

**TECHNO-PEDAGOGICAL COMPETENCIES AMONG TEACHERS IN
RELATION TO PROFESSIONAL COMMITMENT**

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In partial fulfillment of the requirement for the award of the degree of

Master of Education

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DECLARATION

I do hereby declare that the dissertation entitled “**TECHNO-PEDAGOGICAL COMPETENCIES AMONG TEACHERS IN RELATION TO PROFESSIONAL COMMITMENT**” submitted in partial fulfillment of the requirement for the award of the degree of Master of Education is entirely my original work and all ideas and references have been duly acknowledge. It does not contain any work that has been submitted for the award of any other degree or diploma of any university.

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CERTIFICATE

This is to certify that Akriti Sharma has completed her dissertation entitled “**TECHNO-PEDAGOGICAL COMPETENCIES AMONG TEACHERS IN RELATION TO PROFESSIONAL COMMITMENT**” under my guidance and supervision to the best of my knowledge, the present work is the result of her original investigation and study. No part of the dissertation has been submitted for any other degree or diploma to any other university. The dissertation is fit for submission for the partial fulfillment of the requirements for the award of Master of Education degree.

Dated.....

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Date.....

Investigator

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ABSTRACT

The present study was conducted on Techno-pedagogical competencies among teachers in relation to professional commitment. Descriptive survey method was used in the present study to obtain the pertinent and precise information. The objective of the study was to study the professional commitment of secondary school teachers; to study the techno-pedagogical competencies of secondary school teachers; to find out the relationship between techno-pedagogical competencies and professional commitment. The investigator selected 200 teachers from various institutions from Jalandhar and Ludhiana district of Punjab as sample through random sampling teaching. For collection of data the investigator used Professional Commitment Scale developed by Dr. Ravinder Kaur and Sarbjit Kaur (2011) and Techno-Pedagogical Competence developed by Rajashekar and Sathiyaraj (2013). For the purpose of drawing out the results the investigator used statistical techniques like mean, SD, t-test, coefficient of correlation. The findings of the study revealed that there is no significant difference in the professional commitment of male and female of the secondary school teachers, findings of the study revealed that there is no significant difference in the techno-pedagogy competencies of male and female of the secondary school teachers, Further it also revealed that relationship between techno-pedagogical competencies and professional commitment of secondary school teachers is not significant.

Keywords: Techno-pedagogical and Professional commitment

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CHAPTER-I
INTRODUCTION OF THE
PROBLEM

CHAPTER-1

INTRODUCTION

1.1 THEORETICAL ORIENTATION OF THE PROBLEM

Human being cannot live without food, clothes, shelter and education. Just as an individual cannot develop more without basic necessities like, shelter, food, cloths, likewise he cannot intellectually develop without education. Even he will not be able to indulge in a good profession

Profession means any kind of occupation which requires a unique training or a particular skill. Therefore it requires a high level of education. It is an expertise area of activity acquired during organized programmer of education. Professional education is the demand of the modern time as it adds to the skilled man power require for the growth of the country. Professional education helps the person to develop accurate type of attitude for their profession this kind of attitude helps the person to work efficiently and make growth in that field. Teaching is the sky-scraping profession, the skill involved in teaching has been identified which are mostly common in case of active teacher. Teachers are said to be the builders of nation. With this view Secondary Education Commission considered teacher as the most important factor in the contemplated national reconstruction. A teacher through an interactive process shapes the personality of the students and attempts to make them citizen. Thus he shares the responsibility of shaping the destiny of our country. A positive favourable attitude makes the work not only easier but also more satisfying and professionally rewarding. The progress of a country depends upon the quality of teachers and for this reason teaching is the one of the oldest and most respected profession in the world.

Teaching is profession indeed a noble one, conceptually as well as it is different from other professions because of its multitude dimensions teacher are the largest professional group engaged in human development activities. It is only in the case of teaching there is much more that is required to be accomplished than in the case of other professions. There is a daily need for teachers to fully engage in their work with not their hands, but with their hearts. No other individual can exert profound influence on the students than that of teacher.

A teacher plays a vital role in building up the character of the next generation. In ancient times teaching was termed as the noblest profession and people used to follow all the teachings of their teachers without any arguments. The duty of teacher was to impart knowledge and include values among pupils. Teachers are teemed as nation builders. Keeping in mind the importance of role played by the teacher it becomes imperative on the part of education system to possess quality teachers. The need of the hour is to have professionally competent and committed teachers.

There are many factors which play a dominant role in the development of professional commitment like interest and aptitude towards teaching profession, personality differentiation etc. Super (1992) conducted studies related to development assessment, the relation career maturity, commitment to work, sex and socio-economic status. The result facilitated new theoretical connection between personality and career aims.

Teaching is a complex and demanding profession. To sustain their energy and enthusiasm for the work, teachers need to maintain their personal commitment to profession. A part starting this vocational maturity also plays a very important role for the determination of the level of professional commitment in teachers. A profession grown-up being will group in sequence in relation to personality in order to gain approaching and to get the required competencies in order to make a knowledgeable choice, put together self-knowledge of the world of work and apply knowledge when preparing an occupation.

1.1.1 Professional Commitment

The concept of commitment is widely used but has received little formal analysis. It contains an implicit explanation of mechanism producing consistent human behavior. Commitments come into being when a person, by making a side bet, links extraneous interest with a consistent line of activity. The term commitment enjoys an increasing vogue definition in sociological discussions. Sociologists use it in analysis of both individual and organization behavior they use it as a descriptive concept to mark out forms of action characteristic of particular kinds of behavior of individuals and groups. They use it as an independent variable to account for certain kinds of behavior of individuals and groups. They use it in analysis of a wide variety of phenomena: power, religion, occupational recruitment, bureaucratic behavior, political behavior and so on. In spite of

its widespread use, the appearance of the concept of commitment in sociological literature has curious feature the reader with an eye for trivia will have noticed.

Commitment means to promise or give one's loyalty or money to particular principal, person or plan of action. Commitment depicts the firm and not changing orientation in support of belief his/her principles. Commitment is defined as an individual's psychological bond to the organization, including a sense of job involvement, loyalty and belief in values of the organization. Commitment is a process of identification with the goal of an organization's multiple constituencies. These constituencies may include top management, customers, unions and at larger commitment to the teaching profession requires the approach of Kanter's control commitment (Kanter, 1968). A normative view of commitment proposed by Weiner and Vardi (1980) puts commitments as value-based, normative evaluations of organization related behaviors. It mainly depends on the teacher characteristics such as knowledge base, sense of responsibility and inquisitiveness; the student characteristics such as opportunity to learn, and academic work: the teaching factors such as lesson structure and communication; the learning aspects such as involvement and success; and the classroom phenomena such as environment and climate, and organization and management. If the teachers take care of these factors, their commitment can be enhanced to the optimum level.

Professional commitment in education is of recent arrival, although teaching profession had its roots in missionary work in ancient times. Teachers were sages and adopted teaching as a mission. Commitment was presumed to be natural ingredient of teaching from its very being. The tradition continued in India till the advent of the British rule. Now there are very few teachers who enter this profession with a sense of commitment or mission. Singh(1998) pointed out quite a few teachers are passionately committed to teaching, while majority of them are merely technicians who view teaching as an easy way to make living inflicting lectures on a captive guidance.

Commitment of a teacher has been perceived as multidimensional phenomena. Dave (1998) elaborated five commitment areas, namely Commitment to a learner including love for the learners, readiness to help the learner, concern for their all around development etc This commitment to the learner implies genuine love and affection on the part of teachers for children, tolerance towards their behavioral problems coupled with the understanding of their development needs. Along with this, it implies commitment to ensure their proper development and progress. As

the study conducted by Sharma (2010) attempted on the study the professional commitment of teacher educators. The objective of their study was to observe the professional commitment of teacher educators in relative to their job satisfaction and gender differences. In study, it was concluded that the job satisfaction and professional commitment of teacher educators is positively correlated. The insignificant difference was found between the professional commitment of male and female teacher educators.

Apart from this commitment to the society is also one of area of commitment. Such as awareness and concern about impart of teachers work on the degree of advancement of families, communities and nation this commitment applies rendering services to the local community faithfully and conscientiously in the light of an objective understanding of its needs and problems. Bisaria (1991) conducted a pilot study of mobility patterns and professional commitment of higher secondary teachers and concluded that frequent transfer and mobility patterns were negatively correlated with professional commitment Meaningful service to the development of the school, culture and economic activities related to the development of the community and its school. By participating constructively in the social, cultural and economic activities of the local community, teacher can contribute to the development of the nation as a whole. This kind of commitment to the society on part of teacher-educators is also especially important.

Commitment to the profession is also another area. That is internal acceptance of the role and responsibility of the teaching profession, no matter under what circumstance one entered it. This commitment implies true pride in one's being in the teaching profession and abiding passion for professional development.

Another area is commitment to achieve excellence. That is concern for doing everything, in the classroom, in the school and the community in the best possible manner and in the spirit of 'whatever you do' it with 'does it well' attitude. This implies love for acquisition particularly relating to one's area of work. Teachers who remain students of their area of learning and teaching eventually reach the level of professional excellence.

Professional excellence demand reflective orientation towards the way of discharging one's responsibilities as a general teacher and as teacher educators. Commitment to values does not merely mean understanding the basic values of life such as honesty, integrity, truth, objectivity,

cooperation and love. Teachers have the realization along with other segments of community that the true quality of life for human beings depended up on the quality of values the purpose while dealing with its problem of existence.

A teacher educator's commitment may be reflected with reference to the following six dimensions of his role/obligation i.e. commitment to learner, commitment to institution, commitment to the work, commitment to achieving excellence, commitment to the society and commitment to the human values. It is evident from the survey of the various conception of the term commitment that it is a subjective aspect of an individual. The real test of commitment arises when circumstances are not so congenial when individuals encounter dilemmas involving conflicted interaction, incompatible preferences or alternative temptations or options. In such a situation if an individual decides to stick and stay, bearing the costs and sacrifice for the experiences in an organizational setting. Commitment to the profession is teacher's internal acceptance of the role and responsibility of the teaching profession, no matter under what circumstances one entered it. But each profession expects root commitment and loyalty from the members which should be beyond the demand and desire of earning money.

Professional commitment refers to one's dedication, devotion, whole hearted attempts towards the realization of organizational goals, a feeling of involvement and belongingness, a complete blending or fusion of personal goals with organizational goals, utmost efforts to meet job requirement and total absorption in the job. The professional commitment of teacher educators leads to a better base in the education. Utmost commitment of teacher educator can arouse interest among teacher trainees, to develop pedagogical skills among them, and nourish those skills time to time. Professional commitment is a passion to the work involved in teaching or a specific aspect of teaching. It is an investment of time outside of contact hours with teacher trainee as a responsibility to impart knowledge, attitudes, values and beliefs and take responsibility for passing on a core set of skills, understandings and values.

Kung (1982) studied professional commitment of 501 teachers of South Korea of various special education programmers. It concluded that personal factors such as educational setting, teaching level, age, employment of spouse, academic level, and administration are highly correlated with teacher's professional commitment.

There are different factors which affect the professional commitment of individual these are as follows:-

1. Organizational commitment
2. Professional organization conflict
3. Satisfaction with rewards
4. Tertiary training is likely to affect the development professional commitment at the pre-employment stage.
5. Organizational culture is likely to affect professional commitment at the entry/ socialization stage.
6. Professional membership requirements and services, which should primarily affect professional commitment during the advancement/stabilization stage. (Smith& Hall, 2008)
7. It as an indisputable fact that every employee expects a reward or recognition from his employer. Every professional normally prefers a place where their performance is assessed and rewarded accordingly. (Kannan&Pillai, 2008)
8. Professional commitment increases by the work experience. (Sheldon, 1990) Job level: as employees move to higher levels in their professional and receive increased rewards and status, the costs of leaving the profession may increase and leading to higher PC (Hall et al, 2005, p.104).

Sillito (1971) explored the relationship between some colleagues related “work experience of teachers and their career commitments”. This work reached a major conclusion that colleague-related work experience is functional in increasing both satisfaction and commitment, though high satisfaction and that high commitment were not highly correlated.

Ciriello (1987) administered 163-item questionnaire on 665 full time teachers employed in catholic parochial elementary schools to understand relationship between organizational commitment, professional commitment and job commitment (particular school). Results revealed that professionally commitment teachers were organizationally committed teachers. Professionally commitment teachers were much influenced by personal significance of instructional goals and they ranked first in importance to the goal of personal growth. Finance scales were also found to be salient among work for the

professional commitment. Importance of religion in one's own life was identified as a predictor of organizational commitment.

Professional commitment and job satisfaction are widely studied factors which are precursors of employees, performance. These factors are even more important to study in academic institutions. As the study conducted by Aranya, Lachman, and Amernic (1982) investigated the effects of organizational and professional commitment on job satisfaction. The purpose of this study was to assess both direct and indirect relationships between professional commitment and job satisfaction. Sampling of the research was based on 112 teachers working in a school of Botswana. A statistically significant correlation between professional commitment and job satisfaction was found Professional commitment affected job satisfaction indirectly through organizational commitment. Health of a person also exerts on his/her professional commitment.

1.1.2 Commitment Areas:

A true teacher is who sincerely loves each and every child. Teacher should do all his actions honestly. They should be sensitive towards the emotional needs of children and those who need special attention. A teacher must have a well-defined self-image which helps him to perform better and get better results. These qualities, along with professional competencies of teachers ensure their commitment and dedication towards the profession at their very best. These are five commitment areas which help teachers to perform well and build the future citizens of India.

1. Learner commitment
2. Society commitment
3. Profession commitment
4. Commitment towards showing excellence professional commitment.
5. Commitment towards social or professional ethics.

1. Commitment of Teachers towards Learner: The learning level and performance of students shows the ability of teachers. A student starts his studies at the school and stays throughout the life. It implies that an instructor should have attachment, sympathy, loyalty and patience towards their fault and naughtiness. A teacher must have concern for the development of life among the children. Self-analysis, a teacher should do self-analysis of

his or her own aggressive behavior. This will help them in building their commitment. They must be aware of the bad impact of intolerance and aggressiveness on the growth and development of the children. A teacher should do all possible efforts for students under his guidance. But this commitment is not an easy job therefore; a special training should be given to them during their teaching programmer.

2. **Commitment to the society:** A teacher is not teacher in school only but he is also a teacher outside the school. Teachers are responsible to the local community i.e. society also. Commitment towards society is of different types. A teacher should pay attention to those children whose parents are not aware of the need of the education in life coming from the poor and deprived sections of the society. A should try to increase the productivity level and quality of life of the whole community by his enhanced knowledge, skills and attitudes. A teacher always tries to encourage the students to join school so as help they to get education and thus, they can improve themselves to be true friends, philosophers and guides of the community they serve. This commitment is very necessary for the teachers as they all considered as the nation builders. The teachers should understand and realize invaluable significance of their work for national development.
3. **Commitment of the Profession:** Human is professional by nature. He only desires to earn his bread and butter. Under this condition, some people choose their profession willingly but some has to choose their profession under pressure. Same it happens with this profession some, teachers join this profession willingly but some join it due to situational constraints. In the field of teaching commitment towards profession charged with great responsibilities as the society hands over its children to them for overall development and proper socialization. The brain of commitment instructor is always full with the tension of their students, and their overall development. A commitment teacher always tries to improvehis profession so as give his to the students. The implies then:
 - I. Once a person accepted this profession, he should feel pride and develop an internal commitment towards the mobility of the profession.
 - II. Teachers should establish healthy relations with their fellow teachers and educators.
 - III. Teachers should develop positive attitude towards professional development and national welfare. Commitment to the profession deserves a integral part of teacher

education, as without this commitment they are not able to understand the mobility of the profession and their role therein.

4. **Commitment Towards Showing Excellence in Professional Activities:** True guides or instructors are those persons who are expertise of their subjects. Their commitment towards profession can be considered only on the basis of awareness and brilliance they are having on the part of themselves as well as on students parts. An instructor always does efforts to attain excellence in the teaching- learning process.
5. **Commitment to basic Values:** Human being started their learning of basic values right from birth but the basic values are like starts in the dark life of a human which enlighten his life and shows the right path to follow which makes his life better. The basic values differ from person to person. Everyone has its own basic values and these values act as radar and show them the way to follow. So, it is very necessary for teacher to have commitment towards basic values. As, a teacher he is a person who a number of students in his hand. It is his first basic responsibility to inculcate such basic values at the grass-root level among students. In present scenario, there is lack of values in the society. So, it is very important for a teacher to have basic values. These values have great impact on the psychology of learners in indirect way. Therefore, education system must be so flexible, so that the education of basic value can be given to teachers in both pre-service as well as in-service.

Bala (2014) conducted a study on professional commitment secondary school teachers in relation to their vocational maturity. Data was collected from 200 teachers 100 were males and 100 were female's teachers. Finding from this was female teachers are more professionally committed as compared to male teachers.

Bisaria (1991) conducted a pilot study of mobility patterns and professional commitment of higher secondary teachers. Finding from this was that frequent transfer and mobility patterns were negatively correlated with professional commitment.

Maheshwari (2002) studied the professional commitment of secondary school teachers. Data was collected from 160 school teachers in Tuticorin district. Finding from this study revealed that healthy school environment enhances commitment among teachers.

Sood and Anand (2010) conducted a study on professional commitment among B. Ed teacher educators of Himachal Pradesh. Data was collected from 135 teacher educators of 25 B. Ed colleges of Himachal Pradesh. Finding from this revealed that significant

differences were found in professional commitment of B. Ed teacher educators with regard to gender, marital status and teaching experience.

Arjunam and Balamurugan (2013) conducted a study on professional commitment of teachers working in tribal area school. Data was collected from 121 samples. Finding from this study concluded that the maximum numbers of teachers have acquired average and low level professional commitment male and female teachers have same level of professional commitment. The professionals the commitment of the school teachers is toward the welfare of students, welfare of society, human values and academic excellence.

Shukla (2009) conducted a study on teaching competency, professional commitment and job satisfaction. Data was collected from 300 teachers of sixteen higher secondary school in Trichy and Lalgudi educational districts finding from this study was that there exist a high positive relation between professional commitment and teaching competency and professional commitment came to be positively very low.

Lachman and Amernic (1982) investigated the effects of organizational and professional commitment on job satisfaction. Data was collected from 112 teachers working in school teacher training colleges of Botswana. Finding from this study was that professional commitment affected job satisfaction indirectly through organizational commitment.

Harrell and Eickhoff (1988) studied the effect of commitment on the level of job satisfaction. Data was collected from 290 teachers of primary school was selected. Finding from this study was positive effect of the professional commitment on the job satisfaction there was relational between these two variables. The teacher with higher professional commitment would have more job satisfaction.

Magdalena (2009) conducted a study to assess the professional commitment in teachers working in the professional commitment in teachers working in the primary and pre-schools. Data was collected from this study 200 teachers was randomly assigned from primary schools (20-30) years and above 30 years. Finding from this study was showed a having age thirty years. The highly experienced teachers are less committed.

Goyal (1980) conducted a study on the relationship between the adjustment and professional commitment. Data was collected from 120 teacher's educators from Gujarat. Finding from this study that a large majority of teachers educators were favourable inclined

towards their profession satisfied in their job but not well adjusted as well as had low professional interest.

Nias (1981) conducted a study on the relationship of commitment with the motivation. Data was collected from 250 primary teachers of Sikkim from this 120 were female teachers and 130 were male teachers. Finding from this study was that the teachers those are highly motivated having high commitment to their profession. It is the necessity for teachers to be emotionally committed to their work. The gender had no effect on the commitment.

Kathwali (2005) conducted a study on professional commitment of junior college teacher educators of greater Mumbai in relation to their burnout. Finding from these studies unveiled that there is no correlation between professional commitment and dimensions of burnout. The teacher educators are highly professionally committed and they possess balanced personality.

Kohli (2005) conducted a study on professional commitment of the teacher's educators of Punjab State. Finding from this study was that teachers educators remained an area that was neglected by the researchers and the researcher concluded that the level of professional commitment among teacher's educators was Moderate.

Usha and Kumar (2007) conducted a study to assess the teachers commitment and teachers self concept as predictors of job satisfaction among the secondary school women teachers of Kerala. Data was collected from 300 secondary school women teachers working in 53 Government and Private aided secondary school of districts of Kerala. Finding from this study was that teacher's commitment is the best predictor of job satisfaction among school teachers.

Sharma (2010) conducted a study on the professional commitment of teacher educators in relative to their job satisfaction and gender difference. Data was collected from teacher educators of Punjab University. Finding from this study was that job satisfaction and professional commitment of teacher's educators is positively correlated.

Ahmed (2005) conducted a study on Job satisfaction among teachers in relation to professional commitment. Data was collected from 300 teachers from Kaputhala district of Punjab. Finding from this study was that job satisfaction and professional commitment of teachers have negative relation.

Bogler and Somech (2004) conducted a study on Influence of teacher empowerment on teacher's organizational commitment, professional commitment and organizational citizenship behavior in schools. Data was collected through a questionnaire returned by a sample of 983 teachers in Israeli middle and high schools. Finding from this was that teacher's perceptions of their levels of empowerment are significantly related to their feelings of commitment to the organization and to the profession and to their organizational citizenship behavior.

Kieschkle and schaarschmidt (2008) conducted a study on professional commitment and health among teachers in Germany: A typological approach. Finding from this study was that the professional commitment is highly positively correlated with health status of the teachers.

It is apparent from the above cited studies like Bala (2014) concluded that female teachers are more professionally committed as compare to male teachers, Arjunam and Balamurugan (2013) found that male and female have a same level of professional commitment ad Shukla (2009) and Bisaria (1991) found male teachers were very less committed as compared to female teachers. The professional commitment of the school teachers were towards the welfare of students, welfare of society, human values and academic excellence.

1.1.3 Techno-pedagogical competencies

Technology is also closely associated with modernization, the transformation of ideas into new and useful harvest or processes. Modernization requires not only creative people and organizations, but also the availability of technology and science and engineering talent. Technology and modernization are synergistic. The development of gene sequencing machines, for example has made decode of the human genome possible, and that knowledge is fuelling a revolution in diagnostic, remedial and other biomedical innovation.

Educational technology is a system of 5m's in which machines, materials, media, men and methods are interrelated and works together for the fulfillment of specific educational objectives. Educational technology is applied or useful studies which aim at maximizing educational effects by calculating such relevant factors as educational purposes, educational environment content, teaching materials, educational environment, conduct of student, behavior of instructors and

interrelations between students and instructors. It is a branch of study in which the results of engineering techniques, information science, natural science behavioural sciences and human technology are to be used to promote the efficiency of education. Educational technology is concerned with providing correctly designed learning situations which hold in view the objectives of teaching or training bring to bear the best means of instruction.

Pedagogy is derived from two Greek words paid meaning child and a gogos meaning leading. So it literally means to lead the child. Thus pedagogy has been defined as the art and science of teaching children, which indicates the teacher- directed instruction.

Pedagogy is the art of teaching effective teachers use an array of teaching strategies because there is no single, universal approach that suits all situations. Different strategies used in different combinations with different groupings of students will improve learning outcomes. Some strategies are better suited to teaching certain skills and fields of knowledge.

Effective pedagogy, incorporating a collection of teaching strategies that support intellectual engagement, connectedness to wider world, supportive environments and recognition of difference, should be implemented across all key learning and subject areas. Effective pedagogical practice promotes the well being of students, teachers and the school community. It improves students and teachers confidence and contributes to their sense of purpose for being at school. It builds community confidence on the quality of learning and teaching of the school.

Competency refers to the knowledge, skills, abilities and attributes of a person to do some work effectively and efficiently. Competency can be expressed as measurable or observable knowledge and skills. Competencies are equated knowledge, skills, abilities and behaviors that positively and directly influence the success of institutions and professionals. It can be measured, enhanced and improved through training and learning opportunities. The equated competencies are applicable to most of our institutions especially the colleges of education or teacher education institutions. Teaching competency is a complex combination of skills, knowledge, values, understanding and effective actions. Teaching is much more than a task because it is concerned with leaning, education and society.

Competency is also a pattern of feeling, thinking, speaking or acting that cause a person to be successful in a specific role or job. Competency enables a teacher to use his/her instructional

skills and knowledge of content to improve student learning. According to Mulyasa (2005) it is the capacity to carry out teaching-learning process successful and when an individual is successful in learning which is complex and abstract that is capacity. Competency is concerned with strong desire to obtain marvelous and skillful learning outcomes of students and specific tasks or actions necessitate for success.

Competency ordinarily is defined as adequate for the purpose, suitable or sufficient or as legally, admissible, or as capable. The Oxford advanced learners dictionary says the ability, skill, and legal authority as synonyms for the word competency.

Competency refers to a state of being well qualified to perform an activity, task or job function. When a person is competent in doing something, he or she has achieved a state of competence that is recognizable and verifiable to a particular community of practitioners. A competency then refers to the way that a state of competence can be demonstrated to the relevant community.

Competency is the ability of an individual to do a job properly. A competency is a set of defined behaviours that provide a structured guide enabling the identification, evaluation and development of the behaviours in individual employees.

Teacher competence is the set of knowledge, skills and attitude possessed by the teachers to carry out professional and personal task successfully and ultimately to bring the change in the academic performance of the students.

Pedagogical competency is the skill, ability and capabilities possessed by the teacher so as to make the teaching- learning environment effective and productive there by realizing the full potential as well as students and in turn achieving the goals of education.

Pedagogical competency is defined is the ability of the learners understanding of the depth and organization of learning that educates.

1.1.4 TECHNO-PEDAGOGICAL COMPETENCY

Today the techno-pedagogical competency is very much needed for teachers in teaching and learning process, as it facilitates effective teaching and learning. The techno-pedagogical

competency is nothing but the ability of the teachers to make use of technology effectively in teaching. In techno-pedagogy, there are three areas of knowledge, namely: content, pedagogy, and technology. Content is the subject matter that is to be taught. Technology encompasses modern technologies such as computer, Internet, digital video and commonplace technologies including overhead projectors, blackboards, and books. Pedagogy describes the collected practices, processes, strategies, procedures, and methods of teaching and learning. It also includes knowledge about the aims of instruction, assessment, and student learning.

1.1.5 TECHNO-PEDAGOGICAL COMPETENCIES IMPROVE QUALITY OF EDUCATION

Acquiring techno-pedagogical proficiencies will make teaching and learning an enjoyable exercise as it would lower the pressure on the teachers and enable the students to research deeper into the area of knowledge. Technology had made inroads into every subject of human activity, including the field of education. It had totally changed the face of instructive teaching and brought about far reaching changes in the way in which knowledge was being shared. As the Teachers know the significance of technology as it had made easier for students to understand. When it came to teaching theories, the Teachers should give up the mechanical approach and make it interesting by simulating problems and finding solutions to such imaginary issues. In such a context, the terms pleasure and pressure should not get blurred and the distinction could be kept intact if the teachers with appropriate techno-pedagogical skills make teaching a pleasurable experience without feeling much of pressure.

1.1.6 CHALLENGES OF USING TECHNO-PEDAGOGY

1. Infrastructure of ICT for using Techno-pedagogical skills: Many schools do not have proper Infrastructure in their schools, so they can't use the proPERTechnology. ICT lab used web based instruction, electronic machine such as telephone, television, video, computer, poor cable network with internet, e-mail cellular phones, fax, radio, hardware and software, poor satellite systems, videoconferencing etc

2. Proficiency on English Communication and online content: English is the important language of use internet. In our state English language proficiency is not high, especially outside of urban areas. This reflects a serious barrier in maximizing the educational benefits of the World Wide Web.

3. Less number of trainers with Techno-pedagogical skills:A Techno-pedagogical skill in Teacher training is a difficult task because mediated communication demands more of excellence on the part of teacher educators with ICT skills. The four most general mistakes in introducing techno-pedagogical skill into teaching are:-

- Installing learning skill without reviewing student needs and content availability
- Technological systems from the peak down without linking faculty and students
- Using unsuitable content from other regions of the world lacking customizing it appropriately
- Producing less superiority content that has poor instructional design and is not adapted to the technology in use (UNESCO, 2009).

4. Less number of incentives of teachers:Though the obstacle of instructor consciousness, there is also small incentive for teaching staff to dedicate time to changing their teaching methods from chalkboard to techno-pedagogical method through ICT or online learning

5. Problems on Research and Development: Techno-pedagogical skill stress on sound research base for concentrated formative research. Two way of communication is better than one way of communication. It enhances the teaching learning process. Like – video conferencing, audio- video aids.

6. Lack of consciousness of existing techno-pedagogical skill services: Universities offer a wealthy assortment of ICT services for the growth of Techno-pedagogical skill. But there seems to be slight awareness among students and especially among teaching staff of the breadth of technology services accessible to them.

7. Hitch of using software:Use of unlicensed software i.e. pirated software in standard formats, as it is simple for costs of maintenance, also the authorized problem to use ICT in dissimilar schools. Even if the survival of licensed hardware and software, lack of capacity in equipment maintenance create serious problems to implement it

8. Incomplete techno-pedagogical resources: Imperfect using multimedia resources for hybrid teaching methods leads to lesser learning outcomes for students, resulting the ICT illiterate of students at superior level of education.

1.1.7 ROLE TO RELEASE CHALLENGES OF USING TECHNO-PEDAGOGICAL SKILL

1. Infrastructure for using Techno-pedagogical skills: There is a need to develop adequate infrastructure both man and material as well as media culture. There should have pitiable techno-pedagogy supportive lab with electronic machine such as telephone, cellular phones, fax, radio, television, video, computer, cable network along with internet, e-mail, hardware and software, satellite systems, sound videoconferencing etc.

2. Enhance competence on English language and online content: Enhancement is required for the proficiency in English language as this is the dominant language of internet. Through this way maximum benefits of using World Wide Web can be achieved.

3. Development of techno-pedagogic skills: Instruction demands techno-pedagogic skills. In teacher education programmer teacher educators need to move from pedagogues to techno pedagogues. There should be adequate integration of micro teaching skills, media skills and techno-pedagogic skills. Therefore, there should be programmers to develop ICT literacy and Techno-Pedagogic competencies of teacher educators and teachers. There is an immediate need of identification of Techno-Pedagogic Skills and training the pupil teachers on these skills at various levels of teacher education.

4. Comprise of incentives of teachers: There is a need for training all stakeholders who are involved in groundwork of techno-pedagogical skills. They should not be scared that techno-pedagogical supportive material would replace teachers. Teachers' educator should provide incentives for the teachers by devoting time to altering their teaching methods from chalkboard to hybrid method i.e. techno-pedagogical method.

5. Resolution on Research and Development: A sound research base is required for applying in research and development purposes. For that two way communications need to be developed through two ways audio and two ways video communication. On the other hand college or university should make available of digital resources like digital libraries where the students, teachers and professionals can access research material and course material from any place at any time.

6. Solution on problem of using software: Clear policies and procedures for procuring computer hardware and software are necessary to prevent such problems. There should be punishable provision for using of unlicensed software or any pirated software in standard formats.

Consequently college and university must arrange proper equipment maintenance capacity to implement it in higher education.

7. Developing techno-pedagogical E-Content: The best practices in creation of techno-pedagogical E-content, its dissemination, criteria for selection and evaluation require large scale networking among E-content users and producers.

8. Teacher Education with techno-pedagogical skills: Courses, namely, Educational Technology (ET) and ICT in Education should be offered as core courses at the different levels of teacher education. There could be Teacher Education certificate and degree programmers' specially devoted to these areas with extended duration. Also, refresher courses, workshop should be conducted on ET and ICT. Digital lesson Planning and Implementation should be promoted in all the teacher education institutions.

9. Computer Based Learning Resources Management Systems: Learning Resources in various media forms such as, CDs, Video films should be available in all the libraries of educational institutions. Libraries need to be progressively converted into digital libraries in which teachers will able to assemble the materials for construction of techno-pedagogical frame.

10. Formation of web page: Web pages should be developed for teaching various subjects through the affair of techno-pedagogical skills. Techno-pedagogical skills based CDs may be developed as web resource on various subjects.

Munoz (2013) conducted a study on pedagogical roles and competencies of university teachers practicing in the e-learning environment. Data was collected from 166 faculties. Finding from this study concluded that content drafting is the aspect in which the subject declares the highest level of proficiency as opposed to assessment.

Sathiyaraj (2013) conducted a study on relationship between the techno-pedagogical of higher secondary school teachers and their anxiety towards the use of instructional aids in teaching. Data was collected from 627 higher secondary school teachers situated in Tiruvannamalai District, Tamilnadu, India. Finding from this study was that majority of the higher secondary school teachers were having an average level of perceived techno-pedagogical competency and anxiety towards the use of instructional aids in teaching.

Thakur (2015) conducted a study on implementation of techno-pedagogical skills, its challenges and role to release at higher level of education. Finding from this study was technology

is never a substitute for good teaching. Without techno-pedagogical skilled instructors, no electronic delivery can achieve good results.

Sathiyraj (2013) conducted a study on techno-pedagogical competency of higher sec. school teacher of cuddalore District. Data was collected from 300 teachers working in higher secondary school. Finding from this study was that majority of the higher secondary school teachers were having an average level perceived techno-pedagogical competency.

Almerich, Gonzalo et al. (2011) studied training needs of teachers in ICT competencies: training profiles and elements of complexity. Data was collected from 868 primary and secondary education teachers in the Valencia community. Finding from this study that teachers demand higher- level training in the personal- professional area, and that they require more training with students in classrooms and to integrate ICT into classrooms

Kabakciyurdakul (2011) conducted a study on examining techno pedagogical knowledge competencies of pre-service teachers based on ICT usage. Data was collected from 3105 pre-service teachers from seven higher education institution in turkey. Finding from this study that pre-service teachers has high level techno- pedagogical knowledge competency.

Mudasiru, Yusuf et.al (2011) conducted a study on student- teacher's competence and attitude towards information and communication technology: A case study in a Nigerian University. Data was collected from 382 students- teachers (181 males and 201 females) from the faculty of education, university of Ilorin, Nigeria. Finding from this study that the majority of the students-teachers have a positive attitude towards the use of ICT and they are competent in the use of few basic ICT tools.

Jeong-Bae Son et al., (2008) conducted a study on computer literacy and competency: A survey of Indonesian teachers of English as foreign Languages collected. Data was collected from 73 in- service Indonesian teachers. The study provided a picture of the Indonesian teacher's use of computers in their local contexts and recommend increasing the teacher's online opportunities, skills and competencies in the use of computer for their teaching process and professional development.

1.2 Significance of the study

Teacher is a most important person in the world. Effective education depends largely on teacher. The role of teacher is most crucial. For obtaining success in any profession, commitment towards the same is required and this commitment is affected by many factors like interest, personality differentials, organizational climate. Apart from these factors techno- pedagogical competencies is also dominant factor which play pivotal role in the development of an individual's commitment towards particular profession. Similarly the present study is adventure on the part to the investigator to explore the relationship between professional commitment and techno-pedagogical competencies of secondary school teachers. The future of nation lies in the hands of the teachers. So there is an urgent requirement on the part of teachers to exhibit commitment towards their profession.

Professional commitment is an attitude reflecting the strength of the bond between an employee and an organization a person who is professionally committed, work is the vital part of life. This means that both the work itself and the co-workers are very meaningful to the employee, in addition to the important which one attaches to the profession as a whole. Active participation in decision making increases involvement and professional commitment. It tunes the higher level of acceptance and satisfaction. A professionally commitment teacher gives equal chance and importance to all students at the right time to ensure optimum level of achievement.

Techno-pedagogical competencies have important implication for career development. A good understanding of techno-pedagogical and its correlates may assist in enhancing the strategies of fostering career development. Pedagogical competencies emphasizes the important of both affective and cognitive skills as enabling factors that assist individuals to make realistic successful career in future because they have more awareness about the vocational decision making process, think more about Varsity of careers, possess higher levels of self-efficacy related to decision making, and are more commitment to making vocational choices.

1.3 STATEMENT OF THE PROBLEM

Deriving from the significance, the problem has been stated as follows

TECHNO-PEDAGOGICAL COMPETENNCIES AMONG TEACHERS IN RELATION TO
PROFESSIONAL COMMITMENT

1.4 OPERATIONAL DEFINITION OF TERMS

1.4.1TECHO-PEDAGOGICAL COMPETENCIES

Comprises competencies ofsecondary school teachers for technologies in preparation for teaching, technology in providing motivation, technology in presentation and technology in evaluation and how these competencies influence professional commitment.

1.4.2 PROFESSIONAL COMMITMENT

Professional commitment of teachers is role obligation of teachers' measurable behavior pattern according to certain rules, norms and code of ethics of the teaching profession concerning mainly with the learner, commitment to society, commitment to profession, commitment to attain excellence, commitment to basic human values. Teachers will devote personal time and dedication towards his/her profession.

1.5 THE OBJECTIVES AND HYPOTHESES OF THE STUDY

OBJECTIVES:

1. To study the professional commitment of secondary school teachers.
2. To study the techno-pedagogical competencies of secondary school teachers.
3. To find out the relationship between the professional commitment and techno-pedagogical competence of the secondary school teachers.

1.6 HYPOTHESES:

Underneath hypotheses will be verified to achieve the aforesaid objectives:

1. There is no significant difference between female and male secondary school teachers in their professional commitment.

2. There is no significant difference between female and male secondary school teachers in their techno-pedagogical competencies.
3. There exists no significant relationship between professional commitment and techno-pedagogical competencies of secondary school teachers.

1.7 DELIMITATION OF STUDY

The study will be delimited as given below:

- i. Two districts of the Punjab namely Jalandhar and Ludhiana were selected for this study.
- ii. Further data was delimited to 200 secondary school Teachers.

CHAPTER-2

METHDOLOGY

CHAPTER II

METHODOLOGY

2.1 RESEARCH METHOD

The use of term ‘Methodology’ dates back to 1800 and it’s originated from a Latin word ‘*Methodus + –logia –logy*’. In New Latin, the term is ‘*Methodologia*’. It is synonymous to words like line, course, policy, procedure and program. Often, the word ‘method’ and the term ‘methodology’ are used interchangeably. They are not exactly the one and the same thing. A narrow difference exists. Methodology is a broad term whereas method is narrow –method refers to a specific way of doing things while methodology refers to a set of methods, rules or ideas. Quite confusingly, ‘method’ and ‘procedure’ are sometimes interchanged and used. Procedure is the steps involved in applying a method and cannot be equated with method directly.

Methodology enriches the study. As stated above that methodology refers to a set of methods, it is of utmost importance to select method that best suits the research problem. This particular chapter deals with plan, method of investigation, tools and techniques applied for data collection and also talks about sample briefly but adequately.

In doing a research, there are three major methods: Historical, Experimental and Descriptive method. The nature of the problem under study (the intention of the study), the availability of funds and time with the researcher determines the method to be used. For the present study, descriptive method is selected.

In obtaining pertinent and precise information concerning the current status of phenomena, descriptive research studies are designed. And, from the facts discovered, valid general conclusions are drawn. Descriptive research studies are not restricted only to fact finding. They often result in formulation of important principles of knowledge and solution of significant problems concerning local, state, national and international issues. Such studies involve

measurement, classification, analysis, comparison, and interpretation. Phenomena are investigated in their natural setting through descriptive studies and their purpose is both immediate and long range. Such studies involve events that have already taken place and are related to a present condition. They vary greatly in complexity. Though they do not aspire to develop an organized body of scientific laws (being a primitive type of research), they are helpful in solving local problems as useful information are usually provided by them. Not only that, they at times provide data thereby forming the basis of research of a more fundamental nature.

The most popular and most widely used research method in education is the descriptive research method. The use of this particular research method in educational field is immense in the sense that it helps to explain educational phenomena in terms of the conditions or relationships that exists, opinions that are held by students, teachers, parents and experts, processes that are going on, effects that are evident, or trends that are developing. The apparent ease and directness of this method helps researcher in gathering information by a simple questionnaire. Descriptive survey at times is the only means for improving educational practices and instruction by obtaining opinions, attitudes, suggestions and other data. Hence, in solving problems about children, school organization, supervision and administration, curriculum, teaching methods and evaluation, descriptive investigations are of immense value.

By various writers, descriptive studies have been classified variously on the basis of the purpose they achieve; geographical areas they cover; and some on the basis of the techniques they employ. Broadly, it can be either quantitative or qualitative descriptive research. The quantitative descriptive research uses quantitative (statistical) methods in describing, recording, analyzing and interpreting conditions that exists at present while qualitative descriptive research uses qualitative methods to discover and describe non-quantifiable relationships between existing variables.

Descriptive studies may be classified into three categories for the sake of convenience. These are: (1) survey studies; (2) interrelationship studies; and (3) developmental studies. The classification though arbitrary, from an operational as well as from an organizational point of view, it seems to have merit. Some investigations fall exclusively within one of these categories, but others have characteristics of more than one.

When the intent of the researcher is to employ data to justify current conditions and practices, or to make more intelligent plans for improving them, survey studies are conducted to collect detailed descriptions of existing phenomena. Their objective is to determine the adequacy of status by comparing it with established standards.

Depending upon the scope, nature and purpose of the problem under investigation, survey studies may take different forms. Some surveys encompass several countries, states or regions; or may be limited to one country, region, state, district, city, school system, or some other unit. Survey data may be collected from every unit of a population or from a representative sample. The information gathered may be concerning a large number or related factors or may be confined to a few selected items.

METHOD AND PROCEDURE

The study will employ descriptive survey method to find the influence of Techno-Pedagogical Competencies of professional commitments. Best and Khan (2003) discussed that descriptive design is concerned with the conditions or level of performance that exist, opinions that are held, process that are going on, effects that are evident or trends that are developing

2.2 SAMPLE- TECHNIQUES AND DESIGNS

Sampling refers to the process of drawing sample (representative proportion of population) from population. In any research work, interviewing or observing each unit of population is usually not feasible. Lack of time and money is the main hindrance the researchers face in this respect. Generally, researchers need to draw sample from the population and conduct study on the selected sample and deduce conclusions for the population. For this reason, sample taken should be representative proportion of the population. Therefore, sampling procedure/technique is very important to be considered.

In the present study - techno-pedagogical competencies was taken as the dependent variable and professional commitment as the independent variable. Convenient sampling technique was employed for data collection. Two districts of the Punjab i.e. Jalandhar and Ludhiana were selected. From the selected districts, 200 teachers both male and female were considered for data collection. Sample design is given in the below given fig.1

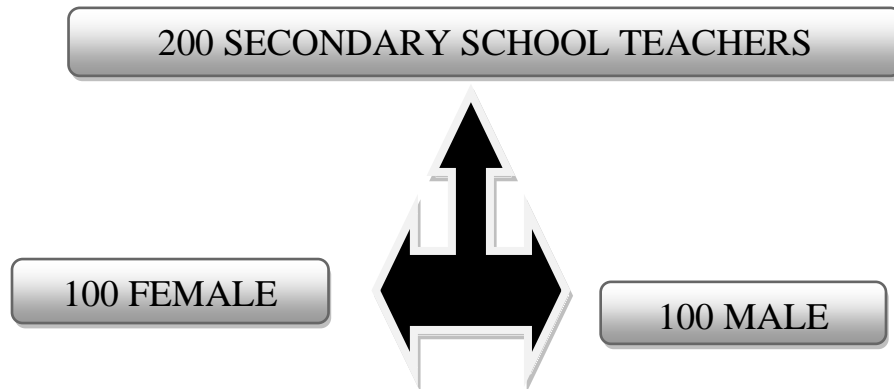


FIG:1: SAMPLE DISTRIBUTION

2.3 TOOLS OF DATA COLLECTION

Researcher collects data from various fields. The instruments or devices employed in collecting data are called as research tools. The nature or the type of study undertaken by the researcher determines appropriateness of the tools. In other words, a valid tools need to be used for collecting required data. If the existing research tools do not serve the purpose, the researcher may have to modify or construct his own and then standardize it. Thus, lots of care and concern needs to be paid while selecting research tools. For present study, the following standardized scales were used to collect the data from the sample

1. For professional commitment rating scale for teachers prepared by Kaur, Ranu, Brar (2011) will be used. Scale comprises five dimensions viz. commitment to learner, commitment to society, commitment to profession, commitment of attain excellence, commitment to basic human values. The scale consists of 60 items, and rated on five points scale.

- 2.For techno-pedagogical competence rating scale for teachers prepared by Rajashekar and Sathiyaraj (2012) will be used. Scale comprises four category technologies in preparation for

teaching, technology in providing motivation, technology in presentation, technology in evaluation. The scale consists of 40 items.

2.4 DESCRIPTION OF TOOLS

Introduction:

Teaching is profession-indeed a noble one, conceptually and ideally. It is also different from other professions because of its multitude of dimensions. Teachers are the largest professional group engaged in human development activities. Only in the case of teaching there is much more that is required to be accomplished than in the case of other professions. There is a daily need for teachers to fully engage in their work with not only their heads, but also with their hearts. Indeed, beauty joy and fulfillment are in the teaching profession. Those who look to the profession as a career would need to nourish these perceptions in order to prevail over the negative aspects that surround the profession. Teaching is more than presentation of facts; it includes the dedication of both heart and time.

The quality of teaching is not only governed by the knowledge and skill competence of teachers but also their enthusiasm and commitment in teaching (Rikard, 1999). Teacher commitment has been identified as one of the most critical factors in the success of education (Huberman, 1993). A teacher, to be called a professional, should have both the behaviours in him/her-the ability to do (professional competence i.e. mastery over, the subject matter and its efficient delivery), and the will to do (the professional commitment and integrity).

Professional commitment is recognized as a natural ingredient of teaching profession. It is closely connected to teacher's work performance, absenteeism, burnout and turnover as well as having an important influence on students' achievement in, and attitude towards school (Louis, 1998). It appears to be a professional necessity for teachers to be emotionally committed to their work, for without this emotional commitment, teachers face the constant danger of burn-out in an increasingly intensified work environment (Nias, 1996).

Commitment is seen to be one of the more desirable attributes of a teacher. The term “commitment” can be used in a variety of ways to describe a number of teacher behaviours and attitudes, beyond the dimensions of organizational commitment. However, since teachers’ work is not limited to the classroom, the concept of professional commitment needs to be considered in a broader context. Commitment is part of teacher’s affective or emotional reaction to their experience in school setting (Ebmeir and Nicklaus, 1999).

“Commitment” is a term that teachers frequently use in describing themselves and each other (Nias, 1981). It is a word they use to distinguish those who caring, dedicated’ and those who ‘take the job seriously’ from those who ‘put their own interests first’.

A number of researchers attempted to distinguish between the meanings that teachers have ascribed to the word commitment teachers’ professional commitment like organization commitment, is conceptualized as being multidimensional (Nias, 1981).

Simpson and Hood (2000) have defined commitment in context of the teaching profession. According to them, a committed teacher reflects certain behavioral characteristics. He shows that professional development is a top priority; reflects excitement about teaching and learning; connects with students; shows positive attitude about students, motives, strengths, needs and situation.

Joffres and Haughey (2001) defined professional commitment in terms of professional behavior, “someone who is striving to improve on their practice” and in terms of the investment of time outside of school contact hours.

It is evident from the survey of various definitions that professional commitment is a multidimensional construct and refers to a socio-psychological bonding of an individual to his group or organization, its goals and values; or to his occupation and profession.

DEVELOPMENT OF THE SCALE

The present scale was designed to measure the professional commitment of teachers in the light of the light of the operational definition of professional commitment of teachers: “professional commitment of teachers is role obligation of teachers measurable behavior pattern

according to certain rules, norms and code of ethics of the teaching profession concerning mainly with the learner, society, profession, attaining excellence and basic human values.”

Methodology Employed for scale Construction

The technique chosen to construct the present scale was of “Scale Product Method” which combines the techniques of ‘Equal Appearing Interval Scale’ Thurston (1946) for selection of items and Likert’s (1932) techniques of ‘Summated Rating’ for ascertaining the responses on the scale.

Construction of Items

On the basis of available literature on professional commitment among workers of different professions and the identified areas of professional commitment of teachers by NCTE (1998), it was decided to develop the scale on the dimensions of commitment suggested by Dave (1998) in NCTE publication ‘Competency based and commitment oriented teacher education for quality school education’ namely:-

1. Commitment to the learner
2. Commitment to the society
3. Commitment to the Profession
4. Commitment to Achieve Excellence
5. Commitment to basic Human Values

Above mentioned areas of teachers commitment were taken into account, while framing its statements. Help was also sought from experienced colleagues, head teachers, school principals and students.

After ascertaining the core connotations of the said segments of professional commitment, a number of statements were framed on each segment of professional commitment. The statements were then discussed threadbare with supervisors of the research work and necessary modifications were made. Preliminary draft of 82 statements was subjected to judgment of experts, keeping in view their judgment and comments a pool of 65 items was finalized for the provisional draft of Professional Commitment scale.

Preliminary Try Out

Provisional draft of Professional Commitment Scale comprising of 65 statements was put in the form of a scale booklet. The statements were presented on a five-point scale. These five categories varied from Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD).

The tryout of the scale was carried out on a group of 120 secondary school teachers selected randomly from 10 senior secondary schools of the Punjab state. Data were collected on 65 items of the provisional draft. Out of 120 teachers only 100 teachers returned the complete data on statements. There were 43 male and female teachers. They ranged from 20 to 60 years of age. The responses collected on the five-point continuum were scored with respective weight of 5,4,3,2 and 1 for the favourable statements and with the respective weights of 1,2,3,4 and 5 for the unfavourable items. The obtained data from tryout were used for item analysis.

Item Analysis

In order to make selection of items objectively and scientifically, item analysis is required. The purpose of item analysis was to select best items from those included in the provisional draft. Item analysis was done by computing Scale values and ‘Q’ values.

Computing Scale Values and Q-Values

Computation of scale values and ‘Q’ values is necessary for placing the statements evenly in the scale from extreme negative to extreme positive. By applying formula suggested by Thurston and Chave (1992), the scale values and ‘Q’ values were computed. A scale value is defined as a definite value in the point scale. The ‘Q’ value expresses the degree of disagreement among experts regarding positiveness and negativeness. It gives the inter-quartile range or spread of middle 50 per cent of judgments. Care was taken to select those items with high scale values and smaller ‘Q’ values. The ‘Q’ values and Scale values of the items are given in the Table 2.1.

TABLE 2.1: Scale Value and Q-Value of different statements included in the Professional Commitment Scale

Item	Scale Value	Q Value	Item	Scale Value	Q Value	Item	Scale Value	Q Value
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1	2.87	1.31	25	4.05	0.58	49	3.76	1.05
2	4.65	0.48	26	4.05	0.3s8	50	3.81	0.56
3	4.17	0.49	27	4.30	0.61	51	3.85	0.99
4	4.18	0.57	28	3.90	0.39	52	3.92	0.46
5	3.71	1.08	29	3.85	0.77	53	4.24	0.46
6	4.14	0.54	30	3.94	0.68	54	3.58	0.85
7	4.13	0.86	31	4.01	0.32	55	4.05	0.36
8	4.00	0.40	32	3.71	0.91	56	2.31	1.00
9	3.98	0.75	33	3.22	0.95	57	3.00	0.93
10	4.09	0.54	34	3.22	0.89	58	4.14	0.43
11	4.00	0.43	35	3.59	1.16	59	4.02	0.51
12	3.98	0.55	36	3.99	0.35	60	3.04	0.66
13	4.29	0.52	37	3.77	0.70	61	4.19	0.52
14	4.59	0.54	38	3.34	0.95	62	2.27	1.01
15	4.18	0.52	39	4.06	0.45	63	3.87	0.74
16	4.00	0.40	40	3.96	0.41	64	3.97	0.37
17	3.91	0.66	41	3.82	0.84	65	4.21	0.52
18	4.20	0.49	42	4.24	0.52			
19	2.45	0.97	43	2.16	0.56			
20	4.53	0.55	44	4.60	0.54			
21	3.33	0.93	45	3.73	0.83			
22	4.38	0.52	46	2.93	0.95			
23	3.95	0.58	47	3.69	0.94			
24	4.11	0.49	48	3.96	0.39			

The statement which had Q-Values lowers than 0.5 and higher than 2.0 were rejected at this stage. This resulted into rejection of 19 statements from different areas of Professional Commitment. One item from D area No.43 was intentionally dropped to balance the items in each area of Professional commitment. In this way, in all 20 statements were rejected, Numbering 2,3,8,11,16,18,24,26,28,31,36,40,43,48,52,53,55,58,and 68. Hence, Professional commitment scale its final form comprised of 45 items. Table 2.2 shows the distribution of items in the final draft of Professional Commitment Scale for Teachers.

TABLE 2.2Distribution of items (Area wise) in the final draft of Professional Commitment Scale for Teachers

Area code	Area of Commitment	Item Number in each Area	Number of Items
A	Commitment to Learner	9-Jan	9

B	Commitment to Society	18-Oct	9
C	Commitment to Profession	19-27	9
D	Commitment to Attain Excellence	28-36	9
E	Commitment to Basic Human Values	37-45	9
		Total	45

2.4.1 Establishing the Reliability of the Scales

As the Scale being heterogeneous and items having been arranged logically the two halves could not have been identical. Therefore, test-retest reliability criterion was found to be most suitable for determining the r reliability of the Scales. For establishing the reliability of the Professional Commitment Scale, the scale was administered after the gap of one month for the test-retest reliability. The product moment co-efficient of correlation between two sets of scores was computed. It was found to be .76 (Significant at .01level).

2.4.2 Establishing Validity of the Scale

Since there was no other such tool available to establish concurrent validity of the developed scale, the investigator made efforts to ensure and establish content and face validity of the tool in the following manner.

As regards its content validity test was shown to experts from the field of both teacher education and school education for obtaining their verdict on validity. Beside this, items of the scale were selected after carefully scrutinizing the definition of professional commitment and its dimensions; hence scale has fair degree of content validity.

For establishing face validity, scale was also shown to eminent psychologists and sociologists. Its language, format, instructions and size were found suitable for respondents. All specialists were unanimous in their opinion; hence test has a fair degree of face validity.

2.4.3 Scoring System

Each item in the professional commitment scale has a response option on Likert' 5 points continuum viz., **Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree** with respective weights of 5,4,3,2 and 1 for the positive statements and 1,2,3,4 and 5 for the negative statements. The scoring procedure adopted is presented below Table 2. 3.

TABLE 2.3: Rating Scale

Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Positive	5	4	3	2	1
Negative	1	2	3	4	5

Professional Commitment score of the subject is the sum total of item scores of all the five areas and it is the Raw Score for the testee. The theoretical range of scores is from 45 to 225. High scores reflecting relatively higher level of Professional Commitment of teachers and vice-versa Table 4 shows the total number of Positive and Negative items and their distribution in each area.

Table 2.4: Total number of Positive and Negative items and area wise serial number

Area Code	Conditions	Item Serial Numbers	Numbers of Item in each dimension	
A	Positive	1, 2,5	3	9
	<i>Negative</i>	<i>3, 4, 6, 7, 8, 9</i>	6	
B	Positive	10,11,14,15,16	5	9
	<i>Negative</i>	<i>12, 13, 17, 18</i>	4	
C	Positive	19, 21, 22	3	9
	<i>Negative</i>	<i>20, 23, 24, 25, 26,27</i>	6	
D	Positive	29,30,35	3	9
	<i>Negative</i>	<i>28, 31, 32, 33, 34, 36</i>	6	

E	Positive	37,39,40,41,42,44,45	7	9
	<i>Negative</i>	38, 43	2	
Total				45

Administration

The Professional Commitment Scale is a self-administering scale. The subject is requested to read the instructions carefully before responding. It is advisable to emphasize the paramount need of genuine with utmost honesty and truthfulness. It is not desirable to tell the subjects the exact purpose for which the test is used. It should be duly emphasized that all the statements have to be responded and no statement should be left unanswered. Sufficient time should be given to the respondents for completing the scale. However, it takes approximately forty-five minutes to complete it.

Norms for Interpretation

The scale was administered to 600 teachers (247 males and 353 females) and on the basis of the data got, the Mean and Standard Deviation were computed, which were: Mean: 166.01, SD: 17.53, N: 600

On the basis of the above statistics, z-Score Norms were prepared for the total population of male and female teachers combined which have been presented in Table 5 for interpretation of the Raw Scores and in Table 6, Norms for interpretation of z-Scores for the level of Teacher's Professional Commitment have been given.

TABLE 2.5: z- Score Norms for Professional Commitment Scale

Mean: 166.01 SD: 17.53 N=600

RAW Score	z-Score	RAW Score	z-Score	RAW Score	z-Score	RAW Score	z-Score
121	-2.51	145	-1.19	169	+0.17	194	+1.60

122	-2.46	146	-1.14	170	+0.22	195	+1.65
123	-2.46	147	-1.08	171	+0.28	196	+1.71
124	-2.40	148	-1.02	172	+0.34	197	+1.77
125	-2.34	149	-0.96	173	+0.39	198	+1.83
126	-2.29	150	-0.91	174	+0.45	199	+1.88
127	-2.23	151	-0.85	175	+0.51	200	+1.94
128	-2.17	152	-0.79	176	+0.56	201	+2.00
129	-2.11	153	-0.74	178	+0.62	202	+2.06
130	-2.06	154	-0.68	179	+0.68	203	+2.11
131	-2.00	155	-0.62	180	+0.74	204	+2.17
132	-1.94	156	-0.56	181	+0.79	205	+2.23
133	-1.88	157	-0.51	182	+0.85	206	+2.29
134	-1.83	158	-0.45	183	+0.91	207	+2.34
135	-1.77	159	-0.39	184	+0.96	208	+2.40
136	-1.71	160	-0.34	185	+1.02		
137	-1.65	161	-0.28	186	+1.08		
138	-1.60	162	-0.22	187	+1.14		
139	-1.54	163	-0.17a	188	+1.19		
140	-1.48	164	-0.11	189	+1.25		
141	-1.42	165	-0.05	190	+1.31		
142	-1.37	166	+0.00	191	+1.37		
143	-1.31	167	+0.05	192	+1.42		
144	-1.25	168	+0.11	193	+1.48		

TABLE 2.6: Norms for Interpretation of z-scores and Level of Professional Commitment of Teachers

Sr. No.	Range of Raw Scores	Range of z-Scores	Level of Professional Commitment

1.	202 and above	+2.01 and above	Extremely High Commitment
2.	189-201	+1.26 to +2.00	High Commitment
3.	175-188	+0.51 to + 1.25	Above Average Commitment
4.	158-174	-0.50 to +0.50	Average/Moderate Commitment
5.	144-157	-0.51 to -1.25	Below Average Commitment
6.	131-143	-1.26 to -2.00	Low Commitment
7.	130 and below	-2.01 and below	Extremely Low Commitment

2.5 Techno-Pedagogical Competency Scale

Introduction:

The rapid development of technology in Education has redefined the teaching and learning process to a greater extent. It has given a new face lift to the traditional classroom and changed drastically the pedagogy. Therefore, it is a must for the teachers to get acquaintance with the application of recent technological principles and gadgets in their teaching and as such, there is a greater need to examine the techno-pedagogical competency in the teachers. The techno-pedagogical competency is nothing but the ability of the teachers to make use of technology effectively in teaching. Since the Higher Secondary stage of schooling is considered to be the feeder stage and only through which the students are going to enter into the higher education or colleges. So the teachers who are teaching higher secondary classes should possess techno-pedagogical competencies in order to cater to the needs of a hi-tech classroom. Therefore, the investigators attempted to study the perceived techno-pedagogical competency of higher secondary school teachers.

Development of the scale

The investigators had decided to construct and standardize a scale to measure the techno-pedagogical competency of higher secondary school teachers, as there is no suitable tool available to carry out the said study. In order to construct a scale, the investigators collected a variety of information related to this study from the print and electronic media, experts in Educational technology teacher educators and so on and developed a Likert type five point scale with forty statements collected from the aforesaid sources. All the forty statements were positively worded with respect to techno-pedagogical competency and were categorized based on the experts' opinion under the following headings:

- ◆ Technology in preparation for teaching
- ◆ Technology in providing motivation
- ◆ Technology in presentation
- ◆ Technology in evaluation

Each statement is set against a five point scale of 'Always', 'Sometimes', 'Uncertain', 'Rarely' and 'Never' with the weight age of 5, 4, 3, 2 and 1 in the order.

Tryout of the Scale

The scale intended for the pilot study was administered to the sample of 100 **teachers teaching higher secondary classes** in the Tiruvannamalai district of Tamil Nadu, India. Then their responses were scored carefully and based on the scores secured, all the papers were arranged in the descending order from the highest scorer to the lowest scorer in order to carry out item analysis.

Item Analysis

't' value has been calculated for all the 40 statements after having conducted the pilot study, which forms the basis for item selection in order to build up final scale. The Likert type scale calls for a graded response to each statement on a five point scale ranging from "Always" to "Never". The individual score for all 100 teachers teaching higher secondary classes were found out and they were ranked from the highest to lowest score. Then 25% of the subjects (High) with the highest total scores and 25% of the subjects (low) with the lowest total scores were sorted out for the purpose of item selection. The high and the low groups, thus selected, formed the criterion groups and each group was made up of 25 subjects (Edward .L. Allen 1957). It may be recalled

that each statements is followed by five different responses of ‘Always’, ‘Sometimes’, ‘Uncertain’, ‘Rarely’ and ‘Never’ in the techno-pedagogical competency scale. As already indicated weight ages are given for the responses category in respect of each. Then each statements was taken individually and the number of teachers who responded ‘Always’, ‘Sometimes’, ‘Uncertain’, ‘Rarely’ and ‘Never’ was found out in both the high and the low groups separately. Thus for all 40 statements the number of teachers coming each category was found out separately for both the high and the low groups. The value of ‘t’ is a measure of the extent to which a given statement differentiates between the high and low groups. If the ‘t’ value is equal to or greater than 1.75, it indicates that the average response of the high and low groups to a statement differs significantly, provided there are 25 or more subjects in the high group and also in the low group”(Edward L. Allen 1957).

In the present study there were 25-25 subjects, each in the high and low groups, the total number of subjects involved in the pilot study being 100. The statements having the ‘t’ values, equal to or greater than 1.75 were chosen in order to form the final scale (Table 1). All the 40 statements have been selected through the said principle, as all of them have the “t” values, equal to or greater than 1.75.

TABLE 2.7: Rank order of Items in the Techno-Pedagogical Competency Scale Based on ‘t’ Values

Rank order	Nature of the statement	‘t’ value	Original serial number	Statements selected
1.	Positive	10.89	36	Selected
2.	Positive	8.53	26	Selected
3.	Positive	8.13	3	Selected
4.	Positive	8.07	4	Selected
5.	Positive	7.78	37	Selected
6.	Positive	7.40	18	Selected
7.	Positive	7.36	30	Selected
8.	Positive	7.27	21	Selected

9.	Positive	7.27	5	Selected
10.	Positive	7.16	40	Selected
11.	Positive	7.02	16	Selected
12.	Positive	6.68	15	Selected
13.	Positive	6.52	39	Selected
14.	Positive	6.40	17	Selected
15.	Positive	6.25	20	Selected
16.	Positive	6.24	22	Selected
17.	Positive	6.19	31	Selected
18.	Positive	5.94	8	Selected
19.	Positive	5.59	11	Selected
20.	Positive	5.47	32	Selected
21.	Positive	5.40	2	Selected
22.	Positive	5.39	10	Selected
23.	Positive	5.36	29	Selected
24.	Positive	5.11	35	Selected
25.	Positive	4.67	14	Selected
26.	Positive	4.63	34	Selected
27.	Positive	4.59	25	Selected
28.	Positive	4.57	24	Selected
29.	Positive	4.48	38	Selected
30.	Positive	4.35	13	Selected
31.	Positive	4.24	19	Selected
32.	Positive	4.04	23	Selected
33.	Positive	3.93	28	Selected
34.	Positive	3.88	12	Selected
35.	Positive	3.87	9	Selected
36.	Positive	3.69	6	Selected
37.	Positive	3.42	7	Selected
38.	Positive	2.95	27	Selected

39.	Positive	2.92	33	Selected
40.	Positive	1.77	1	Selected

The final scale consisting 40 statements was administered to a different sample of 200 teachers, who were teaching higher secondary classes, chosen as sample through cluster sampling technique.

2.5.1 Scoring Procedure

The scoring procedure of teacher's Techno-pedagogical competency scale is given in Table2.

TABLE 2.8: Scoring Procedure

Type of Statement	Always	Sometimes	Uncertain	Rarely	Never
Positive	5	4	3	2	1

The range of obtained score on this scale could be 40 to 200.

2.5.2 Validity

Techno-pedagogical competency scale has construct validity as items were selected having the 't' values equal to or more than 1.75 (Edwards, 1975). Its intrinsic validity was found to be 0.91 which clearly states that the scale is valid.

2.5.3 Reliability

With the help of split- half technique (consistency) followed by the use of Spearman-Brown prophecy formula the reliability of this scale was found to be 0.82 (N=200) which is significant at .01 level of significance.

Statistical Results & Norms

The statistical results have been given in Table

TABLE 2.9*Statistical Results*

Mean	SD	N
100.50	28.17	200

Norms

z-Score Norms have been prepared the conversion of Raw Scores into standard scores for the purpose of interpretation of the Techno-pedagogical competency of Teachers, and have been presented in Table 4. Norms of interpretation of the z-Scores into the level of competency have been given in Table 5.

TABLE 2.10: Z-Score Norms for teacher's Techno-pedagogical Competency Scale**Mean: 100.50****SD:28.17****N=200**

RAW Score	z-Score	RAW Score	z-Score	RAW Score	z-Score	RAW Score	z-Score
41	-2.12	71	-1.05	101	+0.01	131	+1.08
42	-2.08	72	-1.01	102	+0.05	132	+1.12
43	-2.01	73	-0.97	103	+0.08	133	+1.15
44	-2.01	74	-0.94	104	+0.12	134	+1.19
45	-1.97	75	-0.90	105	+0.15	135	+1.23
46	-1.94	76	-0.86	106	+0.19	136	+1.26
47	-1.90	77	-0.83	107	+0.23	137	+1.30
48	-1.86	78	-0.79	108	+0.26	138	+1.33
49	-1.83	79	-0.76	109	+0.30	139	+1.37
50	-1.79	80	-0.72	110	+0.33	140	+1.40
51	-1.76	81	-0.69	111	+0.37	141	+1.44
52	-1.72	82	-0.65	112	+0.40	142	+1.47
53	-1.69	83	-0.62	113	+0.44	143	+1.51
54	-1.65	84	-0.58	114	+0.47	144	+1.55

55	-1.62	85	-0.55	115	+0.51	145	+1.58
56	-1.58	86	-0.51	116	+0.55	146	+1.62
57	-1.55	87	-0.47	117	+0.58	147	+1.65
58	-1.51	88	-0.44	118	+0.62	148	+1.69
59	-1.47	89	-0.40	119	+0.65	149	+1.72
60	-1.44	90	-0.37	120	+0.69	150	+1.76
61	-1.40	91	-0.33	121	+0.72	151	+1.79
62	-1.37	92	-0.30	122	+0.76	152	+1.83
63	-1.33	93	-0.26	123	+0.79	153	+1.86
64	-1.30	94	-0.23	124	+0.83	154	+1.90
65	-1.26	95	-0.19	125	+0.86	155	+1.94
66	-1.23	96	-0.15	126	+0.90	156	+1.97
67	-1.19	97	-0.12	127	+0.94	157	+2.01
68	-1.15	98	-0.08	128	+1.97	158	+2.05

TABLE 2.11: Norms for Interpretation of the Level of Teacher’s Techno-pedagogical Competency

69	-1.12	99	-0.05	129	+1.01	159	+2.08
70	-1.08	100	-0.01	130	+1.05	160	+2.12

Sr. No.	Range of 01and above z –Score	Grade	Level of Competency
1.	+2.01 and above	A	Extremely High
2.	+1.26 to +1.25	B	High
3.	+0.51 to +1.25	C	Above Average
4.	-0.50 to +0.50	D	Average
5.	-0.50 to -1.25	E	Below Average
6.	-1.26 to -2.00	F	Low
7.	-2.01 and below	G	Extremely Low

2.6 PROCEDURE OF DATA COLLECTION

Investigator met the respondents personally, explained them about the study and gain their confidence. Then the survey questionnaire was distributed to teachers. A few days were given to the teachers to fill up the questionnaires. The objective and instructions for giving the information was explored to the teachers. Further they were given surety that the information provided by them will not be disclosed and will be used for research purpose only.

Investigator identified total 20 schools on the basis of Schools' good physical facility and considered schools of repute by surveying; finally ten from Jalandhar district and ten from Ludhiana district of Punjab were identified. The principals were requested to fill a checklist to know about the usage and availability of ICT for instruction purpose. Investigator visited 20 schools, ten from Jalandhar district and ten from Ludhiana district of Punjab. The principals were requested to fill a checklist to know about the usage and availability of ICT for instruction purpose.

Table 2.12: List of school

Sr. No.	JALANDHAR DISTRICT	LUDHIANA DISTRICT
1.	Akal Academy, Bilga	Guru Nanak Model Sr. Sec. School
2.	Brilliant Convent School	Atam Public Sr. Sec. School
3.	Vinayak Public High School	HVM Convent Sr. Sec. School
4.	S.T.S World School	Dayal Public Sr. Sec. School
5.	Shiva Public School	Shishu Model High School
6.	SRT DAV Public School	S.D.P Senior Secondary School
7.	Dips Nurmahal	Atam DevkiNiketan School
8.	Liberty Public School	AVM High School
9.	Shree Hanumat International Public School	BCM Arya Model Senior Secondary School
10.	Excelsior Convent School	Dashmesh Public High School

Below given format was given to principals to know the level of availability and usage of ICT for instruction purpose. Those schools which were not using the ICT though availability was there were dropped.

Table 2.13: Availability and Usage of ICT

School Name:					
City					
Principal Name: Mr., Ms., Dr.					
Sr. No.	Items	Availability		Used Daily	
		Yes	No	Yes	No
1	Computer				
2	Smart Boards				
3	Projector in Classrooms				
4	Internet				
5	If any other Mention				

Investigator finally selected six secondary schools from Jalandhar district and four secondary schools from Ludhiana district. The distribution of the school selected from 2 districts given in the table below.

Table 2.14: The distribution of the school selected from 2 districts

Sr. No	JALANDHAR DISTRICT	LUDHIANA DISTRICT
1.	S.T.S World School	Guru Nanak Model Sr. Sec. School
2.	Shiva Public School	Atam Public Sr. Sec. School
3.	SRT DAV Public School	HVM Convent Sr. Sec. School
4.	Akal Academy, Bilga	Dayal Public Sr. Sec. School
5.	Brilliant Convent School	
6.	Dips Nurmahal	

In the present study - techno-pedagogical competencies was taken as the dependent variable and professional commitment as the independent variable. Random sampling technique was employed for data collection. Two districts of the Punjab i.e. Jalandhar and Ludhiana were selected. From 10 selected schools viz. six secondary schools from Jalandhar district and four secondaryschools from Ludhiana district. From the selected schools, 200 teachers both male and female were considered for data collection.

2.7 DATA ANALYSIS TECHNIQUE

The collected data by the above mentioned tools will be tabulated, analyzed and interpreted.

For the current study the following statistical techniques were used:

- i. Statistical techniques like mean, median, mode and SD to compute the data.
- ii. To see the significance of difference between two means, t- test was employed.
- iii. Karl Pearson correlation was used to find the relationship between two variables.

CHAPTER-3

ANALYSIS AND

INTERPRETATION

CHAPTER- III

ANALYSIS AND INTERPRETATION

3.1 ANALYSIS AND INTERPRETATION OF DATA

Data analysis and interpretation is an important element in the research study without which the research is incomplete. An accurate and appropriate analysis of research findings is an essential part of ensuring data reliability. If the data is analyzed improperly using wrong statistical method, it misrepresents the scientific findings, and misinforms the casual readers (Shepard, 2002).

After the collection of data, it has to be studied thoroughly in an organized manner and find out the facts in it. The gathered data has to be organized, checked for completeness, and recorded. It is the process of applying statistical techniques systematically to describe and illustrate, reduce and recap, and evaluate data. According to Shamoo and Resnik (2003) various analytic procedures “provide a way of drawing inductive inferences from data and distinguishing the signal (the phenomenon of interest) from the noise (statistical fluctuations) present in the data..” Data analysis involves the providing accurate data, recording them and drawing inferences from the facts by employing accurate statistical method. In nutshell, the analysis of data comprises of summary of the data, identification of relationships and differences between variables, comparison of variables and forecasting outcomes. The analyzed data must provide answers to the research questions or hypothesis.

Interpretation is the next step after the data has been analyzed. The determination of the significance and implications of the research are put forward by interpreting the analyzed data from the appropriate perspective. It is giving meaning to the findings with proper judgment of the data and identification of the lessons learned. Therefore, for the present study, the data has been analyzed and interpreted as following.

3.1.1 Results pertaining to professional commitment of male and female secondary school teachers.

The first objective of the present study was to study the difference in the professional commitment of sec. school teachers. After the collection of data, the data was scored and t-test was applied to find out the difference in the professional commitment of male and female teachers. The

data pertaining to scores of mean, standard deviation and t-test is depicted in the following table 3.1.

TABLE 3.1: Difference in professional commitment of male and female teachers

Variables	Groups	N	Mean	SD	t-value	p-value	Remarks
Professional Commitment	Male	200	164.12	19.209	.210	.834	In significant
	Female		163.20	21.009			

*significant at 0.05 level of confidence

*significant at 0.01 level of confidence

INTERPRETATION

Table 3.1 shows that the mean score of male teachers with regard to professional commitment is 164.12 more than the mean score of female teachers i.e. 163.20. The calculated t-value for the professional commitment of male and female teachers came out as .210 which is less than table values (1.97 at 0.05 and 2.84 at 0.01 levels) at both the levels of significance which depicts that there is no significant difference in professional commitment of male and female teachers. The hypothesis stating that ‘there is no significant difference in the competencies of male and female teachers of secondary school’ is not rejected. Thus, we can conclude that male and female teachers do not differ in their professional commitment at (0.01 and 0.05) both the levels of significance. The graph showing difference in professional commitment between male and female secondary school teachers are presented in figure 3.1.

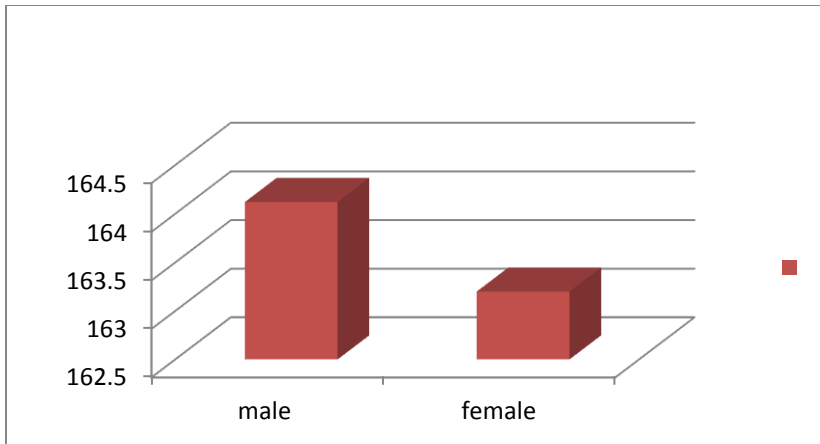


Figure 3.1: professional commitment between male and female secondary school teachers

3.1.2 Results pertaining to difference in the techno-pedagogical competences of male and female of the secondary school teachers.

The second objective of the present study was to study the difference in the techno-pedagogical competencies of secondary school teachers. Then, after the obtaining data and scoring, t-test was applied to find out the difference in performance of secondary school teachers. The data pertaining to scores of mean, standard deviation and t-test are depicted in the following table 3.2

TABLE 3.2

Difference in techno-pedagogical competencies of male and female teachers

Variables	Groups	N	Mean	SD	t-value	p-value	Remarks
Techno-pedagogical Competencies	Male	200	135.62	24.671	1.93	.847	In significant
	Female		136.72	27.586			

*significant at 0.05 level of confidence

*significant at 0.01 level of confidence

INTERPRETATION

Table 3.2 shows that the mean score of male teachers with regard to their techno-pedagogical competencies 135.62 which is less than the mean score of female teachers i.e. 136.72. The calculated t-value for the techno-pedagogical competencies of male and female students came out as 1.93 which is less than table values (1.97 at 0 .05 and 2.60 at 0.01) at both the levels of significance which depicts that there is no significant difference in techno-pedagogical competencies of male and female teachers. Hence, the hypothesis stating that ‘there is no significant difference in the techno-pedagogical competencies of male and female teachers of secondary school’ is not rejected. Thus, we can conclude that male and female teachers differ in their techno-pedagogical competencies according to their mean scores but not significantly at both 0.05 and 0.01 levels of significance. The graph showing difference in Techno-pedagogical competencies between male and female secondary school teachers are presented in figure 3.2

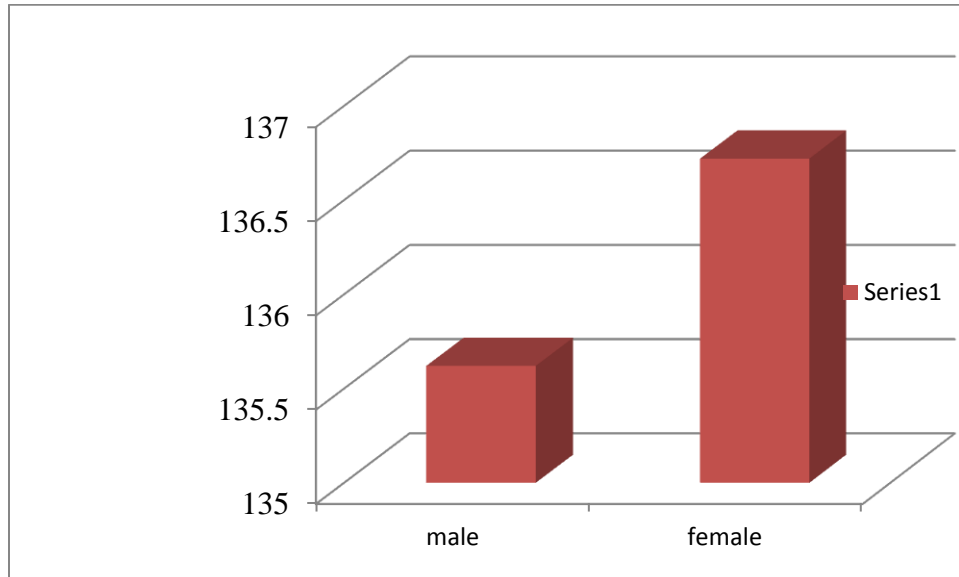


Figure 3.2: Techno-pedagogical competencies between male and female secondary school teachers

3.1.3 Results pertaining to relationship between the professional commitment and techno-pedagogical competencies of the secondary school teachers.

The final objective of the present study was to study the relationship between the professional commitment and techno-pedagogical competencies of the secondary school teachers. For this purpose, Karl Person Correlation was applied to find out the association between professional commitment and techno-pedagogical competencies of the secondary school teachers and data pertaining to scores of co-relation is being depicted in the table 3.3

TABLE 3.3
Relationship between professional commitment and techno-pedagogical competencies of secondary school teacher

Variables	Df	R	p
Professional Commitment	198	-.086	.227
Techno-pedagogical Competencies			

INTERPRETATION

From the above mentioned table it is clearly evident that the r' value regarding professional commitment and techno- pedagogical competencies is found out to be -.086. Whereas table value for the same at 198df is found out to be 0.139 and 0.182 at 0.05 and 0.01 levels of significance respectively. Hence the hypothesis i.e. there exists no significant relationship between professional commitment techno-pedagogy competencies of teachers is accepted. This proves that techno-pedagogy competence has no role to play in deciding the professional commitment. Further the value of correlation -.086 is very negligible in nature which again infers that professional commitment and techno-pedagogical competencies of teachers are not significantly interrelated to each other.

CHAPTER-4

CONCLUSIONS,

RECOMMENDATIONS AND

SUGGESTIONS

CHAPTER-IV

CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS

4.1 CONCLUSIONS

The aim of the study was to find the relationship between techno-pedagogical competencies among teachers in relation to professional commitment. The investigator used descriptive survey method to carry out the research and obtain the solutions of the problem as stated before. The collected data was then analyzed using statistical techniques like t-test and Karl Person correlation for finding the difference and relationship between variables respectively. Further, the analyzed data was interpreted.

In the light of the interpretation of the data, conclusions and generalization were made with all care and caution. Conclusion is the hub of the research study. If one is not able to conclude, the study goes in vain. It is summing all the important findings and wrapping up the study which then proves as the base for any recommendations for future investigators. Critical and logical thinking were done in summarizing the findings of the study. On the basis of analysis and interpretation of data, following findings and conclusions can be drawn and recommendations were made.

1. There is no significant difference in the professional commitment of male and female of the secondary school teachers. It can be concluded from the findings that there exists no significant difference in the professional commitment among the male and female secondary school teachers. The female teachers are equally competent as male teachers in professional commitment. Besides the slight differences in the average commitment level of teachers, there is no significant difference statistically as such between male and female secondary school teachers. This very slight difference of higher commitment level of male teachers than female in their mean score may have appeared due to some factors like intelligence, home environment, teaching attitude, good relationship with students, and school facilities and environment too. Hence, it is certain that male and female teachers do not differ in their professional commitment.

2. There is no significant difference in the techno-pedagogical competencies of male and female secondary school teachers. Regarding the techno-pedagogical competencies secondary school teachers, there was minor difference in their mean techno-pedagogical competencies score. Female teachers were performed little better than the male teachers. This minor difference emerged perhaps due to female teachers more adaptive approach in learning task and taking more

responsibility for their failure as stated by (Rusillo and Arias, 2004). Otherwise, statistically it showed no difference in the techno-pedagogical competencies of male and female of secondary schools teachers.

3. There is significant relationship between the professional commitment and techno-pedagogical competencies of secondary school teachers. Finally, it was also found out that there lies significant relationship between professional commitment and techno-pedagogical competencies. The competency of teacher has positive effect on students' performance. Darling-Hammond (2000) also unveils that measures of teacher preparation and certification are the strongest correlates of student achievement. This entails that if competent teachers are prepared, they can directly increase the achievement of the students. Similarly, Aziz (2010) revealed that teachers' competence like good lesson planning with enriched contents, good disciplinarian with good classroom management, ample teaching experience and use of formative assessment brought out promising student outcomes whereas demographic factors like gender, urban/rural, family size and income had no relationship with students' achievement. Moreover, English language teachers showed positive influence on performance of students than teachers with formal education (Din, Khan, and Mahmood, 2010).

In the view of the above findings, it is evident that teachers play pivotal role opening every new chapter of the educational lives of the students. They are the prime mover of the future bureaucrats. Teachers' every single act can influence the students to a great extent. Starting from the way he dresses to the way he speaks, teaches, motivates, mingles, cooperates, and innovates and so on. Though students are the central to the education system but in absence of teachers, the students lose their significance. The competency of teachers in every educational institution should be given high regard and every teacher must be nurtured with Techno-pedagogical competencies and knowledge especially focused on English as it is a lingua-franca.

4.2 LIMITATIONS

Every research work has some limitations. Some limitations of the study are as follows:

1. The area of the study was limited to only two district of Punjab.
2. The sample included only two hundred teachers teaching the secondary school for the study as the sample.
3. The time constraint was also a limiting factor in conducting the study.

4. The variable professional commitment could be studied in relation to other variables such as social-economic status, personality and mental health.

4.3 RECOMMENDATIONS

Following are the recommendations given by the investigator after her finding of the study:

1. Short-term or long-term refresher courses, workshops, and seminars regarding the enhancement of the knowledge, skills and attitude of teachers should be conducted regularly.
2. Each teacher should be provided opportunities to explore within and outside the country to develop pedagogical and professional skills and knowledge.
3. Certain educational policies and the curriculum materials need to be framed in collaboration with teachers especially those serving in remote areas as they are the ones who know the ground reality.
4. The service of the teachers working in the remote districts, serving in places with peculiar climatic condition (where there are frequent natural hazards), and teachers working in poorly structured or poorly equipped schools needs to be appreciated rather than illogically questioning the poor performance of the students.
5. Teachers need to be the central focus along with the students because well cared teachers of the system ensure that the rest is well taken care of.

4.4 SUGGESTIONS

Following are few areas which can be taken up by other investigators:

1. The study of similar nature can be also carried out on primary as well as higher secondary schools.
2. The study can be conducted on the national level also.
3. The study can be conducted on the other districts of Punjab.
4. The study can be carried out by selecting larger sample size of both the variables for higher reliability and validity.

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APPEENDICES