15 to 16 batches and FPDP 1-13 batches after attending the training courses.

The next component was Ambition.

4.4.1.3 Component of Ambition

There were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The summary of descriptive statistic relating to positivity components given in Table 11:-

Table 11 Summary of Ambition - Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	14.7	2.95
FPDP 1-13	146	15.8	2.63

Table 11 shows that there were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The mean score of FPDP 15 to 16 (14.7) is lower than Mean score of FPDP 1-13 (15.8). To test the significance of the difference between the mean scores independent sample t-test was used. The summary of t-statistics is given in table 12.

Table 12 Summary of t-statistics Ambition – Component of Mindset

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16	200	1.1	.433	-2.473	.014
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 12 shows the p value =0.014 is less than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is significantly lower than the mean of FPDP 1-

13 which shows that the overall mindset score of participants of FPDP 15 to 16 is less than the score of the participants of FPDP 1-13 which is significant and allows to accept the null hypothesis that there is no difference in the ambition change score between FPDP 15 to 16 batches and FPDP 1-13 batches after attending the training courses. The next component was honesty.

4.4.1.4 Component of Honesty

There were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The summary of descriptive statistic relating to honesty components given in Table 13:-

Table 13 Summary of Honesty – Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	20.8	2.65
FPDP 1-13	146	20.4	2.35

Table 13 shows the mean score of FPDP 15 to 16 (20.8) is higher than Mean score of FPDP 1-13 (20.4). To test the significance of the difference between the mean score independent sample t-test was used. The summary of t-statistics is as under.

Table 14 Summary of t-statistics Honesty – Component of Mindset

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16	200	0.4	.387	1.118	.265
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 14 shows the p value =0.265 is more than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is almost same as that of the mean of FPDP 1-13 which shows that the overall mindset score of participants of FPDP 15 to 16 is equal to the score of the participants of FPDP 1-13 which does not allow to reject the null hypothesis that there is no difference in the honesty change score between FPDP 15 to 16 batches and FPDP 1-13 batches after attending the training courses so the batches were equal. The next component was Receptivity.

4.4.1.5 Component of Receptivity

There were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The summary of descriptive statistic relating to Receptivity components given in Table 15:-

Table 15 Summary of Receptivity – Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	15.4	3.42
FPDP 1-13	146	14.6	2.23

Table 15 shows the mean score of FPDP 15 to 16 (15.4) is higher than Mean score of FPDP 1-13 (14.6). To test the significance of the difference between the mean score independent sample t-test was used. The summary of t-statistics is given in table 16.

Table 16 Summary of t-statistics Receptivity – Component of Mindset

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16	200	0.8	.414	1.931	.05
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 16 shows the p value =0.05 is equal than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is significantly higher than the mean of FPDP 1-13 which shows that the overall mindset score of participants of FPDP 15 to 16 is higher than the score of the participants of FPDP 1-13 which allows to reject the null hypothesis that there is no difference in the receptivity change score between FPDP 15 to 16 batches and FPDP 1-13 batches after attending the training courses. The next component was Communication.

4.4.1.6 Component of Communication

There were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The summary of descriptive statistic relating to Receptivity components given in Table 17:-

Table 17 Summary of Communication – Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	21.3	1.78
FPDP 1-13	146	20.3	2.76

Table 17 shows the mean score of FPDP 15 to 16 (21.3) is higher than Mean score of FPDP 1-13 (20.3). To test the significance of the difference between the

mean score independent sample t-test was used. The summary of t-statistics is presented in table 18.

Table 18 Summary of t-Statistics Communication – Component of Mindset

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16	200	1.0	.404	2.331	.021
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 18 shows the p value =0.021 is less than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is significantly higher than the mean of FPDP 1-13 which shows that the overall mindset score of participants of FPDP 15 to 16 is higher than the score of the participants of FPDP 1-13 which allows to reject the null hypothesis that there is no difference in the communication change score between FPDP 15 to 16 batches and FPDP 1-13 batches after attending the training courses. The next component was Collaboration.

4.4.1.7 Component of Collaboration

There were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The summary of descriptive statistic relating to Receptivity components given in Table 19:-

Table 19 Summary of Collaboration – Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	18.1	1.89
FPDP 1-13	146	16.9	2.42

Table 19 indicates the mean score of FPDP 15 to 16 (181) is higher than Mean score of FPDP 1-13 (169). To test the significance of the difference b/w the mean score independent sample t-test was used. The summary of t-statistics is shown in table 20.

Table 20 Summary of t-statistics Collaboration – Component of Mindset

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16	200	1.1	.365	3.185	.002
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 20 shows the p value =0.002 is less than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is significantly higher than the mean of FPDP 1-13 which shows that the overall mindset score of participants of FPDP 15 to 16 is higher than the score of the participants of FPDP 1-13 which allows to reject the null hypothesis that there is no difference in the collaboration change score between FPDP 15 to 16 batches and FPDP 1-13 batches after attending the training courses. The next component was Patience:-

4.4.1.8 Component of Patience

There were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The summary of descriptive statistic relating to Receptivity components given in Table 21:-

Table 21 Summary of Patience – Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	26.9	4.43
FPDP 1-13	146	25.5	3.47

Table 21 shows the mean score of FPDP 15 to 16 (26.9) is higher than Mean score of FPDP 1-13 (25.5). To test the significance of the difference between the mean score independent sample t-test was used. The summary of t-statistics is given in table 22.

Table 22 Summary of t-Statistics Patience – Component of Mindset

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16	200	1.4	.597	2.320	.021
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 22 shows the p value =0.021 is less than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is significantly higher than the mean of FPDP 1-13 which shows that the overall mindset score of participants of FPDP 15 to 16 is higher than the score of the participants of FPDP 1-13 which allows to reject the null hypothesis that there is no difference in the patience change score between FPDP

15 to 16 batches and FPDP 1-13 batches after attending the training courses. The next component was Balance:-

4.4.1.9 Component of Balance

There were 56 participants of FPDP 15 to 16 who responded to the questionnaire and 146 for FPDP 1-13. The summary of descriptive statistic relating to Receptivity components given in Table 23:-

Table 23 Summary of Balance – Component of Mindset

Categories	N	Mean	Std. Deviation
FPDP 15-16	56	13.1	2.85
FPDP 1-13	146	12.2	2.46

Table 23 shows the mean score of FPDP 15 to 16 (13.1) is higher than Mean score of FPDP 1-13 (12.2). To test the significance of the difference b/w the mean score independent sample t-test was used. The summary of t-statistics is presented in table 24.

Table 24 Summary of t-statistics Balance – Component of Mindset

Batches	df	Mean Difference	Std. Error	t-Value	Sig
FPDP 15 to 16	200	0.9	.597	2.220	.028
FPDP 1 to 13					

The mean difference is significant at $\alpha=0.05$ level

Table 24 shows the p value =0.028 is less than the level of significance $\alpha=0.05$. The mean of FPDP 15 to 16 is significantly higher than the mean of FPDP 1-13 which shows that the overall mindset score of participants of FPDP 15 to 16 is higher than the score of the participants of FPDP 1-13 which allows to reject the null

hypothesis that there is no difference in the balance change score between FPDP 15 to 16 batches and FPDP 1-13 batches after attending the training courses.

4.5 MINDSET OF EXPERIENCED AND LESS EXPERIENCED PROFESSIONALS

The feedback on change in mindset was managed at two levels. In 1st level the data was collected through correspondence with the help of questionnaire from the teachers of FPDP 1-10 whose experience was more than 10 years. At 2nd level, the data related to change in mindset of FPDP courses 11 to 13 was collected through correspondence with the help of questionnaire whereas the data FPDP 15&16 was collected by the researcher during the execution of the courses through the same questionnaire whose experience is less than 10 years.

The change in mindset has been analyzed in two batches i.e. experienced batch (more than 10 year service) and less experience batch (less than 10 year service).

- The objective of the study was “Compare the mindset of less experienced and more experienced university teachers after attending the professional development training”.
- The corresponding hypothesis was, “There is no difference between the mindset mean score of less experienced university teachers and more experienced university teachers who attended the Faculty Professional Development Program”.

Table 25 Batch Statistics of Experienced and Less Experienced Teachers

Batches	N	Mean	Std. Deviation	Std. Error Mean
Less Experienced	89	166	14.3	1.51
Experienced	113	161	11.1	1.05

Table 25 shows the mean of the above data depicts that change in mindset of experienced and less experienced is almost the same. If we compare minutely the mean (166) of less experienced is slightly higher than the experienced mean (161) which depicts that the fresh graduates of FPDP are more motivated than the experienced one. To test the significance of the difference between the mean score independent sample t-test was used. The summary of t-statistics is given in table 26.

Table 26 Independent Samples t-Test of Experienced and Less Experienced Teachers

Batches	df	Mean Difference	Std. Error	t-Value	Sig
Less Experienced	200	5	1.792	2.747	.007
Experienced					

Level of significance $\alpha=0.05$

Table 26 shows the P value =0.007 is less than the level of significance $\alpha=0.05$. The mean of FPDP 11-13, 15 to 16 is higher than the mean of FPDP 1-10 which shows that the overall mindset score of less experienced is slightly higher than the score of experienced teachers (FPDP 1-10) which shows that less experienced teachers who got professional development training tended to change their professional mindset.

4.6 RELATIONSHIP BETWEEN IMPLEMENTATION LEVEL, CHANGE IN MINDSET AND KNOWLEDGE CHANGE

The hypothesis of the study, “Mindset, knowledge and perception about professional development has no affect on implementation level of teachers who had attended professional development training” is based on the assumption that change in mindset and enhancement in knowledge is directly proportional to implementation level. Following tables have been used to analyze the relationship of these three variables:-

4.6.1 Implementation level & Mindset

At first the relationship between mindset and implementation level of the participants was correlated using Pearson ‘r’. The summary of the statistics is shown in the table below:-

Table 27 Correlation between Implementation level & Mindset

Categories	N	Pearson	Significance
Mindset	202	.377	.000
Implementation Level			

** . Correlation is significant at the 0.01 level (2-tailed).

Table 27 indicates that there were two separate components of the questionnaire the perception of implementation level and the mindset the Pearson $r=0.377$ was significant as P value was less than $\alpha=0.01$ which indicates that the change in mindset of the respondents was positively correlated with the perception of implementation level.

4.6.2 Implementation level & Knowledge Level

At first the relationship between knowledge level and implementation level of the participants was correlated using Pearson 'r'. The summary of the statistics is shown in the table 28:-

Table 28 Correlation between Implementation level & Knowledge Level

Categories	N	Pearson 'r'	Significance
Implementation	28	.482	.03
Knowledge Change	28		

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

Table 28 shows that there were two separate instruments for the perception of implementation level and the knowledge level. The scores were quantified as both scores were on separate scales and mean difference was not feasible so the Pearson was used and found as $r=0.482$ that was significant as p-value was less than $\alpha=0.05$ which indicates that the knowledge level of the respondents was significantly correlated with the implementation level.

4.6.3 Perceptions and Implementation level

The relationship between perception towards professional development training and the implementation level of the participants was correlated using Pearson 'r'. The summary of the statistics is shown in the table 29:-

Table 29 Correlation between Perceptions and Implementation level

Categories	N	Pearson 'r'	Significance
Implementation	28	.47	.025
Perception	28		

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

Table 29 shows the perception towards the professional development training and the implementation level of two different batches were measured and correlated using Pearson 'r'. The calculated value of Pearson's $r=0.47$ that was significant as p-value was less than $\alpha=0.05$ which indicates that the perception towards the professional development training and the implementation level of the respondents was significantly correlated.

4.7 Perceptions towards Professional Development Training

Keeping in view the nature of the responses, the researcher considered the interview method for the feedback. For this purpose, researcher prepared and conducted a semi-structured interview. The responses were transcribed, coded for thematic analysis. Five themes (Contributions/Impact of MT-FPDP, Evaluation and Research Abilities, Communication and Educational Psychology, Curriculum Development and Mindset) were identified, the theme wise responses are given as under:-

4.7.1 Contributions/Impact of MT-FPDP

- Twenty seven respondents out of thirty expressed that FPDP helped them in understanding of responsibilities & duties towards the teaching profession and can play major role in producing professional teachers, who have the theoretical knowledge and understanding, combined with practical skills, competencies and commitment to teach at high national standards.
- Twenty six teachers were highly confident that FPDP gave them the awareness to transform from conventional teaching to a variety of innovative teaching methods.

- Almost all of the respondents were of the view that continuous professional training is must for teachers' growth.

4.7.2 Evaluation and Research Abilities

- Twelve out of thirty respondents were able to use variety of tools for measurement and evaluation of educational programs.
- Eighteen respondents were of the view that MT-FPDP assisted them to learn to construct tests according to the objectives of the taught material.
- Twenty one teachers were confident enough to design and conduct the research according to the objectives of the study.

4.7.3 Communication and Educational Psychology

- Almost all of them were satisfied about the usage and awareness of communication process after professional training.
- Twenty five teachers were able to identify various barriers to effective communication and can also overcome.
- Seventeen respondents were able to examine the different areas of educational psychology and their status in educational process.

4.7.4 Curriculum Development

- All the respondents were aware of the importance of curriculum.
- Only three respondents being heads of department were taking part in the process of curriculum development in professional life.
- Majority of the respondents were aware of the role of university teachers in educational administration.

4.7.5 Mindset

- Twenty eight respondents felt that their performance is as per their competency.
- Twenty nine opined “they take interest in learning all the time”.
- Almost all of the respondents were interested to work on new lines.

4.8 SUMMARY OF THE RESPONSES ABOUT INTERVIEW PROTOCOL

The researcher interviewed thirty respondents from various universities of Pakistan whereas the desired sample was twenty teachers. Their response is as under:-

- Most of the respondents were of the view that FPDP has helped them a lot in transforming them into confident teachers who are well aware of their responsibilities. Only one respondent differed and was not satisfied with the training.
- 70% of the respondents were of the view that 100% impact cannot be achieved during the duration of the course but it gives awareness and direction to work continuously to achieve the desired competence whereas 30% of the respondents opined that they have achieved the desired effects.
- All the respondents less one were in the favour of continuous training but most of the female teachers stressed on decentralized training at city/university level as it’s very difficult for them to go to Islamabad for longer duration at the cost of family obligations.

- Most of the respondents opined that educational psychology is a very important segment of professional development which provides the base for rest of the edifice.
- Most of the respondents considered that learning of assessment and evaluation procedures are mandatory for all teachers and it's a continuous process which needs on job training.
- Almost all the respondents confessed that FPDP has helped them in refining their communication skills.
- Most of the respondents were of the view that FPDP has given the basic introduction of role of a teacher in educational administration and curriculum development.
- Majority of respondents opined that professional training was useful to train a teacher as researcher.
- All the respondents were convinced that FPDP has given them a new motivation to become a more professional teacher with new vigour.

Chapter 5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

The researcher has taken up the study to see the effectiveness of MT-FPDP. The results of the study may provide evidences of effectiveness of present efforts with strengths and weaknesses which will give guidelines to further improve the program. It will provide information to HEC regarding the contribution of length of experience in change in mindset as well as change in the learning and implementation of skills. It will also help the participants to assess their own performance in the light of received training and to improve further in the future. The study will also provide the information on mindset of university teachers in different phases during their career because the study measured the change in mindset of different batches who had attended professional development training in 2003 to 2011. The areas under focus were the extent of knowledge achieved during the program, learning of teaching skills & its application on ground and the change in mindset of teacher after the professional training. The statement of the problem was “Effectiveness of professional development programs on enhancing the knowledge level and changing the professional mindset of university teachers”.

For this purpose, objectives and hypotheses were worked out keeping in view the capabilities and limitations.

Qualitative and quantitative approaches were used in the study: in quantitative approach pre-test post-test design was employed whereas in qualitative approach interviews were conducted in order to triangulate the data.

Population of the study comprised of university teachers from seventy five government universities and eighteen private HEC funded universities who participated in MT-FPDP since 2003 till Nov 2011 and the total strength was 469 teachers from ninety three universities of Pakistan. LID asks from the universities to nominate candidate with maximum five years of service irrespective of department. Sample of the study was in three layers. The first layer of sample non-probability consisted of MT-FPDP-15 twenty eight male and female for pre & post-test and for change in mindset comprised of participants of MT-FPDP-15 & 16 (fifty six teachers from the various universities of Pakistan as per the allocation of seats by HEC). Second layer of sample for survey data consisted of 202 participants out of total population of 441 from FPDP-1 to FPDP- 15 (Gay, 1995). Final layer of sample for interview consisted of 10% (20) randomly selected out of 202 sampled for survey data.

The instrument included constructs that were used to measure mindset; Flexibility, Positivity, Ambition, Honesty, Receptivity, Communication, Collaboration, Patience and Balance (Elizabeth, 2005). Statements for each domain of the construct were formulated on five point scale. Psychometric principles were considered in the process of development of the scale. Each response category was assigned a scale value. A person's score on the mindset on each statement of the construct was added up to obtain a cumulative score. The higher score was taken as indicative of positive mindset score and vice versa. In this study written test, mindset questionnaire, survey questionnaire and interview were used as instruments. The written test was used to measure the effectiveness of training provided by LID. Mindset questionnaire developed by researcher was used to measure the change in mindset of respondents. Survey questionnaire was used to evaluate the extent to

which trainee teachers have acquired the knowledge and skills during training. The interview served the purpose of validation of data collected through other instruments. It also provided in depth understanding about the change in mindset and effectiveness of the delivered contents.

The survey instrument was distributed and collected through department heads of the respective staff members and through email as well. Pretest and posttest data regarding knowledge level and change in mindset was collected from sample n_1 & n_2 .

For interview, Quantitative and qualitative analyses were employed. For qualitative data the triangulation method was used to show the credibility of data collected through interview, Mindset scale, and survey questionnaire.

Depending on the information obtained, the quantitative data (pretest-posttest scores, change in mindset score) was analyzed by means of parametric test, t-test and Pearson Moment Correlation Coefficient. These statistical methods were preferred because of the nature of measurement, scale (Interval scale) and relatively large sample using probability sampling techniques (Systematic random sampling) and research hypotheses. Hypotheses were tested on .05 probability level by using SPSS-18.

5.2 FINDINGS

The analysis revealed the following findings.

1. It was found that the level of knowledge of the university teachers was increased from pre-test mean score (13.2) to post-test mean score (18.2) as mentioned in table no.1.
2. The difference between the pre and the posttest scores was significant at 0.05 level of significance with $t=13.3$ and .001 as reported in table no. 2.

3. With respect to application of professional development practices, it was found that, participants rated the statements relating to the research and curriculum elements as low. Understanding of the research, development of the instruments and sample selection along with the curriculum development needs more attention during the MT-FPDP as per response analysis shown in table no. 3.
4. Regarding perception of the participants towards professional development, it was found that respondents were good in communication, presentation, understanding the responsibilities and role of administration whereas perception for implementation of adaptability to skills related to teaching, examine the different area of educational psychology, satisfaction towards use of psychology and undertake the curriculum activities independently were rated low shown in table no.4.
5. The mindset of the participants was measured using nine sub constructs, the overall responses to the instrument revealed that the mean score of FPDP 15-16 (167) was higher than Mean score of FPDP 1-13 (161) which was statistically significant with t-value =2.716 and p-value=0.007 as indicated in tables 5 and 6.
6. The first component of the mindset was flexibility; the mean score of respondents of FPDP 15-16 (21.1) was higher than mean score of FPDP 1-13 (20.7). The difference between the mean scores was not statistically significant at $\alpha=0.05$ level of significant with t-value=1.00 and p-value=0.319 reference tables 7 and 8.
7. The second component of the mindset was positivity; the mean score of respondents of FPDP 15-16 (15.5) was higher than mean score of FPDP 1-13

- (15.0). The difference between the mean scores was not statistically significant at $\alpha=0.05$ level of significant with $t\text{-value}=1.000$ and $p\text{-value}=0.117$ reference tables 9 and 10.
8. The third component of the mindset was ambition; the mean score of respondents of FPDP 15-16 (14.7) was lower than mean score of FPDP 1-13 (15.8). The difference between the mean scores was statistically significant at $\alpha=0.05$ level of significant with $t\text{-value}=-2.473$ and $p\text{-value}=0.014$ as indicated in tables 11 and 12.
 9. The fourth component of the mindset was honesty; the mean score of respondents of FPDP 15-16 (20.8) was higher than mean score of FPDP 1-13 (20.4). The difference between the mean scores was not statistically significant at $\alpha=0.05$ level of significant with $t\text{-value}=1.118$ and $p\text{-value}=0.265$ reference tables 13 and 14.
 10. The fifth component of the mindset was receptivity; the mean score of respondents of FPDP 15-16 (15.4) was higher than mean score of FPDP 1-13 (14.6). The difference between the mean scores was statistically significant at $\alpha=0.05$ level of significant with $t\text{-value}=1.931$ and $p\text{-value}=0.05$ reference tables 15 and 16.
 11. The sixth component of the mindset was communication; the mean score of respondents of FPDP 15-16 (21.3) was higher than mean score of FPDP 1-13 (20.3). The difference between the mean scores was statistically significant at $\alpha=0.05$ level of significant with $t\text{-value}=2.331$ and $p\text{-value}=0.021$ reference tables 17 and 18.
 12. The seventh component of the mindset was collaboration; the mean score of respondents of FPDP 15-16 (18.1) was higher than mean score of FPDP 1-13

- (16.9). The difference between the mean scores was statistically significant at $\alpha=0.05$ level of significant with $t\text{-value}=3.185$ and $p\text{-value}=0.002$ reference tables 19 and 20.
13. The second last component of the mindset was patience; the mean score of respondents of FPDP 15-16 (26.9) was higher than mean score of FPDP 1-13 (25.5). The difference between the mean scores was statistically significant at $\alpha=0.05$ level of significant with $t\text{-value}=2.320$ and $p\text{-value}=0.021$ reference tables 21 and 22.
 14. The last component of the mindset was balance; the mean score of respondents of FPDP 15-16 (13.1) was higher than mean score of FPDP 1-13 (12.2). The difference between the mean scores was statistically significant at $\alpha=0.05$ level of significant with $t\text{-value}=2.220$ and $p\text{-value}=0.028$ as indicated in tables 23 and 24.
 15. The mindset of experienced and less experienced participants was compared and it was found that mean score of the responses on less experienced participants (166) was significantly higher than the mean score of the experienced participants (161) at $\alpha=0.05$ level of significant with $t\text{-value}=2.747$ and $p\text{-value}=0.007$ as indicated in tables 25 and 26.
 16. The relationship was established between mindset and the implementation level of the university teachers, the application of the Pearson “r” revealed statistically significant positive relationship with $r=0.377$ at 0.01 level of significance reference table no. 27.
 17. The Pearson $r=0.482$ was significant at 0.05 level of significance between perception of implementation level and the knowledge level of the participants as indicated in the table no. 28.

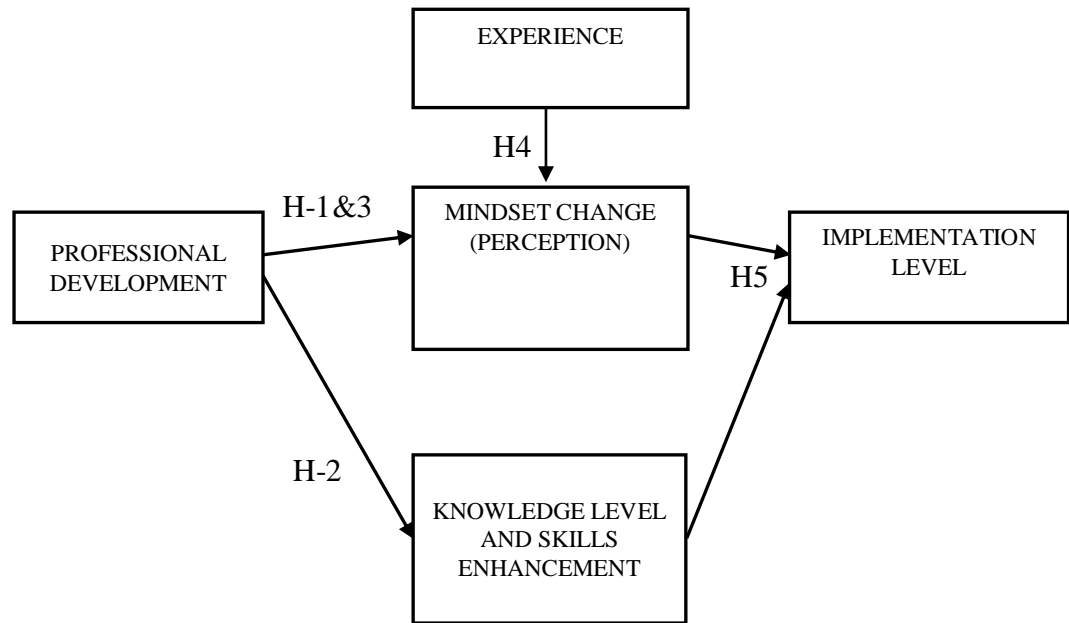
18. The Pearson $r=0.47$ was significant at 0.05 level of significance between perception towards professional development training and implementation level of the participants as indicated in the table no. 29.
19. The qualitative analysis revealed that training was helpful for the participants and has more positive effect on the mindset and the implementation level of the fresh participants.

5.3 DISCUSSION

Teacher education mean imparting training to the pre and in service teachers, based on the knowledge and skills they need to perform their duties in the classrooms effectively. The researchers across the globe have focused this issue by and large and developed models and strategies to optimize the performance of teachers, in this regard, Ornstein and Miller (1980) stressed that the profession of teacher is at par with the other professions. They also highlighted the need for this profession and the teachers training. In teachers' training the context in which this training is being imparted plays a significant role (Hargreaves and Fullan 1996), and the teachers training programs may be evaluated in its context. The evaluation both formative and summative is compulsory component of any training. The LID has a well-built formative evaluation system for the FPDP training but very few attempts for the summative evaluation. This study provided the evidences for the effectiveness of the training provided by LID. Many components have been explored and the discussion on the finding follows below.

Craft (2000) has mentioned that continuous professional development of teachers may include the teachers' subject knowledge, mindset, pedagogical knowledge and the perception towards the implementation of the theory in the actual

setting. This particular study was based on the indicators identified above. For this, the researcher has tested five hypotheses which are given in the diagram.



The analysis revealed the findings which are well aligned with the studies conducted in the other settings. The first finding: that the professional development training of the university teachers conducted by LID of HEC has positive effects on the knowledge level of the university teachers. This finding is aligned with the studies conducted by Prosser and Trigwell (1997) that university teachers understanding of the subject matter and the experience may change their actual performance in the classroom, and Gibbs and Coffey (2004) has also supported the same concept in another context that initial training of the teachers has positive relationship with the teaching learning approaches adopted by the teachers. So, the finding of the study was at par with the studies conducted in the field of knowledge level of the university teachers. Although these two studies focused on the pre service and in service training teachers, but the in service training of the university teachers provided by LID of

HEC help to improve the pedagogical skills to be used in the actual class room setting. The evidences collected from the interview data also supported this finding.

Regarding the application of the teaching practices and skills acquired during the professional development training, in this study it was found that university teachers' level of application about the awareness, communication barriers identification, evaluation of teaching practices and comfort in adoption of the instructions was higher after the training. This finding was also aligned with Norton et.al (2005) study which focused the teachers awareness about the profession and conception has positive impact on their academic interaction. The studies of the Eley (2006) and Kane et. al. (2002) also presented the almost similar results. Feixas (2010) study upon the effect of teachers' preparation on pedagogical understanding, orientation and approaches is also aligned with the finding of this study with specific reference to comfort in adoption of teaching practices and awareness. Many researchers (Ho, A.2000, Stes, etal 2007, Postareffetal. and Feixas, 2010) have confirmed the extended pedagogical training challenging conception of teaching effect the self-efficacy of the teachers. The finding that MT-FPDP has positive impact on the change in mindset of the university teachers is same as that stated by the already conducted researches in this area. But specifically that it has more positively affected the mindset of newly inducted university teachers has less support from the literature, therefore the generalization of this finding may be carefully considered. One such evidence that support this claim is the induction training which is common across the globe. It was also focused that this training has more positive effect on the change in mindset of less experience university teachers as compared to more experienced which is same as that of the study of Rader II (2008) and Smith & Holfer (2003). Teachers of different fields enter into the job with different mindset towards

the profession, some may have more strength in content knowledge and some may be strong in pedagogical skills but the mindset towards the teaching professions play a significant role towards the classroom effectiveness of the teachers. Therefore the mindset may be focused during the induction and in service training of the teacher of any field as identified by many researchers (Ho, A.2000, Feixas 2010 and Smith & Holfer 2003).

The findings showed that the professional development training is effective for changing the mindset of the university teacher. The different components of mindset such as flexibility, positivity, honesty were the components of mindset and have the same effect for all the participating university teachers, but receptivity, communication, collaboration, balance and patience were found higher in MT-FPDP 15-16 batches, as compared to MT FPDP 1-13 batches. Flexibility, positivity and honesty may not be the time bound virtues in our society, as these virtues every individual learn from the family and friends, and an individual may reach towards the maturity, whereas communication collaboration, balance and patience may be time bound. An individual learn with the passage of time and training have more effect on these constructs of the university teachers. This finding was again aligned with studies conducted on attitude of the teacher education and prospective teachers (Seyoum, 2011, Komba Nkumbi 2008, and Fekadu 2008). So, there are enough evidences to claim that the professional development training of the university teachers has positive effect on the change in mindset. The claim about Receptivity, Communication, Collaboration, Balance and Patience is not having enough support from the literature. The overall, it was found that professional development training of the university teachers has positive effect on the implementation level, change in mindset and pedagogical knowledge of the university teachers. The finding of this

study are well supported by the literature and are consistent with the studies (Dweck, 2008, Ksasing & Dewitt, 2007, Smith and Holfer, 2003 Boyle, which and Baloye, 2003).

This discussion on the findings of the study leads to the conclusions presented in the next section.

5.4 CONCLUSIONS

The findings of the study lead to the following conclusions.

1. From the findings, it can be concluded that professional development training of the university teachers has positive impact on the knowledge levels of participants of MT-FPDP 1 to 16.
2. The training has enhanced the application of professional development practices of the participants university teachers at their job in the areas of awareness, identification of communication barrier, evaluation of teaching practices and comfort in the adoption of instructions whereas the participating teachers need more training regarding understanding of the research, development of instruments, sample selective and curriculum development as these were rated low.
3. The change in mindset of the fresh trainees was higher than the previous one.
4. Flexibility, positivity, honesty has same effect towards the change in mindset of 1 to 13 and 15 to 16 MT-FPDP batches.
5. The participating university teachers of MT-FPDP 1 to 13 were more ambitious than the MT-FPDP 15 to 16.

6. Receptivity, communication, collaboration, balance and patience of MT-FPDP 15 to 16 batches were more than the MT-FPDP 1 to 13 Batches towards change in mindset.
7. Faculty development training has more effects on the change in mindset of the less experienced university teachers as compared to experienced university teachers.
8. Change in mindset has positive relationship with the implementation level of the university teachers while on their job.
9. Knowledge level of the university teacher was significantly related with the implementation level.
10. Perception towards the professional development training of the university teachers were significantly related with the implementation level.

5.5 RECOMMENDATIONS

1. As MT-FPDP has positive effect on the knowledge and pedagogical level of university teachers therefore it is recommended that the training may be continued in future.
2. It is recommended that understanding of research, development of instrument, sample selection and curriculum development areas may be allocated more time during the faculty development training of university teachers.
3. It is recommended that faculty development training courses may be run after 10 years rather than offering once in a career.
4. It is recommended that component of ambition may be allocated more time and contents for university teachers getting training first time.

5. Receptivity, communication skills, collaboration, balance and patience may be focused more in the term of the training.
6. Early faculty development training is recommended as it has more effects on the change in mindset of newly inducted teachers.
7. Change in mindset may be focused more during training rather than content knowledge as it has more effect on implementation level of the university teachers.

5.6 RECOMMENDATIONS FOR FURTHER RESEARCH

1. It was found that the faculty development training is less effective on the research and curriculum development components of the participating teachers; therefore the researcher recommends further research to find the reasons about the less effectiveness of the training regarding research and curriculum development.
2. The faculty development training has affected change in mindset of the less experienced participating teachers more than the experienced teachers, so it is recommended that qualitative study may be conducted to identify the reasons and the components of the training may work well in this regard.
3. The researcher has collected the knowledge level data from one batch, therefore further research regarding change in pedagogical knowledge level and its retention may be conducted.
4. It is recommended that the future researchers may also include the feedback from the students of the trainee teachers for evaluation of training programs.

BIBLIOGRAPHY

- Åkerlind, G.S. (2003). Growing and developing as a university teacher: Variation in meaning. *Studies in Higher Education*, 28 (4), 375–390.
- Åkerlind, G.S. (2005). Academic growth and development: How do university academics experience it? *Higher Education*, 50 (1), 1–32.
- Anderson, D. Brown, S. & Race, P. (1998). *500 Tips for Further and Continuing Education Lecturers*. London: Stirling.
- Barber, M. & Mourshed, M. (2007). *How the world's best performing school systems come out on top*. McKinsey and Co.
- Beattie, M. (2001). *The Art of learning to Teach: Pre-service teacher Narratives*. New Jersey: Merrill /Prentice Hall.
- Beattie, M. (2002). *Finding new words for old songs: Creating relationship and community in teaching education*. In H. Christiansen & S. Ramadevi (Eds.). *Reading the educator: Global perspective on community Building* (pp. 16-35). State University of New York Press.
- Booklet, Compiled by Learning Innovative Division of HEC (2005).
- Bos, C. & Anders, P. (1994). The study of student change. In V. Richardson (ed.), *Teacher Change and the Staff Development Process: A Case in Reading Instruction* (pp. 181-198). New York: Teachers College Press.
- Bottery, M. (2006). Education and globalization: Redefining the role of the educational professionals. *Educational Review*, (58(1), 95-113).
- Boyer, E.L. (1990). *Scholarship reconsidered: Priorities of the Professoriate*. NJ: The Carnegie Foundation for the Advancement of Teaching.
- Boyle, B., While, D. & Boyle, T. (2003). A Longitudinal Study of Teacher Change: What makes professional development effective? *Report of the second year of the study. School Effectiveness and School Improvement*, Vol. 16, No. 1, March 2005, pp. 1 – 27.
- Brew, A. & Ginns, P. (2008). The relationship between engagement in the scholarship of teaching and learning and students' course experiences. *Assessment and Evaluation in Higher Education*, 33(5), 535–545.
- Brooks, M. G. and Brooks, J. G. (Fall, 1987). Becoming a Teacher for Thinking: Constructivism, Change, and Consequence. *Journal of Staff Development* 8, 3: 16-20.
- Brooks, M.G., & Brooks, J.G. (1999). *The Courage to be constructionist*. *Educational Leadership*, 57(3), 18-24.
- Butt, M. H. and Shams, F. (2007). *Final Report on Quality Assurance of Teacher Training Programs: Directorate of Staff Development & Punjab, World Bank & UNESCO, Islamabad*.

- Calderhead, J. (1996). Teachers' beliefs and knowledge. In R. C. Calfee & D. C. Berliner (Eds.), *Handbook of educational psychology* (pp. 709–725). New York: Simon and Schuster.
- Caldwell, S. ed. (1989). *Staff Development A Handbook of Effective Practices*. Oxford, Ohio: The National Staff Development Council.
- Campbell, E. (2005). Challenges in fostering ethical knowledge as professionalism within school teaching communities. *Journal of Educational Change*, 6(3), 207-226.
- Choksi, A., & Dyer, C. (2000). North-south collaboration in educational research: Reflection on Indian experience. In Crossly & G. Vulliamy (Eds.). *Qualitative educational research in developing countries* (pp. 265-294). London: Garland Publishing, Inc.
- Cilliers, F. J. & Herman, N. (2010). Impact of an educational development programme on teaching practice of academics at a research-intensive university. *International Journal for Academic Development*, 15(3), 253-267.
- Clendenin, D.J. & Connelly, M. F. (1995). Teachers' Professional Knowledge Landscape: Secret, Sacred, and Cover Stories. In D.J. Clendenin, M.F. Connelly (Eds.) *Teachers' Professional Knowledge Landscapes* (pp.1-15). New York: Teachers College Press.
- Cocheran-Smith, M. & Fries, M. K. (2001). Sticks, stones, and ideology: The discourse of the reform in teacher education. *Educational Research*, Vol. 30, No.8, pp. 3-15.
- Cole, A.C. & Knowles, J.G. (2000). *Researching Teaching: Exploring Teacher Development through Reflexive Inquiry*. Toronto: Allyn & Bacon.
- Craft, A. (2000). *Continuing Professional Development*. London: Rout ledge Falmer.
- Creswell, J. W (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. (2nd ed.) Thousand Oaks, CA: Sage.
- Cuban, L. (1988). Constancy and change in schools (1880's to the present). In P. Jackson (ed.), *Contribution to Educational Change: Perspectives on Research and Practice* (pp. 85-106). Berkeley, CA: McCutcheon.
- Dall'Alba, G. (1991). Foreshadowing conceptions of teaching. In B. Ross (Ed.), *Research and Development in Higher Education*, 13 (pp. 293–297). Sydney: HERDSA.
- Darling-Hammond, L. (1996). Teachers and Teaching: Sign of a Changing Profession. In W.R. Houston (Ed.), M. Huberman, J. Sikula (Associate Eds.) *Handbook of Research on Teacher Education*. New York: Macmillan Publishing Company.
- Darling-Hammond, L. (2002). Variation in Teacher Preparation: How Well Do Different Pathways Prepare Teacher to Teach. *Journal of Teacher Education*, 53(4), 286-302.

- Davis, L. & Iqbal, Z. (1997). Tension in Teacher Training for School Effectiveness: The Case of Pakistan. *School Effectiveness and School Improvement, Vol. 8, No. 2, pp. 254-266.*
- Dawson, K. (2006). Teacher inquiry: A vehicle to merge prospective teachers' experiences and reflection during curriculum-based, technology-enhanced field experience. *Journal of Research on Technology in Education, 38(3), 265-292.*
- Day, C. (2000). *Developing teachers: The challenges of lifelong learning.* London, UK: The Falmer Press.
- Devaney, K. (1977). *Essays on Teachers' Centers.* San Francisco: Far West Laboratory for Educational Research and Development.
- Devany, K. & Sykes, G. (1988). In A. Lieberman, (ed.) *Building a Professional Culture in Schools.* New York: Teachers College Press.
- Dewey, J. (Ed.) (1964). *John Dewey on Education: Selected writing: Chicago,* University of Chicago Press.
- DIFSD and USAID.(2006). *Options and Recommendations for Education Sector Budget Support in Pakistan.*
- Directorate of Staff Development, Punjab, Lahore (2006). *Continuous Professional Development Framework for Primary School Teachers. Professional Development for Quality Learning.*
- Duffy, G. & Roehler, L. (1986). Constraints on teacher change. *Journal of Teacher Education, 35, 55-58.*
- Dweck, C.S. (2008). *Mindset: The new Psychology of Success.* USA: Random House, Ballemine Books.
- Eley, M. (2006). Teachers' conceptions of teaching, and the making of specific decisions in planning to teach. *Higher Education, 51(2) 191-21.*
- Eraut, M. (2007). Theoretical and practical knowledge revisited. *Paper presented at the 12th Conference EARLI.* Budapest, Hungary, August 28-September 1.
- Fakir Mohammad, R., Vazir, N., Kumari, R. and Hassan, M. (2007). *Impact of Donor-funded In-service Teacher Education Projects on Teaching and Learning in the Province of Sindh.* (Draft Report). Aga Khan University, Institute for Educational Development, Karachi,
- Fechner, K.M. (1983). Alternative Paradigms of Teacher Education. *Journal of Teacher Education, 39(3), 3-9.*
- Fechner, K.M., & Liston, D.P. (1985). Varieties of Discourses in Supervisory Conferences. *Teaching and Teacher Education, Vol.47, No.2, pp.155-174.*
- Feiman-Nemser, S. (1990). Teacher Preparation: Structural and Conceptual Alternatives. In J. Sikula (Ed.). *Handbook of Research on Teacher Education (212-233).* London: Prentice Hall International.

- Feixas, M. & Zellweger, F. (2010). Faculty Development in Context: Changing Learning Cultures in Higher Education. In D. Schneckenberg & U. D. Ehlers (Eds.), *Changing cultures in higher education: Moving ahead to future learning* (pp. 85-102). Heidelberg: Springer.
- Feixas, M. (2010). *E-journal of Educational Research, Assessment and Evaluation*, 16(2), 1-27. Retrieved from http://www.uv.es/RELIEVE/v16n2/RELIEVEv16n2_2.htm
- Fekadu, C. (2007). *Evaluating Teacher Professional Development Practices in Higher Education Institutions*. MA Thesis, Unpublished.
- Fenstermacher, G. D. (1994). The place of practical arguments in the education of teachers. In V. Richardson (ed.), *Teacher Change and the Staff Development Process: A Case in Reading Instruction* (pp. 23-42). New York: Teachers College Press.
- Fosnot, C. T. (1989). *Enquiring Teachers, Enquiring Learners: A Constructivist Approach to Teaching*. Wolfeboro, N.H.: Teachers College Press.
- Fosnot, C.T. (2005). Constructivism revisited: Implications and reflections. In C.T. Fosnot (Ed.), *Constructivism: Theory, perspective and practice (2nd Edition)* (pp.276-292). New York: Teachers College Press.
- Fred, T. (2000). *Pathways to teacher professional development*. Unpublished Masters' Thesis, Aga Khan University-Institute for Educational Development.
- Frontier Education Foundation (2006). *Group Work & Recommendations. National Workshop on Education System in Pakistan & 21st Century*. Peshawar, June 12-14, 2006.
- Fullan, M. (1992). *Successful school improvement*. Buckingham: Open University Press.
- Fullan, M. (1993). Why teachers must become change agents. *Educational Leadership*, 50(6), 12-17.
- Fullan, M. (2001). *The New Meaning of Educational Change* (3rd Ed.). Toronto: Irwin Publishing Ltd.
- Fullan, M. G. (1991). *The New Meaning of Educational Change*. New York: Teachers College Press.
- Fullan, M. & Miles, M. (1992). Getting reform right: What works and what doesn't. *Phi Delta Kappan*, 73(10), 744-752.
- Fullan, M.G. & Stielgebauer, S. (1991). *The new meaning of educational change*. New York: Teacher College Press.
- Furniss, Elaine (2005). *Report of a Needs Assessment of Government Colleges for Elementary Teachers, Punjab Province, Pakistan*. Government of Pakistan-UNICEF Program of Cooperation.

- Gallagher, M., Goudvis, A. & Pearson, P. D. (1988). Principles of organizational change. In S. J. Samuels & P. D. Pearson (eds.), *Changing School Reading Programs* (pp. 11-39). Newark, DE: International Reading Association.
- Gay, L.R. (1995). *Educational evaluation & measurement: Competencies for analysis and application*. Published by C.E. Merrill Pub Co.
- Gibbs, G. & Coffey, M. (2004). The impact of training of university teachers on their teaching skills, their approach to teaching and the approach to learning of their students. *Active Learning in Higher Education*, 5(1), 87–100.
- Gilbert, A. & Gibbs, G. (1998). A proposal for a collaborative international research programme to identify the impact of initial training on university teaching. *In Proceedings of HERDSA Conference*, 21, 131-143.
- Giroux, H.A. (1995). Teachers as Public Intellectuals. In Ornstein, A.C. (Ed.). *Teaching: Theory into Practice* (pp. 373-384), Boston: Allyn and Bacon.
- Glaserfeld, E. V. (2005). Introduction: Aspect of constructivism. In C.T. Fosnot (Ed.). *Constructivism: Theory, perspective and practice (2nd Edition)* (pp.3-7). New York: Teachers College Press.
- Glatthorn, A.A. (1992). *Teachers as agents of change: A new look at school improvement*. Washington, D.C.: National Educational Association.
- Goodlad, J. (1994). *Educational Renewal: Better Teachers, Better Schools*. San Francisco: Jossey-Bass.
- Goodson, I. (1992). *Studying Teachers' Lives*. New York: Teacher College Press.
- Government of Pakistan (2002). *Draft of National Plan of Action on Education for All (2000-2015)*. Ministry of Education, Islamabad.
- Government of Pakistan (2002). *Task Force on Improvement of Higher Education in Pakistan*.
- Government of Pakistan (2002b). *Report of the committee of experts on standard of education improvement at SSC and HSSC levels*.
- Government of Pakistan (2004). *Education Sector Reforms: Action Plan 2001-02 to 2005-06*. Ministry of Education.
- Government of Pakistan (2004). *Public Private Partnership in the Education Sector: Education Sector Reforms Action Plan 2001-2005: Policy, Options, Incentive Package and Recommendations*. Ministry of Education, Islamabad.
- Government of Pakistan. (2004). *The development of Education: National Report of Pakistan*, Ministry of Education, Islamabad.
- Government of Pakistan. (2005). *National educational assessment system*. Ministry of Education, Islamabad

- Government of Pakistan. (2006a). *Education in Pakistan: A white paper, document to debate and finalize the national education Policy, National Education Policy Review Team*, Ministry of Education.
- Government of Pakistan. (2006b). *National Education Conference 2006: Delegate Brief*, Ministry of Education.
- Government of Pakistan. (2006c). *Quality and Standards in Education: Identifying Challenges and Solutions: Teacher Education and Assessments*. Group Discussion. National Education Conference. Ministry of Education
- Government of Pakistan (2009). *National Education Policy*. Ministry of Education.
- Grif, N. G. (1986). Clinical teacher education. In J. Hoffman & S. Edwards (eds.), *Reality and Reform in Clinical Teacher Education* (pp. 1-24). New York: Random House.
- Grossman, P. (2005). Research on pedagogical approaches in teacher education. In M. Cochran-Smith & K. Zeichner (Eds.), *Studying teacher education. The report of the AERA panel on research and teacher education* (pp. 425-476). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gulzar, H.S., Bari, F. & Ejaz, N. (2005). *The role of NGO in Basic education in Pakistan*.
- Guskey, T. (1996). *Evaluating Professional Development*. California: Crowin Press.
- Hanbury, A., Prosser, M. & Rickinson, M. (2008). The differential impact of UK accredited teaching development programmes on academics' approaches to teaching. *Studies in Higher Education*, 33(4), 469-483.
- Handy, C. (2006). *Myself and other more Important Matters*. Washington, D.C. AMACOM.
- Hargreaves, A. & Fullan, M. G. (1996). *Understanding Teacher Development Teachers College*. Columbia University: New York.
- Healey, M (2003). The scholarship of teaching: issues around an evolving concept. *Journal on Excellence in College Teaching*, 14(1/2), 5-26.
- Ho, A. (2000). A conceptual change approach to staff development: A model for programme design. *The International Journal for Academic Development*, 5 (1), 30-41.
- Holmes, E. (2005). *Teacher Well-being*. USA: Routledge Falmer.
- Holton, E. F. III, Bates R. A. & Ruona, W. E. A. (2000). Development of a generalized learning transfer system inventory. *Human Resource Development Quarterly*, 11(4), 333-360.
- Joyce, B. and B. Showers.(1988). *Staff Development and Student Achievement*. New York: Longman. Kyle, W. C., Jr., S. Abell, and J. A. Shymansky.(Spring 1989). *Enhancing Prospective Teachers' Conceptions of Teaching and Science*. *Journal of Science Teacher Education* 1, 1: 10-13.

- Kandel, E. R. (2007). *In search of memory: The emergence of a new science of mind*. New York: W. W. Norton and Company.
- Kane, R., Sandretto, S. & Heath, C. (2002). Telling half the story: A critical review of research on the teaching beliefs and practices of university academics. *Review of Educational Research*, 72(2), 177-228.
- Kember, D. & Gow, L. (1994). Orientations to teaching and their effect on the quality of student learning. *Journal of Higher Education*, 65(1), 58–74.
- Kember, D. & Kwan, K. (2000). Lecturers' approaches to teaching and their relationship to conceptions of good teaching. *Instructional Science*, 28(5), 469-490.
- Kember, D. (1998). A reconceptualisation of the research into university academics' conceptions of teaching. *Learning and Instruction*, 7(3), 255–275.
- Kirkpatrick D. L. (1998). *Evaluating Training Programmes: The Four Levels*. (2nd edition). San Francisco: Berrett-Koehler Publishers, Inc.
- Klein, D. (1969). Some notes on the dynamics of resistance to change: The defender role. In W. Bennis, K. Benne & R. Chin (eds.), *The Planning of Change* (pp. 498-507). New York: Holt, Rinehart and Winston, Inc.
- Kluwer Academic Publishers Report, Evaluations. (2003). *A practical overview based on research and experience*. Boston.
- Knight, P. (2006). *The effects of postgraduate certificates: A report to the project sponsor and partners*. The Institute of Educational Technology, The Open University. Retrieved from <http://kn.open.ac.uk/public/document.cfm?docid=8640>
- Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Komba, W. & Nkumbi, E. (2008). Teacher Professional Development in Tanzania: Perceptions and Practices. *Journal of international Cooperation in Education: Vol. 11 No.33*, pp. 67-83.
- Kreber, C. & Brook, P. (2001). Impact evaluation of educational development programmes. *International Journal for Academic Development*, 6 (2), 96-108.
- Kugel, P. (1993). How professors develop as teachers. *Studies in Higher Education*, 18(3), 315–328.
- Lessing, A. & De Witt, M. (2007). The Value of continuous professional development: Teachers' perceptions. *South Africa: Journal of Education. Vol 27 (1)*, pp.53-67.
- Lindblom-Ylänne, S., Trigwell, K., Nevgi, A. & Ashwin, P. (2006). How approaches to teaching are affected by discipline and teaching context. *Studies in Higher Education*, 31(3), 285–291.
- Little, J. W. (1992). The black box of professional community. In A. Lieberman (ed.), *The Changing Contexts of Teaching* [Ninety- 1st yearbook of the National

- Society for the Study of Education, Part 1] (pp. 157-178). Chicago: University of Chicago Press.
- Loucks-Horsley, S., C. Harding, M. Arbuckle, C. Dubea, M. Williams, and L. Murray. (1987). *Continuing to Learn: A Guidebook for Teacher Development*. Andover, Mass.: The Regional Laboratory for Educational Improvement of the Northeast and Islands, and Oxford, Ohio: The National Staff Development Council.
- Loucks-Horsley, S., M. Carlson, L. Brink, P. Horwitz, D. Marsh, H. and Worth, K. (1989). *Developing and Supporting Teachers for Elementary School Science Education*. Andover, Mass.: The National Center for Improving Science Education, The NETWORK, Inc.
- Madaus, S. & Scriven. (1983). A Framework for the Evaluation of a Self-Access Language Learning Centre. *Proceedings of the Independent Learning Association Conference Inaugural – 2005*.
- Marsick, V. J. & Watkins, K. (1990). *Informal and incidental learning in the workplace*. London and New York: Routledge.
- Marton, F. & Säljö, R. (1997). Approaches to learning. In F. Marton, D. Hounsell & N.J. Entwistle (Eds.), *The experience of learning* (pp. 39-58). Edinburgh: Edinburgh Scottish Academic Press.
- McAlpine, L. & Weston, C. (2000). Reflection: Issues related to improving professors' teaching and students' learning. *Instructional Science*, 28(5), 363-385.
- McIntyre D. J. & Byrd, M. D. (2000). *Research on Effective Models for Teacher Education*. California Corwin Press: Inc. Thousand Oaks.
- Meyer, L. (1988). Research on implementation: What seems to work. In S. J. Samuels & P. D. Pearson (eds.), *Changing School Reading Programs* (pp. 41-57). Newark, DE: International Reading Association.
- Minale, A. (2006). *Evaluating Professional Development of Teacher Educators in Ethiopia. A case Study of Higher Diploma at Addis Ababa University*, An unpublished Masters Thesis.
- Morimoto, K. (1973). Notes on the context for learning. *Harvard Educational Review*, 10(4), 245-257.
- Muraskin, L. (2007). *Understanding Evaluation: The Way to Better Prevention Programs* Westat: Inc
- Murray, K., & Macdonald, R. (1997). The disjunction between lecturers' conceptions of teaching and their claimed educational practice. *Higher Education*, 33(3) 331–349.
- NCSALL. (2003). *National Center for the Study of Adult Learning and Literacy, at World Education*. Boston: 44 Farnsworth Street.

- Norton, L., Richardson, J. T. E., Hartley, J., Newstead, S. & Mayes, J. (2005). Teachers' beliefs and intentions concerning teaching in higher education. *Higher Education*, 50(4), 537–571.
- Nyquist, J.D., & Sprague, J. (1998). Thinking developmentally about TAs. In M. Marincovich, J. Prostko, & F. Stout (Eds), *The professional development of graduate teaching assistants* (pp.61-88). London: Anker Publishing Company.
- OECD (Organisation for International Co-operation and Development). (2009). *Teaching and Learning International Survey (TALIS)*. Paris: OECD.
- Ornstein, Allan.C. & Miller, H. L. (1980). *Looking into Teaching*. Chicago: Rand McNally College Publishing Company.
- Patton, M. Q. (2004). On evaluation use: Evaluative thinking and process use. *The Evaluation Exchange IX* (4).
- Payne, D.A. (1994). *Designing educational project and program Teaching and Learning International Survey*. Luxembourg: Office for Official Publications of the European Union.
- Pendlebury, S. (1990). Community, liberty and the practice of teaching. *Studies in Philosophy and Education*, 10(4), 263-279.
- Placier, P. & Hamilton, M. L. (1994). Schools as contexts: A complex relationship. In V. Richardson (ed.), *Teacher Change and the Staff Development Process: A Case in Reading Instruction* (pp. 135-159). New York: Teachers College Press.
- Postareff, L., Katajavuoria, N.; Lindblom-Ylänne, S.& Trigwell, K. (2008). Consonance and dissonance in descriptions of teaching of university teachers. *Studies in Higher Education*, 33(1), 49–61.
- Postareff, L., Lindblom-Ylänne, S. & Nevgi, A. (2007). The effect of pedagogical training on teaching in higher education. *Teaching and Teacher Education*, 23(5), 557-571.
- Postareff, L., Lindblom-Ylänne, S. & Nevgi, A. (2008). A follow-up study of the effect of pedagogical training on teaching in higher education. *Higher Education*, 56(1), 29–43.
- Patton, M. (1990). *Qualitative evaluation and research methods* (pp. 169-186). Beverly Hills, CA: Sage.
- Pratt, D. D. (1992). Conceptions of teaching. *Adult Education Quarterly*, 42(4), 203–220.
- Prosser, M., & Trigwell, K. (1997). Relations between perceptions of the teaching environment and approaches to teaching. *British Journal of Educational Psychology*, 67(1), 25–35.
- Ramsden, P. (2003). *Learning to teach in higher education*. (2nd ed.). London: Routledge.

- Richardson, V. (1990). Significant and worthwhile change in teaching practice. *Educational Researcher*, 19(7), 10-18.
- Richardson, V. (ed.). (1994). *Teacher Change and the Staff Development Process: A Case in Reading Instruction*. New York: Teachers College Press.
- Richardson, V., Anders, P., Tidwell, D. & Lloyd, C. (1991). The relationship between teachers' beliefs and practices in reading comprehension instruction. *American Educational Research Journal*, 28(3), 559-586.
- Robertson, D.L. (1999). Professors' perspectives on their teaching: A new construct and developmental model. *Innovative Higher Education*, 23(4), 271-294.
- Samuelowicz, K. & Bain, J.D. (2001). Revisiting academics' beliefs about teaching and learning. *Higher Education*, 41, 299-325.
- Sch"n, D. A. (1983). *The Reflective Practitioner*. New York: Basic Books.
- Scheffler, I. (1976). Basic mathematics skills: Some philosophical and practical remarks. *Teachers College Record*, 78(2), 205-212.
- Smylie M. & Conyers, J. (1991). Changing Conceptions of Teaching Influence the Future of Staff Development. *Journal of Staff Development*, 12 (1): 12-16.
- Sparks, D. & Loucks-Horsley, S. (1990). Models of staff development. In W. R. Houston (ed.), *Handbook of Research on Teacher Education* (pp. 234-250). New York: Macmillan.
- Sparks, D., and S. Loucks-Horsley. (Fall 1989). Models of Staff Development. *Journal of Staff Development* 10, 4: 40-59.
- Stallings, J. & Krasavage, E. (1986). Program implementation and student achievement in a four-year Madeline Hunter Follow-Through project. *Elementary School Journal*, 87(2), 117-138.
- Stes, A., Clement, M. & Van Petegem, P. (2007). The effectiveness of a faculty training programme: Long-term and institutional impact. *International Journal for Academic Development*, 12(2), 99-109.
- Stes, A., Min-Leliveld, M.J., Gijbels, D. & Van Petegem, P. (2010). The impact of instructional development in higher education: A state-of-the-art of the research. *Educational Research Review*, 5(1), 25-49.
- Trigwell, K., Prosser, M. & Waterhouse, F. (1999). Relations between teachers' approaches to teaching and students' approaches to learning. *Higher Education*, 37(1), 57-70.
- Trigwell, K., Prosser, M., Martin, E. & Ramsden, P. (2005). University teachers' experiences of change in their understanding of the subject matter they have taught. *Teaching in Higher Education*, 10(2), 251-264.
- Valdez, A. (1992). *Changes in teachers' beliefs, understandings, and practices concerning reading comprehension through the use of practical arguments: A*

follow-up study [Unpublished dissertation], Tucson, AZ: College of Education, University of Arizona.

Vermunt, J., & Endedijk, M. D. (2011). Patterns in teacher learning in different phases of the professional career. *Learning and Individual Differences, 21*, 294-302. *Education, 18*(4), 465-487.

Wasley, P.A. (1992). *Working Together: Teacher Leadership and Collaboration in Carol Livingston, (ed.) Teachers as Leaders: Evolving Roles. NEAS School Restructuring Series*, National Education Association: Washington, D.C.

Zeichner, K., & Liston, D. P. (1987, 23-48). Teaching student teachers to reflect. *Harvard Educational Review, 57*(1), 3-9.

INTERVIEW PROTOCOL

Name:	Total Time:
University:	Department:
Start Time:	Stop Time:
Specialization:	Qualification:
Age:	Experience:
MT-FPDP	Year of Training:

QUESTIONNAIRE

1. Do you think that FPDP helped you in understanding of responsibilities & duties towards the teaching profession and in producing professional teachers, who have the theoretical knowledge and understanding, combined with practical skills, competencies and commitment to teach at high national standards?
2. Are you able to trickle down quality education & knowledge to your students as expected of you after attending FPDP?
3. Can you conduct a program similar to FPDP in your own institution?
4. Are you in position to examine the different areas of educational psychology and their status in educational process?
5. Did FPDP assist you to learn to construct tests according to the objectives of the taught material?
6. Can you identify various barriers to effective communication and can also overcome them?
7. Do you take active part in the process of curriculum development in professional life?

8. Can you understand and apply proper type of research in its actual manner and can develop valid and reliable research instruments suitable to studies?
9. Have you developed some more interest in learning new concepts and strategies which can help you in making you a good teacher?

Appendix B

Col Adnan Saleem
Director Army Museum
Iftikhar Janjua Road
Rawalpindi Cantt
Mob: 03466711750

Noor Amna Malik
Director General
Learning Innovation Division

I hope my letter will find you in the best of your health and high spirit. I am putting on twenty five years of service in Pakistan Army and at the moment I am serving in GHQ as Director Army Museum. During my career, beside staff appointments, I have served as an instructor in Pakistan Military Academy for ten years and looked after F G Institutions of Sialkot Cantt for two years as Secretary.

Beside my military service, I kept on improving my qualification and did MA (English) PU, MA (EPM) AIOU, MA (Educational Administration) PU and M.Phil leading to PhD (Teacher Education) from AIOU. With the grace of Allah, I am in the process of preparing synopsis for my PhD Thesis.

I have taken teacher education at university level for my research and in this regard the effort of HEC with special reference to Faculty Professional Development Program (FPDP) is the major landmark in this field.

It is requested that I may please be facilitated in provision of data regarding FPDP as and when required for my research to evaluate the impact of the program.

Your cooperation in this regard will highly be appreciated.

Date: 14 April 2011

Yours

Sincerely

Marking Rubric – Written Pre/Post-Test

Q.No	Marking Criteria	Marks Distribution
Q-1	<ul style="list-style-type: none"> • Irrelevant or no answer • One relevant character • Two relevant characters • Three relevant characters • Four relevant characters • Five relevant characters 	<p>0</p> <p>½</p> <p>1</p> <p>1 ½</p> <p>2</p> <p>2 ½</p>
Q-2	<ul style="list-style-type: none"> • Irrelevant or no answer • Justification for whole to part maxim • Justification with logical coherence 	<p>0</p> <p>1</p> <p>2</p>
Q-3	<ul style="list-style-type: none"> • Irrelevant or no answer • For every one principle (total 10 with 5 marks) 	<p>0</p> <p>½</p>
Q-4	<ul style="list-style-type: none"> • Irrelevant or no answer • One valid justification • Two valid justifications 	<p>0</p> <p>1</p> <p>2</p>
Q-5	<ul style="list-style-type: none"> • Irrelevant or no answer • Listing three types of tests • Functions of each test 	<p>0</p> <p>1</p> <p>1 ½</p>

Q-6	<ul style="list-style-type: none"> • Irrelevant or no answer • Diagnostic Phase (1/2 mark for each) • Proactive Phase (1/2 mark for each) <ul style="list-style-type: none"> ✓ Vague Plan- 1/2 ✓ Plan not up to mark-1 ✓ Plan clearly depicted-2 ✓ Plan defined and implementable- 2 1/2 	<p>0</p> <p>2 1/2</p> <p>2 1/2</p>
Q-7	<ul style="list-style-type: none"> • Irrelevant or no answer • For every technique 	<p>0</p> <p>1/2</p>
Q-8	<ul style="list-style-type: none"> • Irrelevant or no answer • For each objective • Max 2 Mks marks for 5 objectives 	<p>0</p> <p>1/2</p>
Q-9	<ul style="list-style-type: none"> • Irrelevant or no answer • Mark for each technique 	<p>0</p> <p>1/2</p>
Q-10	<ul style="list-style-type: none"> • Irrelevant or no answer • Marks for each strength (upto 3 strengths) • Marks for each weakness (upto 3 weakness) 	<p>0</p> <p>1 1/2</p> <p>1 1/2</p>



HIGHER EDUCATION COMMISSION ISLAMABAD

15th Mater Trainer Faculty Professional Development Program LEARNING INNOVATION DIVISION (Post-Test)

Name: _____

Department: _____

University: _____

Time: 60 minutes

Marks: 30

Q.No.1 What does teaching profession demands? 2.5 marks

1. _____
2. _____
3. _____
4. _____
5. _____

Q.No.2 Chalk out ten basic Principles of effective Time Management. 3.5 marks

Q.No.3 How can you as a Teacher become an Agent of Social Change?
Give examp 2.5 mark

Q.No.4 Differentiate between behaviorism and constructivism theories of learning and give examples from real life. 3 marks

Q.No.5 Write four types of individual differences are found in students and formulate one strategy/technique for handling each type of difference. 4 marks

Q.No.6 Briefly define the following: 2.5 marks

- Independent variable

- Extraneous variable

- Achievement Test

- Reliability_____

- Stratified Sampling_____

Q.No.7 Define the Communication Process and justify as to which stage is the most critical and why? 5 marks

Q.No.8 After having intensive micro teaching sessions, give your strengths and weaknesses as a university teacher?2 marks

Q.No.9 Arrange the information provided below in a proper referencing format. 3 marks

Andrew Nelson

Managing business ethics: Straight talk about how to do it right

NJ: Wiley

2007

Hoboken

- Porter Bochner & Helber Duchesne

2006

2nd edition

South Melbourne

Australia: Thomson

Educational Psychology for learning and teaching

- Rao Sainaghi

40-57

2008

Strategic position and performance of winter destinations

Tourism Review

63(4)

Q.No.10 How will you encourage students for questioning you during 2 marks the class?

**OUTLINES OF THE MODULES OF THE
PROFESSIONAL COMPETENCY ENHANCEMENT PROGRAM
FOR UNIVERSITY TEACHERS (PCEPT)**

MODULE-1 Teaching as a Profession

Expected Outcomes	Concepts / Contents	Time Required (Sessions)
Passion for teaching profession (Discussion)	Education and its importance Teaching and its importance My role as a teacher Understanding of the term “profession” Making difference as a	02
Professional and personal ethics	Necessities of my profession Personal ethics and social behaviour Professional ethics	01
Personality Development	How can I maintain balanced personality? What is a balanced personality Eliminating personal biases Pleasant outlook Encouraging attitude EQ and IQ	01
Teacher’s role as an intellectual of society	Intellectual property Living as a light house/beacon Act as a Mentor Enhancing will and wisdom	01
Pluralism (Ability to accept diversity in all forms) (activity based)	I want to resolve conflicts (Self conflicts, individual - individual, individual–community conflicts) Learning to live with differences Peace and harmony	01

Teacher as a change agent	Why Change? Overcoming resistance to change Innovation as a vehicle for change Teacher as a leader for change	01
Fostering Networks for academic sharing	Sharing best practices Sharing ideas in workshops and conferences Developing academic networks for sharing Collaborative	01
Total		08

MODULE- 2 Academic Planning and Management

Expected Outcomes	Concepts/Contents	Time Required (Sessions)
Planning and Management Skills	What is Academic Planning & Management? What difference does planning make? Process of planning Making a semester plan Academic activities (curricular & co-curricular) Making a session/lecture/unit plan Tell me what time you want to teach? (Timetable)? How to make things happen? Sharing responsibility and workload Managing resources (material, human and financial) Influencing and team building (Leadership in creating ideas and influencing colleagues for change/innovation for teaching learning and managing)	03
Classroom Management	Setting up a learning friendly environment (physical, social and emotional) Setting classroom routines and disciplines Organizing learning activities for example group work Managing difficult situations	02

Time management	Limiting the unlimited (Budgeting time, Meeting deadlines)	01
Conflict Management Crisis Management Problem Solving and Decision Making	I understand my colleagues Coordination & cooperation How to resolve conflicts? (strategies for resolving conflicts) Agreeing on disagreement	01
Coordinating skills (To be moved to communication skills)	*What do I need to say in the meeting? Making convincing arguments Win-win Policy	01
Total		08

MODULE-3 Curriculum Development, Assessment and Evaluation

Expected Outcomes	Concepts/Contents	Time Required (Sessions)
Course Design	<p>What is the difference between curriculum, course and syllabus?</p> <p>*Essentials for designing a course (Learning objectives, Learning outcomes, contents, teaching material, learning methods & assessment)</p> <p>*Steps for course designing (Objectives, contents, methodology & Evaluation)</p> <p>Course design (Learner centred, Problem centred, Subject centred)</p> <p>*Semester System (Credit Hours system)</p>	03
<p>Student Assessment</p> <p>HEC policy Guidelines</p> <p>Testing teachings, innovative methods of assessment e.g. through PBL or case study etc.</p>	<p>*How can I assess my students' learning?(kinds, modes, oral, written pictorial, class participation, field reports, mid-term and final exam)</p> <p>Criteria for assessment (synthesis, logical thinking, consistency, coherence)</p> <p>*Mid-term test (Objective, short answer & long answer questions)</p> <p>Final term test (Multiple choice, matching etc.)</p> <p>*Essentials for marking the assignments Absolute and relative marking</p> <p>Why students fail? (Discussion)</p> <p>*Dos And Don'ts in marking</p> <p>Marking system (Letter Grade, Numerical Grades etc.)</p> <p>Grading Policy (GPA, CGPA)</p>	05
Total		08

MODULE-4 Learner's Psychology

Expected Outcomes	Concepts/Contents	Time Required (Sessions)
Motivation	What motivates us to learn? Intrinsic vs. Extrinsic motivation	02
Guidance and academic counseling	Learning difficulties Learning and individual differences (Multiple intelligence through case studies) Understanding different types of students (introvert-extrovert) Understanding needs and interests of Learners' Student guidance and counseling	02
Stress Management	Leave me alone! I am under stress. Identification of the stressors Emotional intelligence and social intelligence Stress management for Learners' and teachers	02
Personality development	What is a personality? How can I help nurture my Learners' personality? Social values and moral development Social interaction Self-discipline Successful code of life	02
Total		08

MODULE-5 Andragogical Skills

Expected Outcomes	Concepts/Contents	Time Required (Sessions)
Enhancing Learning competency	How do adults learn? (Learning Process and Principles) *Matching teaching styles with learning styles Cognitive learning Relating learning to the Learners' experiences	01
Effective Teaching	What is effective teaching? (Characteristics) Teacher as a facilitator Effective teaching - effective learning (Course plan, Session plan, teaching material) Approaches to teaching (Interactive, activity, problem solving, experience sharing, *Participatory learning, Team teaching, Reflective practice, inquiry based learning, Learner centred vs. teacher centred)	04
Academic skills	*Listening and recording notes Information retrieval techniques (use of resource centre, internet, *Study Skills, Speed Reading *Student support Learn! How to write assignment?	02
Teacher behaviour and appearance	To what extent am I an exemplary teacher? (Appearance and behaviour) I want learner friendly environment	01
Microteaching	Theory Presentations	10
Total		18

MODULE-5(a,b) Microteaching Theory & Presentations

The microteaching sessions will be divided into two phases.

The first phase (sessions 1-5) should be scheduled after the completion of second module and second phase (sessions 6-10) will be conducted at the end of the course. The improvement will be cross checked against the suggestions made for each participant in the first phase of the microteaching.

Expected Outcomes	Concepts/contents Two broad categories Social / Pure Sciences	Time Required (Sessions)
Microteaching (Theory)	What is Microteaching Process of the Microteaching sessions Assignment of topics for the presentations	1
Microteaching (Presentations)	Presentations will be held and every participant will present his/her topic in the given time slot. The process of microteaching will be strictly followed.	4+5
Total		10

The Process of Microteaching

- Video recording of the microteaching presentations will be carried out. Each participant will present his/her assigned topic.
- Recording of each presenter will be played and participants and Resource Person will give feedback on it.
- Finally Resource Person will assess and evaluate the participant and suggest the changes required in his/her teaching methodology.

MODULE-6 Communication Skills

Expected Outcomes	Concepts/Contents	Time Required (Sessions)
Nature of Communication for Effective Handling	Why study Communication What is Communication? Communication and Self: What's in the name? Barriers to Communication Components of Communication Communication Models Intrapersonal; Interpersonal; Dyadic Communication	2
Self-awareness and consciousness about perceptions role for improving Self-image and Self esteem	What is Perception Differences in Perception What Occurs in Perception What is Consciousness / Self Awareness Self-fulfilling Prophecy Self-Concept in Communication Self-Image in Communication Self Esteem and its impact on Communication	02
Using Communication and Personality traits	Communication traits Communication Apprehensions (CA) Communicator Style Measure (CSM) Argumentativeness (AG) Proactive vs. Reactive Communication-Verbal Aggressiveness (VA) Personality Traits-Small Group Member Communication	02
Body Language signals	Understanding Body Language Giving the right signal Interpreting signals from others Understanding body language and Communication through situations	02
Total		08

MODULE-7 Research Methods and Skills

This section needs a proper start, first generic concept clarification regarding Research. Then moving to two broad categories of Social/ Pure Sciences.

Expected Outcomes	Concepts/contents Two broad categories Social / Pure Sciences	Time Required (Sessions)
Conducting Research	What is research? Requirement of research after all? Basics of research Research Ethics Plagiarism Intellectual property rights	01
Enabling to design research proposal	I need a research issue (Identification of a problem, theoretical framework) How to formulate a research question arising from the literature/ objectives/hypothesis? Identifying a relevant research method/procedure Limitations & delimitations Referencing/citations Time and financial budgeting	01
Literature review	*Logical Framework *Sources (Primary, secondary and electronic sources) *Accessing resources *Finding your place in the research	01
Research tools	How do I collect data? (sources of data) Developing questions for Interviews/questionnaires Observations Check Lists Tests and scales Document analysis (surveys, records etc.) Focus Group Discussion (FGD)	02
Population and sample	Why Sampling? Probability & Non Probability sampling	01
Data analysis	Simple Statistical Analysis Qualitative analysis techniques Use of SPSS/SAS	04
Writing report	Rules for writing research report/thesis Essential parts of research report Editing (academic and language)	01

Academic writing	Writing letters Research proposal Minutes Reports/thesis	01
Academic Supervision	Becoming a supervisor	
	Dear I don't have time to see you? Pre-Requisites/standards of Supervisor Essentials of a Supervisor (HEC Approved Intl. Standards)	
Total		12

Schedule of the Program

Days	Session 01	Session 02	Session 03
01	Opening Ceremony	Teaching as a Profession	Teaching as a Profession
02	Teaching as a Profession	Teaching as a Profession	Teaching as a Profession
03	Teaching as a Profession	Teaching as a Profession	Teaching as a Profession
04	Academic Planning and Management	Academic Planning and Management	Academic Planning and Management
05	Academic Planning and Management	Academic Planning and Management	Academic Planning and Management
06	Academic Planning and Management	Academic Planning and Management	Microteaching (Theory)
07	Microteaching (First Presentations)	Microteaching (First Presentations)	Microteaching (First Presentations)
08	Microteaching (First Presentations)	Curriculum Development, Assessment and Evaluation	Curriculum Development, Assessment and Evaluation
09	Curriculum Development, Assessment and Evaluation	Curriculum Development, Assessment & Evaluation	Curriculum Development, Assessment and Evaluation
10	Curriculum Development, Assessment and Evaluation	Curriculum Development, Assessment and Evaluation	Curriculum Development, Assessment and Evaluation
11	Learners' Psychology	Learners' Psychology	Learners' Psychology
12	Learners' Psychology	Learners' Psychology	Learners' Psychology
13	Learners' Psychology	Learners' Psychology	Androgogical Skills
14	Androgogical Skills	Androgogical Skills	Androgogical Skills
15	Androgogical Skills	Androgogical Skills	Androgogical Skills
16	Androgogical Skills	Communication Skills	Communication Skills

17	Communication Skills	Communication Skills	Communication Skills
18	Communication Skills	Communication Skills	Communication Skills
19	Research Methods and Skills	Research Methods & Skills	Research Methods and Skills
20	Research Methods and Skills	Research Methods & Skills	Research Methods and Skills
21	Research Methods and Skills	Research Methods & Skills	Research Methods and Skills
22	Research Methods and Skills	Research Methods & Skills	Research Methods and Skills
23	Microteaching (Final Presentations)	Microteaching (Final Presentations)	Microteaching (Final Presentations)
24	Microteaching (Final Presentations)	Microteaching (Final Presentations)	Closing Ceremony

**QUESTIONNAIRE
(Part-I)**

Name:		Academic Qualification:	
Subject:		Professional Qualification:	
Service :		Professional Training(FPDP):	
Gender :		University:	

Responses will be kept secret as per the norms and only be used in present research (Effectiveness of Professional Development Programs on enhancing the knowledge level and changing the professional mindset of university teachers)

Following are the statements which may or may not match with your ideas however you may select any one option in front of each statement given below and mark 'X' in the respective box.

Key: SA-Strongly Agree, A-Agree, DK-Don't Know, DA-Disagree, SDA-Strongly Disagree

	STATEMENT	S A	A	D K	DA	SD A
1.	FPDP helped you to make you understand your responsibilities & duties towards the teaching profession.					
2.	FPDP has played major role in producing professional teachers, who have the theoretical knowledge and understanding, combined with practical skills, competencies and commitment to teach at high national standards.					
3.	FPDP gave you the awareness to transform from conventional teaching to a variety of innovative teaching methods.					
4.	Teachers are able to trickle down quality education & knowledge to their students as expected of them after attending FPDP.					
5.	You feel that you are well equipped with requisites of andragogy, research skills, e-Learning latest tools and techniques after qualifying FPDP.					
6.	You feel better placed to handle students in a better way by understanding their psychology.					
7.	You can easily conduct a program similar to FPDP in your own institution.					
8.	You are able to examine the different areas of educational psychology and their status in educational process.					
9.	You think that educational psychology is very important for making the teaching-learning process effective.					
10.	Educational psychology is very much relevant for teachers.					
11.	You feel satisfaction if you review your own professional performance in the light of different areas of educational psychology.					

12.	You can apply educational psychology for making teaching-learning process effective.					
13.	You are well aware of nature, purposes, principles and maxims of teaching which enable the teacher more effective after FPDP.					
14.	You can easily analyze the domains and skills related to teaching process and determine the extent of their adaptability during teaching.					
15.	You can evaluate the teaching competencies of your classroom teaching.					
16.	You can comfortably adapt your instruction to meet the needs and characteristics of all students.					
17.	You have the ability to appreciate the need and desired standards for professional development of teachers which enable them to perform their academic duties successfully.					
18.	You can easily apply the principles of administration in concerned fields.					
19.	You are aware of the role of university teachers in educational administration.					
20.	Communication is the most important to teachers.					
21.	Every teacher must know communication process.					
22.	You can identify various barriers to effective communication and can also overcome.					
23.	FPDP helps you to learn to give effective presentation.					
24.	Active listening behavior plays an important role in communication.					
25.	Without effective feedback communication is incomplete.					
26.	You understand the concept and importance of curriculum.					
27.	Objectives and content play basic role in curriculum development.					
28.	FPDP makes you wise in the procedures of content selection.					
29.	Evaluation is must for ensuring the quality of curriculum.					
30.	You can undertake curriculum activities independently.					
31.	You take active part in the process of curriculum development in professional life.					
32.	You can understand and apply proper type of research in its actual manner.					
33.	You have the capability to use a variety of methods for the educational research.					
34.	You can develop valid and reliable research instruments suitable to studies.					
35.	FPDP has made you expert in applying sampling techniques as per objectives of the study.					
36.	You can design and conduct the research according to the objectives of the study.					
37.	Teacher does not have the right to teach without going through the continuous research process.					

38.	Measurement and evaluation is badly needed in educational process.					
39.	You can use a variety of tools for measurement and evaluation of educational programs.					
40.	FPDP assisted to learn to construct tests according to the objectives of the taught material.					
41.	You can easily perform subjective or objective measurement of students.					

QUESTIONNAIRE (Part-II)

STATEMENTS	SA	A	DK	DA	SDA
Flexibility					
1. You can easily adjust in a new situation.					
2. You are interested to work on new lines.					
3. It is difficult for you to change the set traditions.					
4. You take interest to discover new ways.					
5. You take initiative to experiment your ideas.					
Positivity					
1. You are keen for competitive struggle.					
2. You often avoid competition.					
3. You take interest to develop good relationship with your competitors.					
4. You take “failure” a step towards learning.					
Ambition					
1. You are concerned about your financial position.					
2. You have intention for a good social status.					
3. You work for rapid advancements.					
4. You take personal success as one of the objectives of life.					
Honesty					
1. You feel that your performance is as per your competency.					
2. You follow the time schedule of your job.					
3. People can easily trust you in any situation.					
4. You are committed with your job with full devotion.					
5. You are likely to quit the present job if environment is not favourable for you.					
Receptivity					
1. A majority opinion, usually you agree with it.					
2. If you differ, you adhere to yours opinion.					
3. In decision making, you are not impressed by majority opinion.					
4. If you differ, you try to convince the others.					
Communication					
1. You think that you can easily convey your					

ideas.					
2. You are comfortable while communicating in writing.					
3. You talk to the people who seem to be interesting.					
4. You want to push your ideas during conversation.					
5. You do not hesitate to present your point of view.					
Collaboration					
1. You prefer group work instead of individual work.					
2. You feel that group work provides opportunity for learning.					
3. Team teaching provides better learning environment.					
4. When you face difficulty, you seek help.					
Patience					
1. You listen your student carefully.					
2. You provide opportunity to your student to express their views.					
3. When your rights are infringed you act the same way as the majority of the people around you.					
4. You welcome difference of opinion in teaching learning process.					
5. When your rights are infringed you try to avoid such situation.					
6. If the situation is not in your favour you are likely to flare up.					
7. When you are facing over workload you easily lose your nerves.					
Balance					
1. At the end of the day you find yourself emotionally drained.					
2. You feel that you are worthless while doing the present job.					
3. Your home is not affected by your job.					
4. You give proportionate wattage to assigned activities.					

Suggestions/ Comments:

TRAVEL PLAN FOR DATA COLLECTION

S/No	University	Date
1	Ziaduddin University, Karachi	20 Jun 2012
2	Pakistan Naval Academy, Karachi	21 Jun 2012
3	University of Karachi	22 Jun 2012
4	Bahria University, Karachi	23 Jun 2012
5	Federal Urdu University of Arts Science & Tech: Karachi.	25 Jun 2012
6	Sardar Bahadur Khan Women University, Quetta.	8 Aug 2012
7	University of Balochistan, Quetta	9 Aug 2012
8	SBK Women University, Quetta	10 Aug 2012
9	Karakoram International University, Gilgit	17 May 2013
10	Mirpur University of Sciences & Technology, Azad & Jammu Kashmir	19 Jun 2013
11	University of AJ&K, Muzaffarabad	24 Jul 2013
12	University of Veterinary & Animal Sciences, Lahore	15 Aug 2013
13	University of Education, Lahore	16 Aug 2013
14	The Punjab University New Campus, Lahore	17 Aug 2013
15	Government College University, Lahore	17 Aug 2013
16	Fatima Jinnah Women University, Rawalpindi	29 Jun 2012
17	Army Medical College, Rawalpindi	9 Aug 2013
18	University of Engineering & Technology, Peshawar	21 Nov 2012
19	University of Peshawar, Peshawar	21 Nov 2012
20	University of Science & Technology, Bannu	23 Nov 2012
21	Hazara University, Hazara	21 Dec 2012
22	University of Gujrat	3 Jan 2014