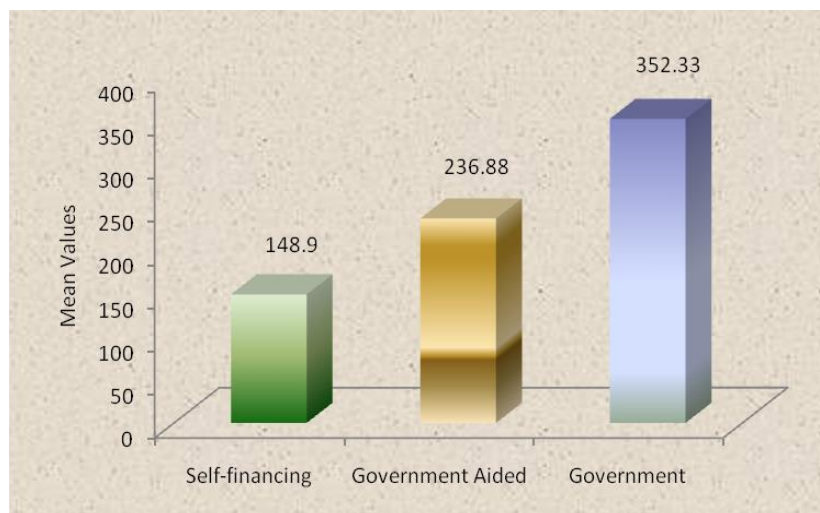


**MINOR RESEARCH PROJECT
ATTITUDE AND APTITUDE TOWARDS TEACHING AMONG
STUDENT-TEACHERS**

**Funded by
Sriman N.K. Thirumalachariar National Education Society**

Project Report Submitted to Internal Quality Assurance Cell



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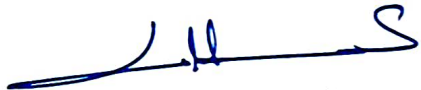
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May 2015


DECLARATION

We hereby declare that the project entitled 'Attitude and Aptitude toward Teaching among Student-Teachers' submitted to Internal Quality Assurance Cell is our original work and the project has not formed the basis for the award of any degree, diploma, associateship, fellowship or similar other titles. It has not been submitted to any other University or Institution for the award of any degree or diploma.

Place : Chennai
Date : 29.05.2015


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CERTIFICATE

Certified that the project entitled '**Attitude and Aptitude toward Teaching among Student-Teachers**' is a record of project work done by Dr. S. Chamundeswari, Principal Investigator, Mrs. Deepa Franky, Co-investigator, Dr. V.J. Uma, Co-investigator, during the academic year 2014-2015 and that the project has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or similar other titles and that it is an independent work done by the investigators.

Place : *Chennai*
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CONTENT

Serial No.	Title	Page No.
	List of Tables	
	List of Figures	
1	Introduction	1
2	Need for the Current Research	4
3	Theoretical Background of the Present Study	5
4	Conceptual Framework of the Study	6
5	Objectives of the Present Study	15
6	Statement of the Problem	17
7	Review of Related Literature	17
8	Hypotheses of the Present Study	36
9	Methodology of the Present Study	37
10	Analyses, Interpretation and Discussion	50
11	Implications of the Study	84
12	Conclusion	86
	Reference	
	Appendix	

LIST OF TABLES

S.No.	Table No.	Title	Page No.
1	1	Sample Distribution	40
2	2	Analysis of Variance of Attitude towards Teaching among Student-Teachers in Different Categories of Colleges of Education	51
3	2a	Statistical Analysis of Means of Attitude towards Teaching among Student-teachers in Self-financing and Government-aided Colleges of Education	52
4	2b	Statistical Analysis of Means of Attitude towards Teaching among Student-teachers in Self-financing and Government Colleges of Education	53
5	2c	Statistical Analysis of Means of Attitude towards Teaching among Student-teachers in Government-aided and Government Colleges of Education	54
6	3	Analysis of Variance of Aptitude towards Teaching among Student-Teachers in Different Categories of Colleges of Education	56
7	3a	Statistical Analysis of Means of Aptitude towards Teaching among Student-teachers in Self-financing and Government-aided Colleges of Education	57
8	3b	Statistical Analysis of Means of Aptitude towards Teaching among Student-teachers in Self-financing and Government Colleges of Education	58
9	3c	Statistical Analysis of Means of Aptitude towards Teaching among Student-teachers in Government-aided and Government Colleges of Education	59

S.No.	Table No.	Title	Page No.
10	4	Analysis of Variance of Performance of Student-teachers in Different Categories of Colleges of Education	61
11	4a	Statistical Analysis of Means of Performance of Student-teachers in Self-financing and Government-aided Colleges of Education	62
12	4b	Statistical Analysis of Means of Performance of Student-teachers in Self-financing and Government Colleges of Education	63
13	4c	Statistical Analysis of Means of Performance of Student-teachers in Government-aided and Government Colleges of Education	64
14	5a	Statistical Analysis of Means of Attitude towards Teaching among Male and Female Student-teachers in Self-financing Colleges of Education	68
15	5b	Statistical Analysis of Means of Attitude towards Teaching among Male and Female Student-teachers in Government-aided Colleges of Education	69
16	5c	Statistical Analysis of Means of Attitude towards Teaching among Male and Female Student-teachers in Government Colleges of Education	70
17	6a	Statistical Analysis of Means of Aptitude towards Teaching among Male and Female Student-teachers in Self-financing Colleges of Education	72
18	6b	Statistical Analysis of Means of Aptitude towards Teaching among Male and Female Student-teachers in Government-aided Colleges of Education	73

S.No.	Table No.	Title	Page No.
19	6c	Statistical Analysis of Means of Aptitude towards Teaching among Male and Female Student-teachers in Government Colleges of Education	74
20	7a	Statistical Analysis of Means of Performance of Male and Female Student-teachers in Self-financing Colleges of Education	76
21	7b	Statistical Analysis of Means of Performance of Male and Female Student-teachers in Government-aided Colleges of Education	77
22	7c	Statistical Analysis of Means of Performance of Male and Female Student-teachers in Government Colleges of Education	78
23	8	Analysis of Correlation between the Select Variables among Student-teachers in Different Categories of Colleges of Education	82

LIST OF FIGURES

Figure No.	Title	Page No.
1	Conceptual Framework of the Study	15
2	3 x 2 Factorial Design	39
3	College-wise Distribution of Sample	41
4	Sex-wise Distribution of Sample	42
5	Means of Attitude towards Teaching among Student-Teachers in Different Categories of Colleges of Education	55
6	Means of Aptitude towards Teaching among Student-Teachers in Different Categories of Colleges	60
7	Means of Performance of Student-Teachers in Different Categories of Colleges of Education	65
8	Means of Attitude towards Teaching among Male and Female Student-Teachers in Self-financing, Government-aided and Government Colleges of Education	71
9	Means of Aptitude towards Teaching among Male and Female Student-Teachers in Self-financing, Government-aided and Government Colleges of Education	75
10	Means of Performance of Male and Female Student-Teachers in Self-financing, Government-aided and Government Colleges of Education	79

ATTITUDE AND APTITUDE TOWARD TEACHING AMONG STUDENT-TEACHERS

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1. INTRODUCTION

Education is one of the greatest services provided by teachers. It is vital for anything. The role played by teachers becomes a very important component and in fact it can be said that they are in way our nation builders. For any student, education and character are the basic foundations and it is laid by teachers as well as parents. They tend to instill values, attitudes and behaviors in children right from childhood. Today with challenging environment, in any school or college, everything primarily depends on the teacher. If students perform well, the onus is on the school and teacher. In case the performance is bad, the blame ultimately falls on the teacher. The important point to be noted is that it is not only the teachers who are to be blamed but also there is equal responsibility on the parents as well as students. The role of teachers becomes very important as they are the ones who mould students in the right way. There are various roles played by teachers in understanding students needs. Some of them are learning about students interests, planning and organizing classroom activities, assessing the students performance, understanding the basic needs of students, encouraging them to improve, calling for students-parents meeting and discussing with them about the students performance or discipline,

motivating students to do more better, encouraging them to participate in extra curricular activities, etc. The role of teachers has become very challenging. It is quite essential for teachers to be social, serious, understanding and friendly nature so that students feel comfortable to seek any help without hesitation. The basic role for any teacher is to create a very interesting classroom for students. Students must feel comfortable with the teacher and at the same time, teacher must encourage students. Students should be taught the right path and knowledge or matter should be conveyed in such a manner that students would find it very easy to understand. Teachers work in close co-ordination with students to help them in building up their future. They mould the students to bring out their skills or improvise them, teaching good habits/attitudes and helping them to become good citizens of the nation. There are many students who feel shy or have some personality problems. It becomes quite important for teachers to attend to these students personally and encourage them to overcome this shyness or personality disorders. A good teacher in fact becomes a role model for students. Students tend to follow their teacher in almost every way like manners, style etc. Students tend to get affected by the teacher's affection as well as love for them. So the teacher should have the professional competence as well as good moral background in order to impart these values to students. With the changing environment and challenging careers, teachers are helping students to manage their careers as well as create solid foundation for them in different fields. Students are very busy making up their own decisions and teacher tends to become a sort of guide on their side. Today in this modern age, expectations as well as demands are more from parents. They expect their children to do well in every field. This tends

to create a major impact on students as well as teachers. The role of teachers becomes very challenging. There are numerous problems faced by teachers in schools, like, bad discipline, poor performance by students, student absenteeism, lack of support from parents, lack of ambition for students to do well, low self confidence, attitudinal problems or personality disorders of students are some of the common problems encountered by teachers. In fact teachers become accountable for every progress of the student. In such a situation training teachers with good attitude and aptitude toward teaching becomes very essential.

Teacher's attitude and aptitude are important variables in classroom application of new ideas and novel approaches to instruction (Reinke and Moseley, 2002). Methods must be established that facilitate the development of teacher's attitude and aptitude that supports contemporary instructional applications of research conclusions and correspond with best practices in education (Kennedy and Kennedy, 1996). Currently there is discussion and exploration of the relationship between teacher's attitude, aptitude and the instructional methods, the educational implementation of technology, the role of school in the prevention of violence, and the place of popular culture in the curriculum (Johnson and Andrew, 2005). Teacher's education aims to produce highly motivated, conscientious and efficient classroom teachers for all levels of our educational system, and to help teachers fit into social life of the community, and society as well. Today, the teaching profession is no longer attractive to many people as it did in the past. This fever may be catching up with prospective university students many of whom would rather study other subjects or courses in the university than enroll in teacher education programme (Aduwa and Raymond, 2005).

Job appreciation may not be enough to sustain public interest in the teaching profession. Schiefele (1991) has highlighted the relationship between interest and motivation and their link with effort in education. It has been found that many teachers spoke about personal interests and hobbies, and described the ways in which those interests converged with attitudes towards their professional practice. There is no doubt that adequate remuneration, regular payment of salaries and other benefits, regular promotion, pleasant working environment, and high social status are closely related to job motivation (Obinaju, 1996).

2. NEED FOR THE CURRENT RESEARCH

Attitude refers to the predispositions which have developed through a long and complex process. It is an important concept to understand human behaviour. Aptitude is the aptness or quickness to succeed in a specific field of activity. People's attitude toward their profession and their aptitude in their profession has an invariable effect on their performance. This is valid in the profession of teaching, because aptitude to be a teacher requires proper attitude. Thus, a teacher with cent percent good aptitude will have a good attitude and is sure to perform as very effective teachers in classrooms.

A positive attitude may improve an individual's performance whatever be the nature of work one is engaged. It is believed that competent people in all profession enjoy job satisfaction with positive attitude. There maybe a positive correlation between attitude and performance. A number of investigations carried out in this direction which support that the teachers attitude is an important factor because effective teaching requires a feeling of positive attitude.

Teachers are more responsible for bringing up the children with creative minds. Teachers should love the job, students, educational process, class room practices and other teachers also. Unless and until a teacher has high positive attitude toward the profession he will not perform effectively. So the student community will be affected academically. Many studies conducted on teacher attitude and aptitudes have said that positive attitude and aptitude are important for teachers to perform better. The attitude, aptitude and performance of student-teachers, vary from institute to institute in accordance to the gender and so it is found very essential to study the aptitude, attitude and performance of student-teachers.

3. THEORETICAL BACKGROUND OF THE PRESENT STUDY

Teacher education system is an important vehicle to improve the quality of school education. The revitalization and strengthening of the teacher education system is, therefore, a powerful means for the upliftment of education standards in the country. It inculcates the necessary pedagogical skills and competencies among the teachers and makes them professionally competent to meet the demands of the society. The National Council for Teacher Education (NCTE) after becoming a statutory body by an act of parliament in 1993, has taken number of steps for raising the quality of teacher education system. It has formulated norms and standards for all teacher education courses i.e. pre-primary, primary, secondary, senior secondary, physical and distance education courses.

The success of any educational process depends on teacher effectiveness, teaching aptitude, attitude towards teaching and many more factors. Teacher effectiveness refers to the results a teacher gets or to the

amount of progress the pupils make towards some specified goal of education. Good (1959) observed teaching effectiveness as "the degree of success of a teacher in performing instructional and other duties specified in his contract and demanded by the nature of his position."

Attitudes are dynamic as they change with time and experience. They are not innate but are acquired. Attitude is influenced by environmental factors by which the person is surrounded. Attitudes guide our behaviour. Thurston and Chave (1929) first used the term 'attitude' to denote the sum-total of a man's inclination and feelings, prejudice or bias, preconceived notions, ideas, fears, threats, convictions about any specific topic. Attitude of teachers are developed during their passage of becoming teachers-in their schools, colleges, university and especially in teacher training institutes. A teacher's attitude not only affects his behaviour in classroom but also influence the behaviour of his students. The attitude of a person also influences the aptitude of that person. The term 'aptitude' narrowly defined is the native or in born capacity of people in tasks requiring intellectual ability and skill. Although aptitude has an innate basis, yet more broadly, environment has maximum influence in the formation of aptitudes. According to Bingham (1937), aptitude is a condition or set of characteristics regarded as symptomatic of an individual's ability to acquire with training some usually specified knowledge, skill or set of responses such as the ability to speak language, to produce music."

4. CONCEPTUAL FRAME WORK OF THE STUDY

Education is conceived as a powerful agency, which is instrumental in bringing about the desired changes in the social and cultural life of a nation. The whole process of education is shaped and moulded by the human

personality called the teacher, who plays a pivotal role in any system of education. The preparation of such an important functionary must conceivably get the highest priority. His is a challenging profession and only those teachers can shoulder the heavy responsibilities of nation building, who are adequately prepared and have sound professional attitude. This adequacy of preparation, of course, signifies development of adequate skills, dedication to teaching and a determination for continuous growth and learning. Teachers are expected to use the best practices and strategies to meet challenge demands of their career. If the teachers are well trained and highly motivated, learning will be enhanced. The teaching profession demands clear set goals, love for profession and obviously the more favourable attitude towards the profession. India needs a well-trained and professionally sound teachers and a lot of responsibility falls on teacher training institutions. In this perspective these institutions should make painstaking efforts to equip the prospective teachers not only with teaching skills but also try to promote the positive professional attitude in them. Secondary education is an important sub sector of entire education system because it is the most crucial stage of life. The competent, professionally trained and enthusiastic teachers are required to teach at this level.

4.1 Teaching Performance of Student-Teachers

Performance in general, refers to what is expected of an individual employee and group of employees. Every employee contributes for the organization and its improvement through their performance. It is considered as a track record of organizational effectiveness. The mere presence of employee goals or target is not sufficient to make an organization or an institution effective. An assessment is imperative for an organization. It is

also the contention of performance researchers that without a regular assessment of performance an organization as well as the individual fails over a period of time. Therefore in organizational literature it is found people have amassed data on the importance of performance and the impact of performance on an organizational or an institutional growth (Heeriegel, Slocum and Woodman, 2001).

Facilitating performance therefore became a commitment for the organization. Performance facilitation, according to the organizational experts will emphasize a constant management and control over individual performers. It has got three components within itself (North Craft and Neal, 1990).

- Selecting the right person for the right job
- Providing adequate resources
- Providing a feedback of performance

These three components contribute for facilitating employee performance. However, there may be many road blocks to successful performance due to multiple reasons about which the organization will have to be sensitive. This awareness over a period of so many decades has led to the development of multiple assessment procedures in various occupational context. The researchers have also found great deal of benefit out of these appraisals for selection, training, motivation and development of these employees who are the foundations of the organizations.

Thinking along in similar lines, enabled education researchers to focus on teacher performance usually referred as teacher effectiveness. Many studies in literature have involved factors such as teaching style,

behaviour characteristics, methods and competencies influencing effective learning and effective student performance. These researches have been classified as the process-product research (Luthans, 2002). Many inferences have been drawn regarding teacher performance especially with reference to the variables influencing. Teacher effectiveness is considered as an outcome of teacher competence predisposition and teacher performance. The educators, the education administrators and education researchers focused on the insignificant factor and generated a fund of knowledge helpful in education policy making, planning and administration.

In fact in the Indian context teacher performance evaluation became one of the national objectives for the government (Vedhanayagam, 1989; Balachandran, 2000). The present study focusing on the positive and negative attributes enhancing or hindering teaching has therefore included an assessment of teachers performance in order to study the global picture of predispositions of stressors, the effect of moderators on these stressors and the emergence of burnout experience toward teachers performance.

The earlier studies are not showing any definite direction in the relationship between teacher variables and teachers performance as a result, the present investigator though it was essential to establish the nature and extent of influence of certain negative and positive teacher variables on teacher performance with an implication of developing programmes for improving their performance. An educational institution always has an intrinsic responsibility of moulding a competent pupil, as expected by the pupil, by the parent and by the society at large.

This multifaceted responsibility had emphasized the institution to understand the human resource in the first place, disseminate knowledge and finally, the human resource receives the knowledge for future application. Teacher being the inherent component of this system needs to be attended, understood and supported. Therefore, the variable of teacher became the key variable in the present study.

4.2 Attitude toward Teaching

Attitudes are predispositions which have developed through long and complex process. According to Anstasi (1990) attitude is a tendency to react favorably or unfavorably forward a designated class of stimuli. It is evident that when so defined, attitude cannot be directly observed, but must be inferred from over behaviour, both verbal and non - verbal.

Vaidya (1989) explained attitude as a condition of readiness for a certain type of activity. Attitudes held by the individuals may be simple or complex, stable or unstable, temporary or permanent and superficial or fundamental judgments based upon insufficient facts are likely to yield wrong results and there by develop biased attitude.

Attitudes offer great possibilities for successful achievement in studies. They are an important motivator of behaviour and affect the achievement of the students. A great deal of research literature provides an evidence for positive link between attitude and achievement.

According to Crow and Crow (1979) a child's attitude toward his work affects his worthwhileness in his activity. A child should not be permitted to do completely as he wishes. He should be stimulated toward desirable

activity through the arousal of interest in worthwhile projects constructive, objective attitude encouraged during childhood serve well during adolescences.

Mcleod (1992) revealed that the positive on negative feeling is of moderate intensity and responsible stability. Aiken (1996) defined attitude as a learned predisposition or tendency on the part of an individual to respond positively or negatively to some object, situation, concept, or another person. Lefton (1997) contended that attitude is a learned predisposition to respond in a consistently favorable on unfavourable manner to given object.

Several important components emerge from these definitions attitude is learned; it influences one to take a stated or implied attitude to something or to have such an attitude as a result of prior influences that may be either positive or negative end there is response consistency. According to Morris (1996), an attitude is a relatively stable organization of beliefs, feelings, and tendencies toward something that is the attitude object. Attitude can predict behaviour and attitudes are acquired through learning and then developed through experience.

Lofton (1997) viewed attitude as long lasting patterns of feelings and beliefs about other people, ideas or objects that are based in a person's past experiences and shape their future behaviour. These attitudes are usually evaluative and serve certain in functions such as guiding new behaviours and helping the individual interpret the world efficiently. Lofton (1997) also stressed on the three dimensions of attitude, namely, cognitive, emotional and behavioural. Each dimension serves a specific function. The cognitive dimension of an attitude consists of thoughts and beliefs. The emotional dimension of an attitude involves evaluative feelings, such a like or dislike.

The behavioural dimension of an attitude determines how people actually show their beliefs and evaluative feelings.

Attitude is a hypothetical construct that represents an individual's like or dislike for an item. Attitudes are positive, negative or neutral views of an "attitude object": i.e. a person, behaviour or event. People can also be "ambivalent" toward a target, meaning that they simultaneously possess a positive and a negative bias toward the attitude in question.

Attitudes are composed from various forms of judgments. Attitudes develop on the ABC model (affect, behavioural change and cognition). The *affective* response is a physiological response that expresses an individual's preference for an entity. The *behavioural intention* is a verbal indication of the intention of an individual. The *cognitive* response is a cognitive evaluation of the entity to form an attitude. Most attitudes in individuals are a result of *observational learning* from their environment. The link between attitude and behaviour exists but depends on human behaviour, some of which is irrational. For example, a person who is in favor of blood transfusion may not donate blood. This makes sense if the person does not like the sight of blood, which explains this irrationality.

Attitudes determine what each individual will see, hear, think and do. They are rooted in experience and *do not* become automatic routine conduct.

Attitude means the individual's prevailing tendency to respond favourably or unfavourably to an object (person or group of people, institutions or events). Attitudes can be positive (values) or negative (prejudice). Social psychologists distinguish and study in specific three

components of the responses. They are a) cognitive component, which is the knowledge about an attitude object, whether accurate or not, b) affective component: feelings toward the object and c) cognitive or behavioural component, which is the action taken toward the object.

We understand that in most situations the three components appear concomitantly to shape teachers' classroom postures, through a direct and indirect in between society, school and teachers, following the model presented above. It raises questions about how does society see the need for change, what are its demands, what is considered modern, and how do these beliefs influence teachers' views and behaviour in school. Thus the variable, attitude toward teaching is included in the present study.

4.3 Aptitude toward Teaching

Apart from general intelligence, each individual possess a certain degree of special or specific talents called aptitude. Aptness to succeed in a specific field of activity is what we mean by quickness to succeed in a specific filed of activity and that is what we mean by aptitude.

An aptitude refers to potential capacity in some specific area. It becomes an actual accomplishment only after suitable training has been provided; otherwise it would simply remain as a potentiality and may not blossom into achievement.

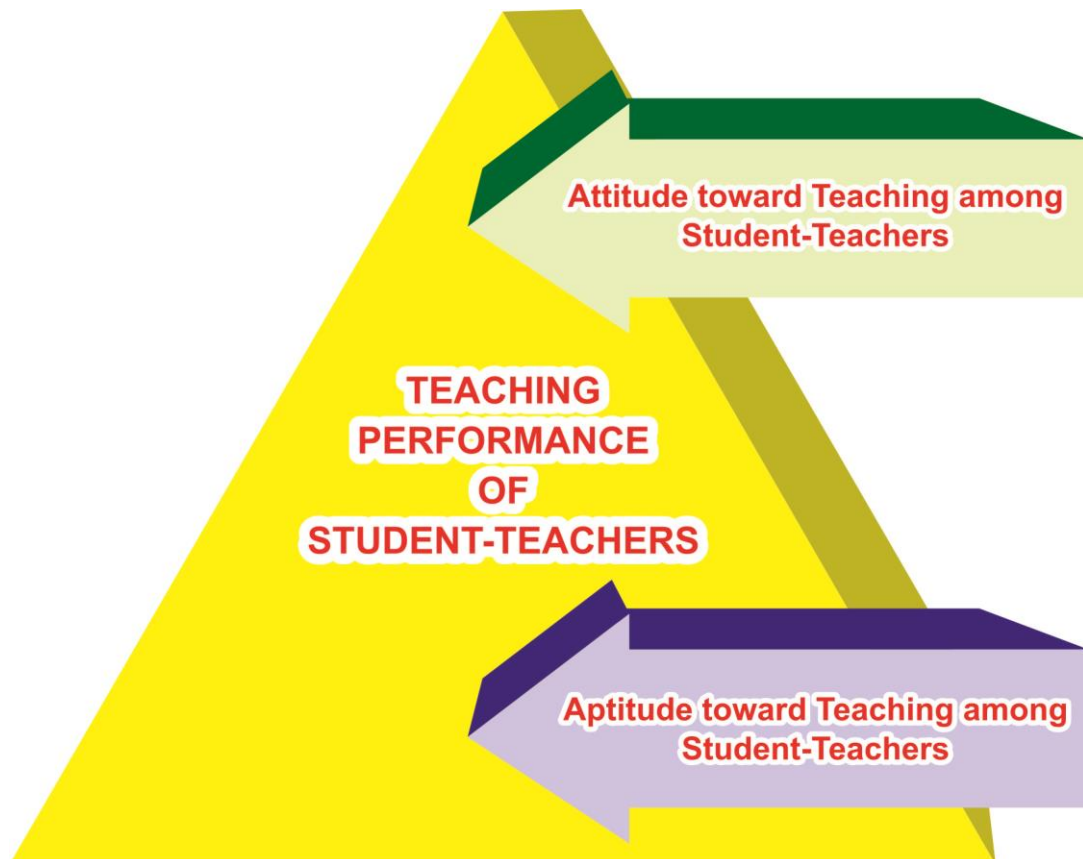
The word aptitude is derived from the word 'aptos' which means 'fitted for'. According to Bingham (1962) aptitude is a condition or set of characteristics regarded as symptomatic of an individual's ability to acquire with training some usually specified knowledge, skill or set of responses such as the ability to speak language, to produce music.

Teaching aptitude means the traits and abilities that constitute to success in teaching. A person with teaching aptitude is one who has a good Proportion of the traits and abilities required for becoming successful in teaching. The magnitude of these traits may differ from individual to individual and even the number of traits possessed by each individual, may also differ. The number of traits required for being successful in teaching compose as a whole, the teaching aptitude Corno and Snow (1986) have compose as a explained the meaning of teaching aptitude as a complex capability, it includes such aspects as alertness, 'witness', a propensity to check students' understanding continuously in a variety of ways, knowledge about how to use.

Teaching aptitude may be described as a special ability which helps an individual to acquire the required degree of proficiency or achievement in teaching field. The knowledge of teaching aptitude of an individual helps us to predict his future success in the teaching field. Normally, in a training situation, people are selected to be teachers because they possess the desire to teach, ability to get along with others, subject knowledge and skills. Most of them do not possess the aptitude to teach knowledge and skills to others.

People's aptitude for teaching range from low to high, and research has shown, there is no positive correlation between teaching aptitude and the desire to teach, personality, or teaching skills. Since it was found necessary to investigate the aptitude toward teaching of student-teachers, the variable aptitude toward teaching has been included in the present study. Thus the conceptual framework of the present study is presented hereunder.

Figure - 1

CONCEPTUAL FRAMEWORK OF THE STUDY**5. OBJECTIVES OF THE PRESENT STUDY**

- (i) To investigate if there is any significant difference in attitude toward teaching among student-teachers studying in self-financing, government-aided and government colleges of education;
- (ii) To investigate if there is any significant difference in aptitude toward teaching among student-teachers studying in self-financing, government-aided and government colleges of education;

- (iii) To investigate if there is any significant difference in performance among student–teachers studying in self-financing, government-aided and government colleges of education;
- (iv) To investigate if there is any significant difference in attitude toward teaching among male and female student-teachers studying in self-financing colleges of education;
- (v) To investigate if there is any significant difference in aptitude toward teaching among male and female student-teachers studying in self-financing colleges of education;
- (vi) To investigate if there is any significant difference in performance among male and female student-teachers studying in self-financing colleges of education;
- (vii) To investigate if there is any significant difference in attitude toward teaching among the male and female student-teachers studying in government-aided colleges of education;
- (viii) To investigate if there is any significant difference in aptitude toward teaching among male and female student-teachers studying in government-aided colleges of education;
- (ix) To investigate if there is any significant difference in performance among male and female student-teachers studying in government-aided colleges of education;

- (x) To investigate if there is any significant difference in attitude toward teaching among male and female student-teachers studying in government colleges of education;
- (xi) To investigate if there is any significant difference in aptitude among male and female student-teachers studying in government colleges of education;
- (xii) To investigate if there is any significant difference in performance among male and female student-teachers studying in government colleges of education and
- (xiii) To investigate if there is any significant relationship between the select variables among student-teachers in self-financing, government-aided and government colleges of education.

6. STATEMENT OF THE PROBLEM

Attitude and Aptitude toward Teaching among Student-Teachers

7. REVIEW OF RELATED LITERATURE

For any researcher, it need not be emphasized that the review of studies related to his area of investigation is essential, but providing information of what has already been done in the field gives direction to the present study.

A survey of related literature is an essential step to get a clear understanding of the problem, which also broadens the general concepts and principles. A survey of related literature implies locating, reading and evaluating reports of research as well as casual observation and opinions

that are related to the individual's planned research project (Agaarwal, 2001). The study of related literature saves a researcher from working on a worked topic, besides helping him to select an ideal problem. It also helps to adopt suitable design for the study. Understanding the limitations of the previous studies ensures perfection in the study to be made. With these aims in view, the investigators have reviewed some of the past studies. The studies have been compiled and presented hereunder.

7.1 Studies related to Teaching Performance of Student-teachers

Carl and George (1983) conducted a study in which twenty pre-service special education teachers participated in a study to examine the effects of the combined technique of peer observation with observation systems technology on the teaching performance of teacher-trainees. The subjects were divided into two groups: experimental and control. Experimental group trainees used well-defined observation systems to collect teacher/pupil data for the provision of feedback to peers, control trainees developed their own systems of anecdotal report. Three major types of data were collected and analyzed: (a) behavior/lesson management, (b) teacher-trainees' instructional management skills, (c) teacher-trainees' feedback strategies. Results showed that the experimental group maintained a higher level of pupil accuracy during direct instruction, maintained a brisker presentation and correct rate, and tended to prompt correct responses less often than the control group.

A questionnaire survey was administered by Chan (2005) to 106 in-service teacher education students of a university in Hong Kong to study their motives and commitment in teaching. Of the three motive factors in taking up teaching as a career, the most influential one is "intrinsic/altruistic

motive”, followed by “extrinsic motive/job condition” and “influence from others”. Four factors influencing the teachers’ commitment in teaching were found, viz. “students’ learning and school development”, “demands on teaching and school practices”, “teaching as a career choice”, “teacher - pupils interaction and attitudes”. Correlational analyses showed that intrinsic/altruistic motive was significantly related to the four commitment factors. Further analysis showed that elements affecting teachers’ commitment in teaching involve school head, colleagues, students, parents and educational changes, which deserve the attention of the education authority to address with appropriate measures.

The study conducted by Wong and Lai (2005) investigated factors affecting Mathematics teaching effectiveness among pre-service primary Mathematics student-teachers. The sample consisted of twenty-four primary Mathematics student-teachers, twelve take Mathematics as their major subject and other twelve take Mathematics as their minor subject in their Bachelor of Education programmes. Data sources were the Mathematics Teaching Supervision Form and post lesson interviews. This study found that Pedagogical Content Knowledge (PCK) is the crucial factor leads to effective Mathematics teaching. However, it is surprising that Subject Content Knowledge (SCK) has no statistically relationship with Pedagogical Content Knowledge (PCK) and Teaching Effectiveness (TE). Besides, and surprisingly, Mathematics minor student-teachers had better PCK than Mathematics major student-teachers. The result indicated that female student-teachers taught better than male student-teachers. The supervisions also indicated that female student-teachers’ instructional strategies were more creative and well designed than male student-teachers.

Isiksal (2005) investigated the effects of gender and year in program on the performance and mathematical self-efficacy beliefs of 145 pre-service Mathematics teachers in Turkey. One of the main purposes of this study is to investigate how duration in a teacher education program influenced the performance and mathematical self-efficacy beliefs of pre-service teachers. In addition, gender differences between male and female pre-service Mathematics teachers, depending upon year in program, are examined. Results revealed that there were significant statistical effects of gender and year in program on both pre-service teachers' performance and self-efficacy scores. Female pre-service teachers scored significantly higher than males on performance, but no significant difference was detected between female and male pre-service teachers with respect to Mathematics self-efficacy scores. Senior pre-service teachers had the highest scores compared to other students in the program on both performance and Mathematics self-efficacy scores.

Mani (1988b) reviewed several studies in teaching and teacher performance and made an inference that teaching has to be analyzed in terms of several classifications such as in term of activities, in terms of objectives and as a mirror of learning. He further stated that there is no single unified theory to explain teacher performance. He indicated a need to synthesize the various approaches for a better understanding of teacher behaviour.

Meera (1988) studied the relationship between teacher behaviour and teacher attitude among teacher trainees as predictors of teacher effectiveness. The study finally concluded that teacher behaviours such as teacher talk, teacher clarity, positively correlated with teacher aptitude. It was

found that teaching aptitude was highly correlated with effective science teaching and learning and low teaching aptitude on the other hand resulted in ineffective science teaching. These differences were not observed in other subjects such as the languages.

Gupta (1988) investigated the correlates of effective and ineffectiveness in teacher's teaching. He found job satisfaction and financial support to be significantly influencing effective teaching. Kulsun (1998) attempted to relate school climate with job satisfaction. The study of Jyothi and Reddy (1998) requires a special mention as a study of job satisfaction among teachers working in special schools.

Bruhn (1989) carried out an investigation relating job stress, job satisfaction and professional growth with a sample encompassing all major professions and found that job satisfaction is a necessity for controlling job stress and enhancing career growth. Oddo (1992) in his study on the background factors and moderators of burnout found job satisfaction to be an effective moderator to the presence or absence of burnout among teachers of special education. Carlson (1992) in a similar study also found corroborative evidences with Oddo and found job satisfaction to be significantly contributing to experiencing or not experiencing among 490 teachers of special education.

Sunja (1990) studied teacher stress and burnout as related to teacher's opinion toward teaching as a profession. The variable, teacher's grade level assignment, did not have a significant effect on the attitude of teachers regarding the emotional exhaustion aspect of job related stress. The teachers' years of experience produced a significant effect on their attitudes toward job related stress.

Shah and Beena (1991) made a study on the determinants of teacher effectiveness. The main objective was to predict the effect of aptitude and intelligence on teaching effectiveness, among the secondary school teachers. For this 2,000 secondary level teachers were selected by the multistage random sampling. Only 1907 teachers are filled with the efficiency. Tools were teacher efficiency scale of Chauhan and Jain, the TATB of Singh and Sharma, the group test intelligence of Tandon. The major findings of the study were: Teacher effectiveness was significantly affected by teaching aptitude and intelligence. The variables like locality, type of school, level of educational qualification, teaching experience also determined the teacher effectiveness to some extent.

Bidyadhar (1991) also studied on the student ratings on teacher performance and concluded it to be the best way of assessing teacher effectiveness. Buudhisagar and others (1991) attempted to study the influence of intelligence, attitude toward teaching and the treatment the teacher received in the school and found them to be explaining teacher effectiveness or ineffectiveness. Shah (1991) attempted to identify and predict teacher effectiveness through teacher aptitude, intelligence, values, self-concept, work motivation, job satisfaction, personality and attitude of school teachers in addition to perceived school climate. These independent variables were found to be relevantly contributing to teacher effectiveness.

Bhargava (1992), concerned with attributes of teachers' own role and expectation to be influencing their performance effectiveness. Similar to the earlier studies Mishra (1992) studied on teacher behaviour and teaching skills and its impact on pupils' performance. In a somewhat different study along these lines Narang (1992) investigated a contribution of perception of

accountability and professional culture toward teacher effectiveness. A study noteworthy in this context was that of Nautiya (1992) who studied the efficiency of teaching performance as related to teaching effectiveness, teacher values and teacher morale. It was found that efficiency was related to higher levels of skills especially with regard to female teachers and significant differences were found between the high and low performing teachers with reference to teaching skills. The significant differences found between genders were also present in value perceptions. Values were highly correlating with performance efficiency. The interesting finding reported in Nautiya study had been the similarities found among female teachers across the private and public schools.

Ramamohanbabu (1992) examined the relation between job satisfaction, teaching attitude, job involvement and perception of organizational climate toward teaching efficiency and found that there was a condition among the teachers' study indicating neither satisfaction nor dissatisfaction. Ramamohanbabu observed more gender difference in the aspects he had studied. However the variables of attitude, involvement and perceived organizational climate were showing high correlation with teaching effectiveness.

Saran (1992) attempted to explain teaching performance with certain select psychosocial variables such as needs, work values, work adjustment, leadership. The later half of the 20th century Indian researchers flooded the academics with multi various studies in all disciplines. In the field of education also there were plenty of researches found. The most popular variables were teacher competency and teacher empowerment. Researchers attempted to explain these two significant concepts using

teacher motivation, teacher job satisfaction and organizational culture. Kamau (1992) has been the first to examine teacher burnout and found gender difference among teachers on burnout. The study also reported male teachers to be more capable of effective coping than female teachers. The urban-rural differences were also observed among teachers with regard to burnout. During the 80s and 90s in India very few researchers were concerning themselves with mental health of teachers in general. There was scanty literature on burnout among teachers as investigated by the Indian researchers. However many studies have been focusing on the factors of exhaustion, perception of work overload, anxiety and perception of poor mental health. Sharma and Gupta (1993) attempted to relate adjustment and burnout among secondary school teachers.

Gupta and Kaur (1993) made a factorial study of teaching competency. Rao (1995) described teacher effectiveness as a potential of creativity and positive interpersonal relationships between students, teachers and parents.

Sinha and Prabhat (1993) examined the relationship of job satisfaction with ego strength. Dixit (1993) and Chandraiah (1994) analyzed the contributions of gender, age, motivation on job satisfaction. Job satisfaction of teachers seems to be a popular area for researchers in the recent years. Naseema (1994) studied the relation between job satisfaction and teaching competence. Sudhira (1994) correlated job satisfaction and job stress among teachers and found that they had a significant inverse relationship.

Burnworth (1995) investigated the contributors of teacher dissatisfaction and related it to burnout. They found that these teachers who were special educators had a high degree of dissatisfaction and role ambiguity and role conflict stressors had a very important proportion of influence on becoming stressors affecting the teacher attitude toward their jobs. It is worthy of mention here as it dealt with stressors, moderators and burnout involving job dissatisfaction. According to this study, role stress and job dissatisfaction had been significantly influencing teacher collegiality. Yezzi and Lester (2000) examines job satisfaction among teachers. He found age and need for achievement as predictors of job satisfaction using a multiple regression-exclusive method.

Shamala (1997) attempted a conceptual model of teaching competency especially in learning languages. In the recent past, Indian researchers have shown interest in the area of burnout among teachers. Rama (1997) for example conducted a study on the impact of burnout on teacher efficiency and school effectiveness. Aggarwal (1997) found some significant correlates such as emotional exhaustion, depersonalization and personal accomplishment levels to be correlates of burnout among teachers.

Raja and Thyagarajan (1998) attempted to explain teacher effectiveness as a resultant of perceived organizational school on teacher motivation, teacher attitude and teacher competence have been repeatedly analyzed in finding answers to teacher effectiveness. Puravi (1998) tried to establish a relationship between organizational climate and teacher burnout. Kudva (2000) found a significant relation between five professional aspects and burnout. Some studies have also used teacher attitude to be important in effectiveness teaching (Balachandran, 2000).

Jabnoun and others (2001) presented a study which identified the factors affecting job satisfaction among teachers at selected secondary schools in Malaysia. Evaluation of teacher satisfaction with intrinsic and extrinsic components of the job found demographic variables to be significant.

Rasku and Kinnunen (2003) compared the work situation of Finnish upper secondary school teachers to that of average European teachers and to examine to what extent various job conditions and coping strategies explain their well-being. Job demands and control had only main effects on well-being: high demands explained low job satisfaction and burnout and high control explained high job satisfaction and high personal accomplishment. Van Dick (2004) found in a study that organizational identification leading to job satisfaction, in turn predicts turnover intentions.

Cetin (2006) carried a research to find out if there is a significant difference between job satisfaction, occupational and organizational commitment of 132 academics related to (i) their gender, marital status, age, experience and title variances (ii) there is a relationship between the academics' job satisfaction, occupational and organizational commitment.

7.2 Studies related to Attitude toward Teaching and Teaching Performance of Student-teachers

Attitudes are formed by direct experience as well as by implicit learning and may reflect personality (Zimbardo and Lieppe, 1991). Attitudes are typically conceptualized as having three related components: cognitive (i.e., the idea or assumptions upon which the attitude is based), affective (i.e., feelings about the issue), and behavioral (i.e., a predisposition toward

an action that corresponds with the assumption or belief) (Wood, 2000). Attitudes are functional enough as much as they simplify complex subjects, express fundamental values and beliefs, and mediate or guide behaviour (Brock and Shavitt, 1994).

Diwar (1992) conducted a study of the predictors of academic achievement of student-teachers in terms of aptitude, attitude, participation and human values. He compared the academic achievement, both theory and practical with attitude of teachers. A sample of 400 student-teachers was selected randomly from colleges of education under the judiciary of University of Rohtak. A survey was made to collect data and on analyses the data revealed (i) attitude of student-teachers had significant high positive relationship with the academic achievement in total as well as in theory and practical (ii) female student-teachers have been found significantly higher in comparison to male student-teacher with respect to all the eleven variables, namely, academic achievement in total, theory and practical, aptitude, co-operation, dedication, nationalism scientific outlook, tolerance and entry level. Female student, teachers of rural background have been found significantly better as compared to their male counter parts in ten variables. academic achievement in total of student-teachers has been predicted successfully on the basic of their attitude, entry level, aptitude and co-operation.

Dave (1993) studied the importance of area, sex, experience, effectiveness, responsibility, caste, grade and their iterations on teacher s professional attitude, and also studied the impact of sex, teacher s attitude, effectiveness, responsibility and their interactions on the scores of pupils achievement. The sample consisted of 710 teachers teaching in grades V,

VI and VII drawn from two districts, Mehsana and Banaskantha of Gujarat State. Data was collected by using Teacher Effectiveness Scale (Mutha and Kumar), Teacher Attitude Scale (Ahlumalia) and Student Achievement Questionnaire (Guskey) The data was analysed and the major findings of the study were, (i) professional attitude of teachers in urban areas was significantly higher than teachers in rural areas (ii) sex and experience ad no significant influence on the professional attitude of the teachers (iii) area, teacher effectiveness and sex, interacted with one another in producing teachers' attitude scores (iv) responsibility was a significant factor influencing teachers' professional attitude.

Mahajan (1993) developed a Teacher Attitude Scale for measuring attitude toward teaching profession and its application at B.Ed. level. The study was ex-post facto research and the sample comprised of 180 student-teachers from various colleges of education in Jalgaon. The findings of the study were (i) significant difference was found in the attitude scores of the student-teachers in different categories of colleges of education, Jalgaon. (ii) significant difference was not found between the mean scores of attitude toward teaching profession between male and female student-teachers.

Mehta (1995) constructed an attitude scale to compare the attitude of teachers belonging to different sex, their location and exposure to varied modes of imparting education. This study was multi directional in nature. ON analyses the findings revealed (i) teachers have positive attitude toward distance education (ii) there is a significant difference between the mean scores of male and female teachers on the dimension of evaluation. Male teachers were found to have a significantly better in their attitude toward evaluation than that of their counter parts (iii) sex had no influence on the

attitude of teachers toward distance education (iv) attitude of secondary schools teachers was comparatively higher than that teachers of senior higher secondary schools.

El-humaisat, Hamad (1996) investigated the effects of specific courses offered at the college of education of Sultan Qaboos university (Oman) on student–teachers' attitude toward instruction media in practice teaching. Results showed that female student–teachers have more positive attitude than male student-teachers.

Awanbor, David (1996) undertook a study of Nigerian teacher trainees examined self–concept and attitude toward teaching. Results established a significant relationship between self–concept and attitudes toward teaching. Most respondents scored high on the self-concept scale but did not show a positive attitude toward teaching due to poor financial benefits and low professional esteem.

Mary Lily Pushpam (1997) undertook a study on attitude toward teaching profession and job satisfaction of woman teachers in Coimbatore. The investigator adopted the survey method that was found suitable to gather the essential and relevant data. 725 women teachers from government-aided and corporation/ panchayat, private un-aided schools were selected as a sample. The tools used for the study were, Attitude toward Teaching Profession Scale constructed and standardized by V.V. Katti and C.S. Bannar; Job Satisfaction Scale was developed by the investigator. The data was analyzed with the help of correlation technique. The findings of the study were (i) women teachers have a positive attitude teaching profession (ii) women teachers working in matriculation schools and anglo indian schools have better attitude toward teaching profession

than teachers working in other types of schools. (iii) women teachers working in aided schools and private unaided schools have better attitude toward teaching profession than teachers working in other types of management (iv) women teachers with different years of experience do not vary significantly in their job satisfaction.

Patanvas (1998) made a survey to investigate the attitude of student-teachers toward the teaching profession and globalization with reference to certain variables. By means of simple random sampling a sample of 1,200 student-teachers of Thailand was selected. Tools used for data collection were; the respondent's Personal Information and a scale to measure the attitude of student-teachers toward teaching profession and globalization, which was constructed and standardized by the investigator. On analysis the findings of study were (i) attitude of student-teachers toward teaching profession was medium in level (ii) sex of student-teachers was the factor affecting the profession on the whole and different components (iii) there is a positive relationship between attitude of students-teachers toward teaching profession and attitude of student-teachers toward globalization.

Baland (1999) investigated the study habits/ reading interest/ attitude toward teaching and their bearing upon the achievement of pre-service teachers. The sample comprised of 450 students from different colleges. The findings of the study revealed (i) no significant difference in the attitude toward teaching of male and female pre-service teachers (ii) attitude of rural male teachers was found to be better than the attitude forwards teaching of the rural female teachers (iii) no significant difference in attitude toward teaching of urban male and urban female pre-service teachers (iv) a moderate positive correlation between attitude toward teaching and achievement of pre-service teachers.

Singh (1999) undertook a study of senior secondary schools of Jodhpur division to analyze the organization health and teacher's attitude toward teaching profession and adjustment. Survey method was used to collect the relevant data from a sample of 300 teachers selected randomly from 61 district of Jodhpur division. The tools used for data collection were, Organizational Health by D.K. Sharma, Teachers Attitude Index by S.P. Ahluwalia and Teachers' Adjustment Index by S.K. Mangal. The obtained data was analysed and the results revealed (i) attitude of senior secondary schools teachers of Jodhpur division toward teaching profession was high. (2) no difference between the attitude of senior secondary male and female school teachers of Jodhpur division toward teaching profession (iii) low correlation among teaching profession of senior secondary school of Jodhpur division.

Gupta (2000) studied the creativity and non-creativity of 600 secondary school student-teachers of Madhya Pradesh in relation to values/adjustment and attitude toward teaching. The sample was selected by using stratified random and multi-stage sampling. On analyzes of the data collected the findings were as follows:

- creative and non-creative groups differ significantly with respect to attitude toward teaching
- male and female student-teachers differ significantly with respect to attitude toward teaching in favour of males.

Tontrakoon (2000) investigated the attitude toward work and need for achievement of secondary school teachers in relation to school effectiveness. The study was descriptive survey research with a sample

consisting of 960 teachers from 96 schools of Thailand. Multi stratified random sampling method was adopted. The analyses showed that (i) the attitude toward work of secondary school teachers belonging to male and female groups was high (ii) the attitude toward work of secondary school teachers belonging to different groups of age was in high and medium levels (iii) the attitude toward work of secondary school teachers belonging to different and groups experience of work was in high and medium levels (iv) the attitude toward work of secondary school teachers belonging to different groups of levels of education i.e. higher than bachelor, and lower than bachelor degree were 9.56, 3.50 and 3.22 respectively. (6) The attitude toward work of secondary school teachers belonging to different groups of types of schools i.e. Government and private schools were 3.58 and 3.57 respectively.

Kaur (2001) undertook a comparative study of job satisfaction, professional and educational interest, creativity/ attitude toward teaching of teacher educators at different levels of teacher education. The survey included a randomly sample of 20 teachers educators of NTT, 90 teachers educators of ETT and 105 teacher educators of B.Ed. from teacher education institutions of Punjab State. The findings of study revealed that 95% of NTT, 81% of ETT and 75% of B.Ed. teacher educators have favourable attitude toward teaching and there was no significant difference in attitude toward teaching between the three groups of teacher educators.

Pal (2001) undertook a comparative study of attitude of school and college teachers toward creative learning and teaching in relation to mental health. The sample selected through multi stage random sampling technique comprised 384 teachers from 32 schools and 32 colleges from four districts

of Punjab. The findings of this study were (i) college teachers have significantly higher attitude toward creative learning and teaching as compared to school teachers (ii) male teachers do not differ from female teachers with regard to their attitude toward creative learning and teaching (iii) school male teachers have significantly higher attitude toward creative learning and teaching than high school female teachers (iv) there is no significant difference between male and female teachers in colleges and schools with regard to their attitude toward creative learning and teaching (v) college male teachers have significantly higher attitude toward creative learning and teaching than school female teachers.

Vishwanathappa (2005) conducted a study to investigate the influence of attitude toward teaching and admission test marks on teaching competence of student-teachers at secondary level in Andhra Pradesh. The main objective of the study was to find out the influence of attitude toward teaching and admission test rank on teaching competence of student-teachers. The study was limited to two colleges of education and student-teachers were drawn randomly from those two colleges of education affiliated to Sri Krishnadevarayan University, Anantpur. Tools employed were (i) Attitude toward Teaching Profession developed by B.N. Panda and S.C. Panda (1998) (ii) Teaching Competence Scale developed by Vishwanathappa and Venkataiah (1992). The major assumptions of the study were as follows:

- Attitude of student-teachers toward teaching as a predictor variable predicts their teaching competence in lesson planning, presentation, with various degrees of contribution and is significant.

- Admission Test rank, age, father's occupation and education of student-teachers as a predictor variables do not predict their teaching competence in lesson planning, presentation closure of lesson plan and evaluation.

The results of the study revealed the positive and significant influence of attitude toward teaching on the teaching competence of student-teachers.

Teachers' attitudes are extremely important because of the relationship between attitude and action. Teacher attitudes are often translated into specific classroom and instructional practices which in turn affect student behavioural and learning outcomes (Cook, 2002). Their exist scores of studies reporting positive association between low morale, lack of job satisfaction, inadequate remuneration, and lack of motivation and teachers' lack of confidence in the teaching profession. Even university administrators believe that those who are not good enough for specialized studies such as medicine, engineering, and administration should be herded into the field. This situation seems to lend undue credence that "He who can does, he who cannot teaches" (Afe, 2002). There are many reasons why teachers might not hold positive attitudes toward teaching. Classroom press requires immediate reactions to students, principals, and parents; obligates teachers to do many activities simultaneously; and requires teachers to cope with unpredictable environments (Rimm-Kaufman and Sawyer, 2004). These attitudes toward teaching appear to be transmitted to students. Cheng (1996) indicates that teachers reporting greater professionalism are more likely to have students who report positive attitudes toward peers, schools, and learning. Thus, teachers' attitudes toward teaching have important

implications for understanding the classroom environment and thereby effective teaching. Hence the inclusion of the variable attitude toward teaching in the present study.

7.3 Studies related to Aptitude toward Teaching and Teaching Performance of Student-teachers

Reddy and Bhoom (1991) investigated the teaching aptitudes and attitudes of secondary school teacher trainees of Andhra Pradesh. The study tried to assess the teaching aptitude and attitude of teachers in relation to sex, age and category. In the study 332 student-teachers of the Kakatiya University were taken as sample. The tools included are Thematic Apperception Test (TAT), and Teaching Aptitude Inventory. Mean, median, skewness, chi-square test were computed to analyse the data. The study revealed that the female respondents performed relatively better in the teaching aptitude test. Age and category had no influence on the teaching aptitude.

Jain and Smeeta (1992) made a study on creativity in relation to teaching aptitude, skills and personality variables of student-teachers. This study attempted to make a detailed inquiry about teachers, creativity and its relation to teaching aptitude, teaching skills, and personality variables that they may reveal useful and new facts which may have direct influence on the teachability and creativity. To find out the difference between high creative and low creative student-teachers, in context of their teaching aptitude, 280 pupils were selected as sample. The tools were Torrance Test of Creative Thinking and Teaching Aptitude test by Prakash and Srivasthava. The major findings of the study revealed a positive correlation between the classroom creativity, teaching aptitude and skills.

8. HYPOTHESES OF THE PRESENT STUDY

Based on the objectives and review of literature, the following hypotheses have been formulated:

- (i) There is no significant difference in attitude toward teaching among student-teachers studying in self-financing, government-aided and government colleges of education;
- (ii) There is no significant difference in aptitude toward teaching among student-teachers studying in self-financing, government-aided and government colleges of education;
- (iii) There is no significant difference in performance among student-teachers studying in self-financing, government-aided and government colleges of education;
- (iv) There is no significant difference in attitude toward teaching among male and female student-teachers studying in self-financing colleges of education;
- (v) There is no significant difference in aptitude toward teaching among male and female student-teachers studying in self-financing colleges of education;
- (vi) There is no significant difference in performance among male and female student-teachers studying in self-financing colleges of education;

- (vii) There is no significant difference in attitude toward teaching among the male and female student-teachers studying in government-aided colleges of education;
- (viii) There is no significant difference in aptitude toward teaching among male and female student-teachers studying in government-aided colleges of education;
- (ix) There is no significant difference in performance among male and female student-teachers studying in government-aided colleges of education;
- (x) There is no significant difference in attitude toward teaching among male and female student-teachers studying in government colleges of education;
- (xi) There is no significant difference in aptitude among male and female student-teachers studying in government colleges of education;
- (xii) There is no significant difference in performance among male and female student-teachers studying in government colleges of education and
- (xiii) There is significant relationship between the select variables among student-teachers in self-financing, government-aided and government colleges of education.

9. METHODOLOGY OF THE PRESENT STUDY

Methodology is an important aspect of any kind of research work. Each research study has its own objectives. The procedure adopted by the researcher for the investigation is known as methodology.

9.1 Method of Investigation

Survey method is employed in the present research to collect, analyze and interpret the data. Data collected from the select sample was scored and subjected to statistical processing.

9.2 Variables

The variables chosen in the present study are as follows:

➤ **Independent Variables**

- (i) Attitude toward Teaching
- (ii) Aptitude toward Teaching

➤ **Dependent Variable**

- (i) Teaching Performance of Student-teachers

9.3 Research Design

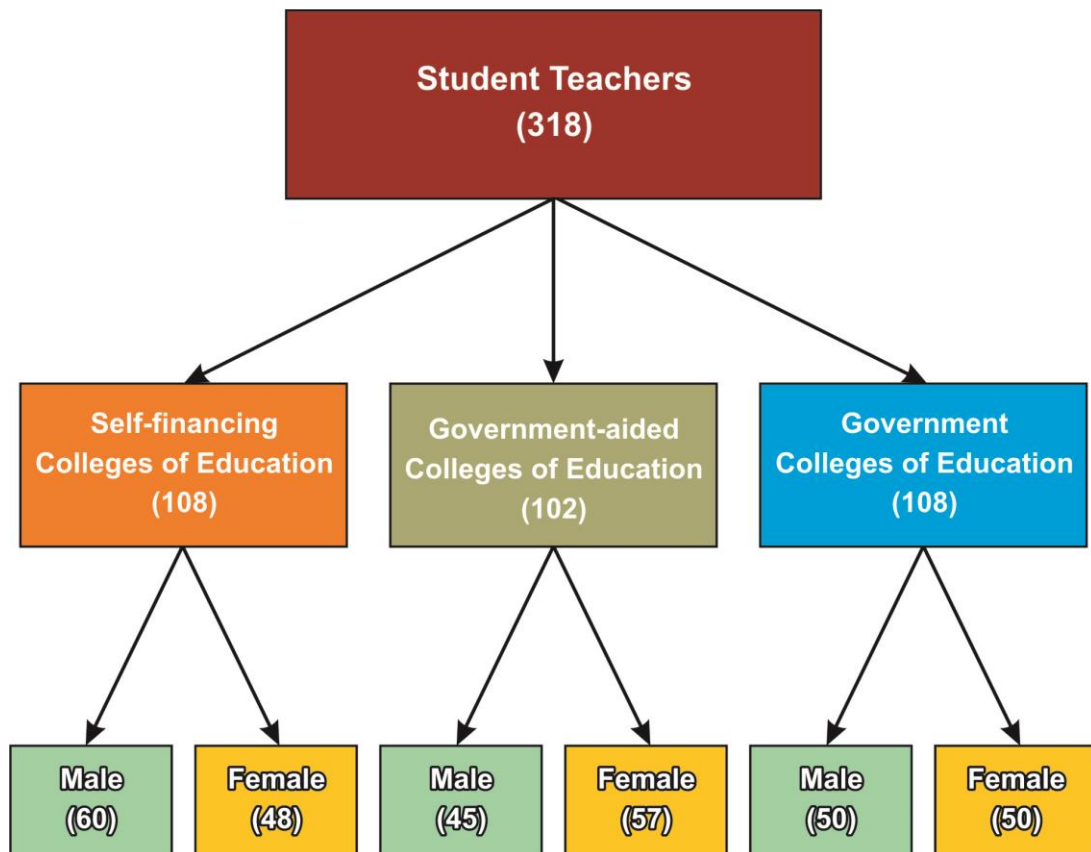
The present study deals with the analyses of the attitude toward teaching, aptitude toward teaching and performance of student-teachers in different categories of colleges of education.

Therefore a factorial design was chosen to be most appropriate to verify hypotheses. A factorial design is one in which more than two independent variables are juxtaposed in order to study the effect on the independent variable (Kerlinger, 1983).

Thus for the present study a 3 x 2 research design has been selected.

Figure – 2

3 x 2 FACTORIAL DESIGN



9.4 Sample Characteristics

The target population for the present study will be the students in different categories of colleges of education, namely self-financing, government-aided and government colleges. From the target population a sample of 318 (108 self-financing, 102 government-aided and 108 government) student-teachers were chosen from colleges of education.

Table - 1

Sample Distribution

Groups	Self-financing	Government-aided	Government	Total
Male Student-teachers	60	45	58	163
Female Student-teachers	48	57	50	155
Total	108	102	108	318

Figure - 3

College-Wise Distribution of Sample

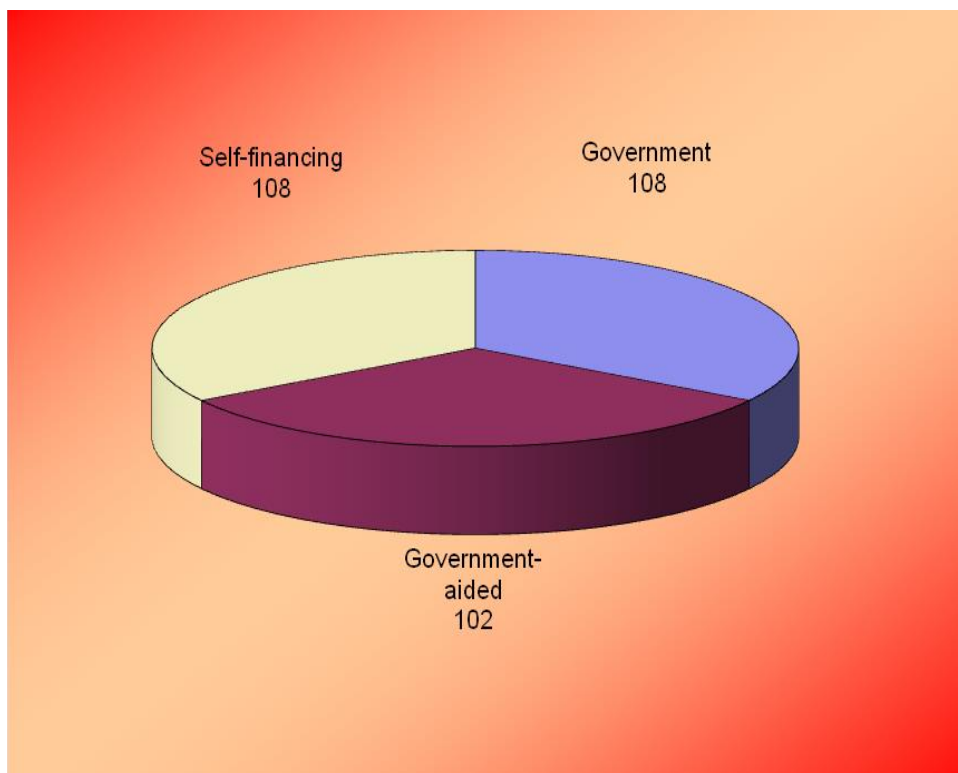
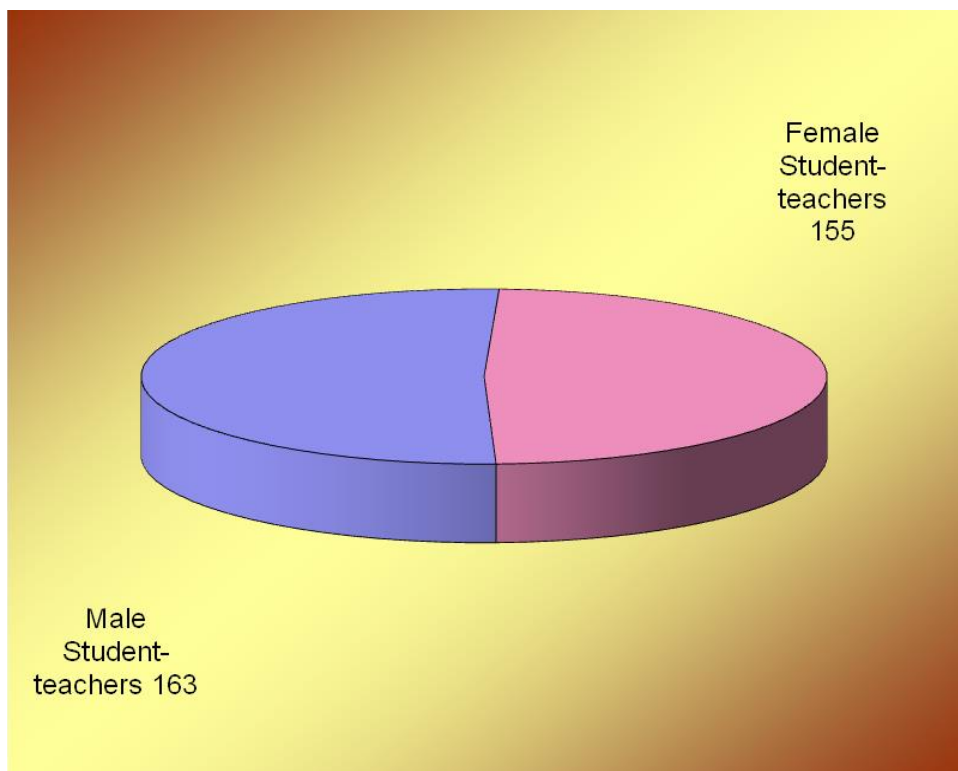


Figure - 4

Sex – Wise Distribution of Sample



9.5 Research Tools

The research tools used in the present study to investigate the motives to teach, perceptions about teaching, concerns about teaching and teaching performance among student-teachers of Physical Science are as follows:

- (i) Tool-1: Effective Performance Appraisal (Maddux, 2004)
- (ii) Tool-2: Teacher Attitude Inventory (Ahluwalia, 1978)
- (iii) Tool-3: Teaching Aptitude Test Battery
(Singh and Sharma, 1971)

(i) Tool-1: Effective Performance Appraisals (Maddux, 2004)

The appraisal form consists of 5 primary criteria of teaching performance as described by Vedanayagam, (1989). These criteria are as follows:

1. **Teaching skills-** planned teaching, use of audio-visual aids, periodic feedback, effective demonstrations, correction of wrong conceptions and coaching and continuous monitoring.
2. **Interpersonal Skills-** making classes interactive, establishing good interpersonal network between students, teachers and parents, committed to student performance, providing freedom of expression to students, effective team building, counseling for improvement and openness to student observation.

3. **Communication-** language fluency, using appropriate terms in disseminating knowledge, well modulated voice, appropriate body language, appropriate emotional tone while talking and simplicity in communication in avoiding flowery, bombastic language.
4. **Classroom management-** effective classroom management is considered as one of the primary tasks of a teacher. An effective classroom management is ensuring a classroom, a secure, safe environment where the teacher is free to teach and the students are free to learn. The task involves four basic tenets (i) the concept of mutual respect (ii) the concept of doing your best (iii) the concept of planning and (iv) then communicating and consequence without belittlement. The strategies the teacher is expected to follow or proximity control, help, resilience, stimulus change, setting limits, using when-then contingencies, the teachers manifesting these characteristics on the basis of the strategies is assessed in classroom management.
5. **Knowledge-** the teacher should be a master of her subject. The expert power is necessary to exercise and authenticate information. In an interactive classroom this knowledge power is absolutely essential for a teacher to clarify the doubts of the students. It is necessary for a teacher to know more than what is prescribed in the syllabus and feel confident about whatever message she is disseminating.

On the basis of these criteria the following semantic differential scale was used by the heads of the institutions or supervisors to assess the sample of student-teachers selected for the study.

TEACHING SKILLS

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

INTERPERSONAL

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

COMMUNICATION

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

CLASSROOM MANAGEMENT

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

KNOWLEDGE

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

Administration and Scoring

Administration of the appraisal was simple and appropriate as it included evaluation of student-teachers on 5 most important criteria. It was a quick assessment as the study involved a huge number of teachers. The simplicity of the scale enabled the investigator to have a quick measure of student-teacher performance. The heads of institutions/ supervisors were co-operative in the information as the appraisal was simple, precise and informative. The scale was distributed to the heads of the institutions/ supervisors with the following instruction for self administration. ***“You will find a precise scale of performance appraisal of your teachers at the secondary and higher secondary levels. Kindly go through them carefully and indicate where each teacher will fit in the five point rating scale on each of the job related characteristics. It will take you five minutes to complete the scale. Thanks for your cooperation”.***

The appraisal filled by the heads of institutions/ supervisors on the prescribed criteria and corresponding tasks. The appraisal was then scored and used for analyses. Scoring system was also simple involving a five-point rating scale on the 5 criteria. The scoring ranged from 5 to 25. A low score describes a student-teacher who is inefficient in performance and a high score describes a teacher who is outstanding, meaning highly efficient in performance. The data thus collected from the heads of institutions/ supervisors were scored and subjected to statistical analysis.

The scoring scheme

1	–	Unsatisfactory
2	–	Satisfactory
3	–	Average
4	–	Above average
5	–	Outstanding

(ii) Tool–2: Teacher Attitude Inventory (Ahluwalia, 1978)

For collecting data to assess the attitude of student-teachers in various colleges of education, Teacher Attitude Inventory Ahluwalia (1978) was found very appropriate and hence it was selected and administered.

Administration and Scoring

After taking permission from the Principal/ Head mistress of the school, the teachers were contacted. They were oriented about the objectives of the stud and the following instructions were given.

“Listed below are a series of statements that represent your attitude toward teaching. Read the following statements one by one

carefully. Each statement can be responded in 5 alternatives viz., Strongly Agree, Agree Neither Agree nor Disagree, Strongly Disagree. According to your view, think and decide which alternative suits you well. Opening upon your decision, put a tick (✓) in front of each statement in the columns provided. There is no time limit, however, do not spend too much time pondering over a single item. I expect an honest response from you as it goes a long way in building research knowledge. Thank you”.

Scoring was done as per the instructions given in the manual.

Favourable items serial number are 1, 8, 20, 33, 41, 66, 85, 2, 9, 14, 17, 42, 47, 53, 67, 3, 11, 16, 27, 37, 39, 49, 62, 64, 80, 15, 28, 36, 43, 50, 55, 71, 87, 5, 44, 81, 82, 89, 6, 23, 40, 52, and 88. Total items are 43.

The scoring of the unfavourable items is done with the corresponding values.

Strongly Disagree	-	5
Disagree	-	4
Neither Disagree nor Agree-		3
Agree	-	2
Strongly Agree	-	1

Unfavourable items serial numbers are 13, 34, 46, 64, 72, 79, 86, 39, 38, 59, 61, 65, 73, 84, 25, 54, 75, 83, 90, 4, 7, 10, 32, 63, 74, 76, 18, 22, 29, 31, 37, 51, 56, 58, 70, 77, 12, 19, 24, 26, 30, 45, 57, 68, 69, and 78. Total items are 47.

The scoring of the favourable items is done with the corresponding values.

Strongly Disagree	-	1
Disagree	-	2
Neither Disagree nor Agree-		3
Agree	-	4
Strongly Agree	-	5

(iii) Tool-3: Teaching Aptitude Test Battery (TATB)

The Teaching Aptitude Test Battery was developed and standardized by Singh and Sharma (1971). The TATB is intended to serve as a tool for selecting students for admission to elementary teacher training institutions and also teachers for teaching in elementary schools. Therefore, this test battery was thought to be most appropriate for measuring the teaching aptitude of the student-teachers in colleges of education. The five areas of teaching aptitude test battery are (i) mental ability (ii) attitude toward children (iii) adaptability (iv) professional information (v) interest in profession. The time limit of the test was one hour.

Administration and Scoring

The test was a paper pencil test and hence administered as a group test with the following instructions.

“Listed below are a series of statements that represent your aptitude toward teaching. Read the questions one by one carefully and choose the correct answer. There is no time limit, however, do not spend too much time pondering over a single item. I expect an honest

response from you as it goes a long way in building research knowledge. Thank you”.

There was no time limit and the test was scored according to the scoring instructions given in the manual: All the items in the subtest – I, III, IV, V, were to be marked right or wrong. For each right response a score of 1 was given and for each wrong response a score of 0 was given. Items in subtest II were scored on a five point scale. The best answer was given a credit of 5, while the worst answer was given a credit of 1. The final score of a student-teacher on this subtest was obtained by dividing the obtained score by five. The score on the whole test of a testee was obtained by adding the scores on all the five subtests. The maximum score one can obtain on this test was 200.

9.6 Reliability and Validity

A pilot study enabled the investigator to appraise the suitability of the research tools chosen for the present study. It helped in observing difficulties while administering the tool, which was corrected before organizing the main study. Statistical analysis of data obtained from the pilot study facilitated preparedness about the trend that would result from the main study. The pilot study was done with 50 subjects randomly chosen from the schools. Reliability and validity of the selected questionnaires, namely, Teacher Attitude Inventory (Ahluwalia, 1978) and Teaching Aptitude Test Battery (Singh and Sharma, 1971) were established.

(i) Reliability

The reliability of the tools was established by the investigators by split-half method and is found to be 0.79 for Teacher Attitude Inventory

(Ahluwalia, 1978) and 0.96 for Teaching Aptitude Test Battery (Singh and Sharma, 1971) which were both found to be significant.

(ii) Validity

Since the tools are standardized tools for teacher trainees in India, the validity of the tool Teacher Attitude Inventory (Ahluwalia, 1978) was determined through stimulus group technique and for Teaching Aptitude Test Battery (Singh and Sharma, 1971) as given in the manual (0.421) the validity has been accepted for the present study.

10. ANALYSIS, INTERPRETATION AND DISCUSSION

Research becomes meaningful in the process of data being collected and interpreted. Proper analysis and interpretation of data facilitates the researcher in drawing out meaningful inferences from the results. The main purpose of the study is to analyze the attitude and aptitude toward teaching among student-teachers. The study consisted of multiple variables relevant in explaining the teaching performance among student-teachers.

10.1 Analysis of Variance with regard to the Select Variables among Student-Teachers in different Categories of Colleges of Education

The analysis of variance commonly referred to by the acronym ANOVA, at its lowest level is essentially an extension of the logic of t-tests to those situations where comparison of means of three or more samples, called independent groups concurrently becomes essential.

The following set of tables (Table-2 to Table-3c) exhibits the analysis of variance among the student-teachers in different categories of colleges of education, with regard to the select variables.

Table – 2

Analysis of Variance of Attitude toward Teaching among Student-teachers in Different Categories of Colleges of Education

Source of variation	df	Sum of squares	Mean of sum of square	F-ratio
Between groups	2	2247904.42	1123952.21	1590.57
Within groups	315	22590.47	706.64	
Total	317	2470494.88		

** Significant at 0.01 level

In Table-2, for the analysis of variance different categories of colleges of education are treated as different groups. The F-ratio is 1590.57, which is significant at 0.01 level. Thus, there is a significant different difference in attitude toward teaching among the student-teachers in different categories of colleges of education.

In order to establish the actual degree of difference between the student-teachers belonging to different categories of colleges of education, namely, self-financing, government-aided and government colleges of education, critical ratios were worked out and the actual difference between the mean scores were established. The tables presented below thus indicate the mean difference between the student-teachers in the different categories of colleges of education.

Table - 2a

Statistical Analysis of Means of Attitude toward Teaching among Student-teachers in Self-financing and Government-aided Colleges of Education

Variable	Sample size	Mean	SD	SEM	SED	CR
Self-financing	108	148.90	27.45	2.64	3.80	23.17**
Government-aided	102	236.88	27.57	2.73		

Significant at 0.01 level

In Table-2a, the mean and standard deviation values of attitude toward teaching are 148.90 and 27.45 respectively for student-teachers in self-financing and 236.88 and 27.57 respectively for student-teachers in government-aided colleges of education. The critical ratio value is 23.17, signification at 0.01 level.

Thus, the student-teachers in government-aided colleges of education are significantly better in their attitude toward teaching when compared to the student-teachers in self-financing colleges of education.

Table–2b

**Statistical Analysis of Means of Attitude toward Teaching among
Student-teachers in Self-financing and Government Colleges
of Education**

Variable	Sample size	Mean	SD	SEM	SED	CR
Self-financing	108	148.90	27.45	2.64	3.55	57.27**
Government	108	352.33	24.68	2.38		

** Significant at 0.01 level

In Table-2b, the mean and standard deviation values of attitude toward teaching are 148.90 and 27.45 respectively for student-teachers in self-financing and 352.33 and 24.68 respectively for student-teachers in government colleges of education. The critical ratio value is 57.27, significant at 0.01 level.

Thus, the student-teachers in government colleges of education are better in their attitude toward teaching when compared to the self-financing colleges of education.

Table-2c

Statistical Analysis of Means of Attitude toward Teaching among Student-teachers in Government-aided and Government Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Government-aided	102	236.88	27.57	2.73	3.61	32.01**
Government	108	352.33	24.68	2.38		

** Significant at 0.01 level

In Table-2c, the mean and standard deviation values of attitude toward teaching are 236.88 and 27.57 respectively for student-teachers in government-aided and 352.33 and 24.68 respectively for student-teachers in government colleges of education. The critical ratio value is 32.01, significant at 0.01 level.

Thus, the student-teachers of government colleges of education are better in their attitude toward teaching when compared to the student-teachers in government-aided colleges of education.

Figure – 5

Means of Attitude toward Teaching among Student-teachers in Different Categories of Colleges of Education

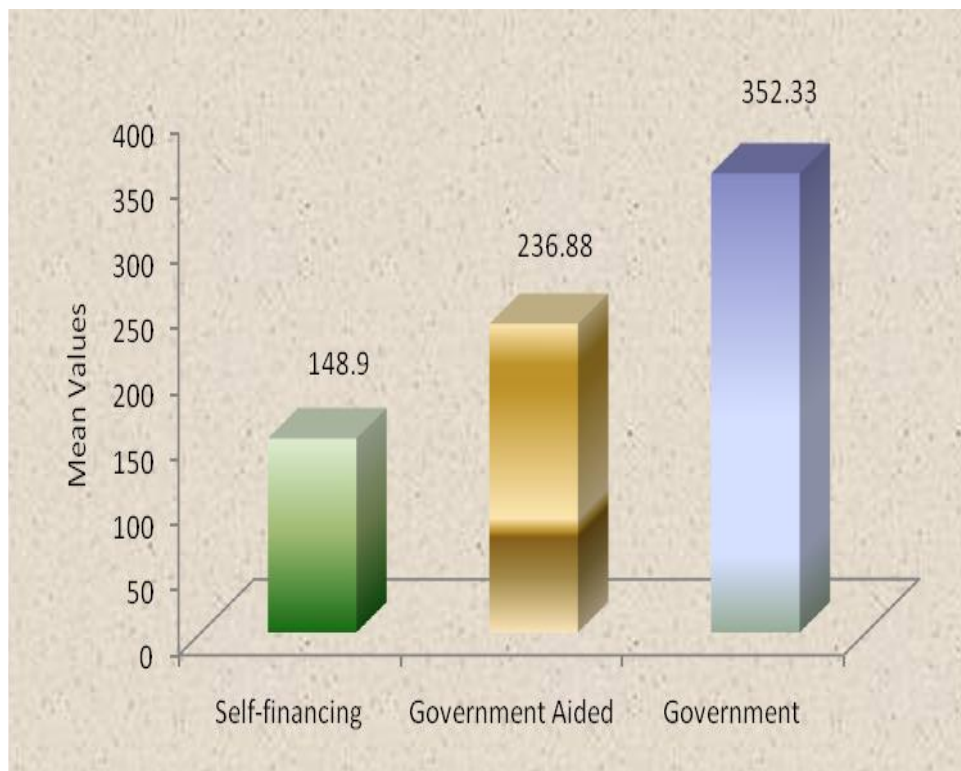


Table - 3

**Analysis of Variance of Aptitude toward Teaching among Student–
teachers in Different Categories of Colleges of Education**

Source of variation	df	Sum of squares	Mean of sum of square	F-ratio
Between groups	2	227041.74	113520.87	1258.72**
Within groups	315	28409.18	90.19	
Total	317	255450.92		

** Significant at 0.01 level

In Table-3, for the analysis of variance different categories of B.Ed. colleges are treated as different groups. The *F*-ratio is 1258.72, which is significant at 0.01 level. Thus, there is a significant difference in aptitude toward teaching among student-teachers in different categories of colleges of education.

In order to establish the actual degree of difference between the student-teachers belonging to different categories of colleges of education, namely, self-financing, government-aided and government colleges, critical ratios were worked out and the actual difference between the mean scores were established. The tables presented below thus indicate the mean difference between the student-teachers in the different categories of colleges of education.

Table - 3a

Statistical Analysis of Means of Aptitude toward Teaching among Student-teachers in Self-financing and Government-aided Colleges of Education

Variable	Sample size	Mean	SD	SEM	SED	CR
Self-financing	108	32.60	8.92	0.86	1.30	25.65**
Government-aided	102	65.95	9.91	0.98		

** Significant at 0.01 level

In Table-3a the mean and standard deviation values of aptitude toward teaching are 32.60 and 8.92 respectively for self-financing and 65.95 and 9.91 respectively for student-teachers in government-aided colleges of education. The critical ratio value is 25.65, significant at 0.01 level.

Thus, the student-teachers in government-aided colleges of education have significantly better aptitude toward teaching when compared to the student-teachers in self-financing colleges of education.

Table - 3b

Statistical Analysis of Means of Aptitude toward Teaching among Student-teachers in Self-financing and Government Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Self-financing	108	32.60	8.92	0.86	1.27	51.27**
Government	108	97.44	9.65	0.93		

** Significant at 0.01 level

In Table-2b, the mean and standard deviation values of aptitude toward teaching are 32.60 and 8.92 respectively for student-teachers in self-financing and 97.44 and 9.65 respectively for student-teachers in government colleges of education. The critical ratio value is 51.27, significant at 0.01 level.

Thus, the student-teachers in government colleges of education have a significantly better aptitude toward teaching when compared to the student-teachers in self-financing colleges of education.

Table - 3c

Statistical Analysis of Means of Aptitude toward Teaching among Student-teachers in Government-aided and Government Colleges of Education

Variable	Sample size	Mean	SD	SEM	SED	CR
Government-aided	102	65.95	9.91	0.99	1.35	23.32**
Government	108	97.44	9.65	0.93		

** Significant at 0.01 level

In Table-3c, the mean and standard deviation values of aptitude toward teaching are 65.95 and 9.91 respectively for student-teachers in government-aided and 97.44 and 9.65 respectively for student-teachers in government colleges of education. The critical ratio value is 23.32, significant at 0.01 level.

Thus, the student-teachers in government colleges of education have a significantly better aptitude toward teaching when compared student-teachers in government-aided colleges of education.

Figure – 6

Means of Aptitude toward Teaching among Student-teachers in Different Categories of Colleges of Education

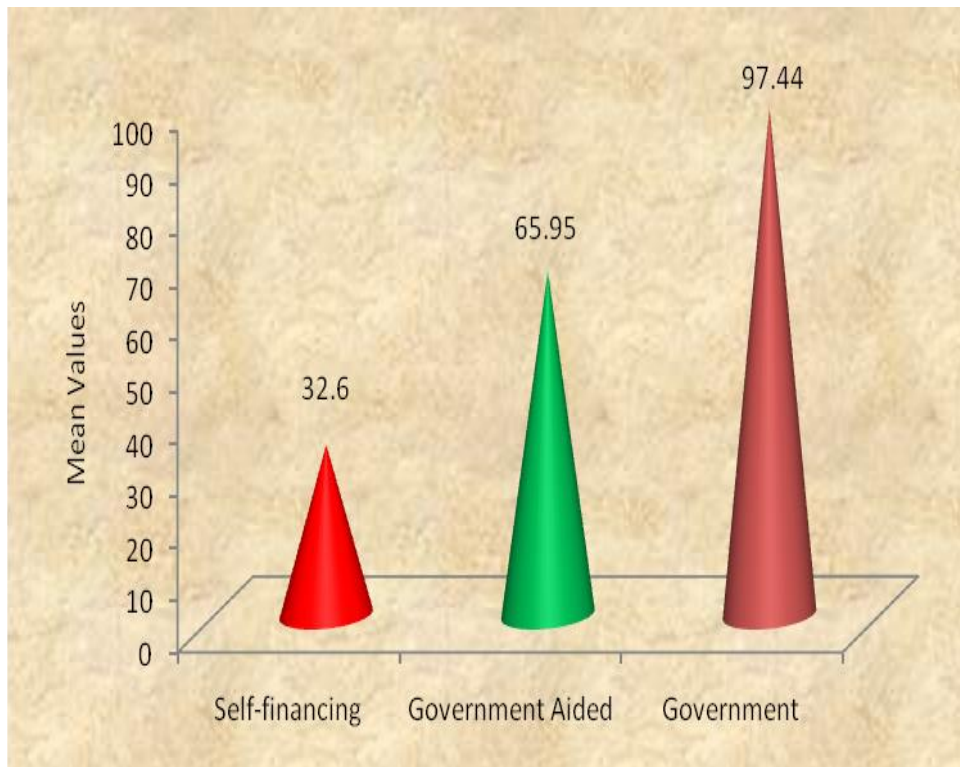


Table - 4

Analysis of Variance of Performance of Student–teachers in Different Categories of Colleges of Education

Source of Variation	<i>df</i>	Sum of Squares	Mean of sum of square	<i>F</i>-ratio
Between groups	2	5415.24	2707.62	737.68**
Within groups	315	1156.19	3.67	
Total	317	6571.42		

** Significant at 0.01 level

In Table-4, for the analysis of variance different categories of colleges of education are treated as different groups. The *F*-ratio is 737.68, which is significant at 0.01 level. Thus, there is a significant difference in performance of student-teachers in different categories of colleges of education.

In order to establish the actual degree of difference between the student-teachers belonging to different categories of colleges of education, namely, self-financing, government-aided and government colleges of education, critical ratios were worked out and the actual difference between the mean scores were established. The tables presented below thus indicate the mean difference between the student-teachers in the different categories of colleges of education.

Table - 4a

**Statistical Analysis of Means of Performance of Student-teachers in
Self-financing and Government-aided Colleges of Education**

Variable	Sample Size	Mean	SD	SEM	SED	CR
Self-financing	108	6.96	1.52	0.15	0.23	25.21**
Government-aided	102	12.67	1.75	0.17		

** Significant at 0.01 level

In Table-4a, the mean and standard deviation values of performance are 6.96 and 1.52 for self-financing and 12.67 and 1.75 for student-teachers in government-aided colleges of education. The critical value is 25.21, significant at 0.01 level.

Thus, the student-teachers in government-aided colleges of education are better in their performance when compared to the student-teachers in self-financing colleges of education.

Table - 4b

**Statistical Analysis of Means of Performance of Student-teachers in
Self-financing and Government Colleges of Education**

Variable	Sample Size	Mean	SD	SEM	SED	CR
Self-financing	108	6.96	1.52	0.15	0.27	36.90**
Government	108	16.94	2.36	0.23		

** Significant at 0.01 level

In Table-4b, the mean and standard deviation values of performance are 6.96 and 1.52 for student-teachers in self-financing and 16.94 and 2.36 respectively for student-teachers in government colleges of education. The critical ratio value is 36.90, significant at 0.01 level.

Thus, the student-teachers in government colleges of education are better in their performance when compared to the student-teachers in self-financing colleges of education.

Table - 4c

Statistical Analysis of Means of Performance of Student-teachers in Government-aided and Government Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Government-aided	102	12.67	1.75	0.17	0.29	14.83**
Government	108	16.94	2.36	0.23		

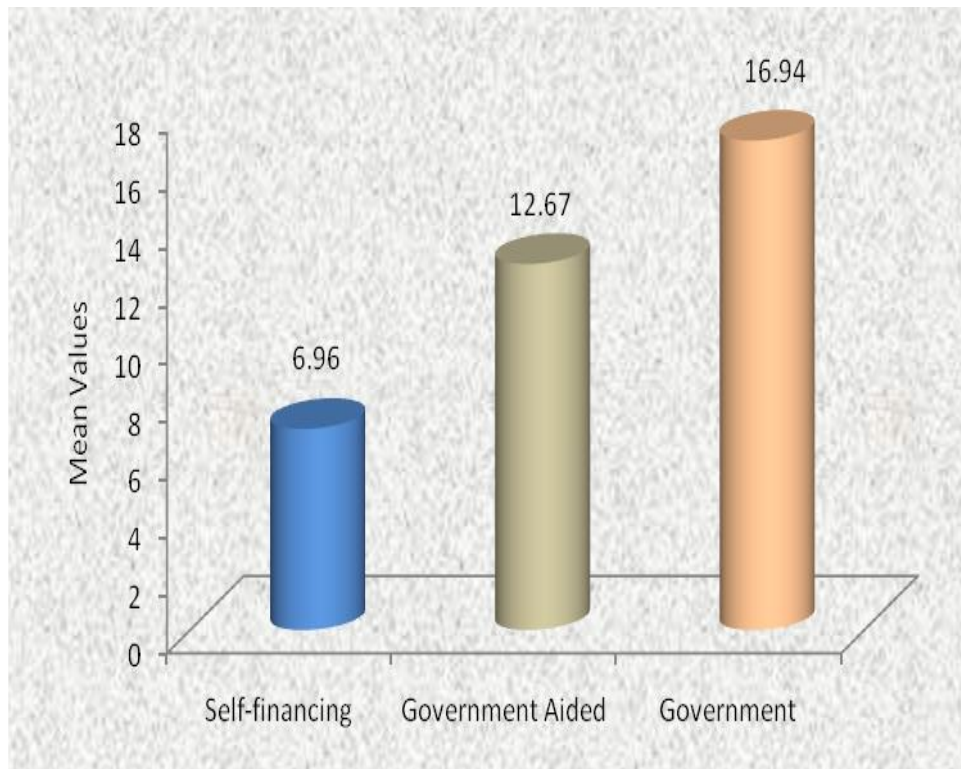
** Significant at 0.01 level

In Table-4c, the mean and standard deviation values of performance are 12.67 and 1.75 respectively for student-teachers in government-aided and 16.94 and 2.36 respectively for student-teachers in government colleges of education. The critical ratio value is 14.83, which is significant.

Thus, the student-teachers in government colleges of education are significantly better in their performance when compared to the student-teachers in government-aided colleges of education.

Figure – 7

Means of Performance of Student-teachers in Different Categories of Colleges of Education



10.2 Discussion on the Analysis of Variance with regard to the Select Variables among Student-Teachers in different Categories of Colleges of Education

It is a long established belief that psychological elements in the teacher play a central role in the teaching of subjects. In particular, many researchers have held the view that there is an important relationship between attitude and aptitude of a teacher, especially their attitudes towards subjects, and the effectiveness or quality of their teaching of subjects (Bishop and Nickson, 1983). The argument is that teacher attitude influence student attitudes (Aiken, 1970; Larson 1983), and those student attitudes have a powerful influence on learning (Evans, 1965; Khan and Weiss, 1973).

The problem of poor attitudes can be particularly acute in the case of primary or elementary school teachers (particularly those who are not subjects specialists). For teachers of younger students tend to have poorer attitudes than those teaching older or intermediate aged students. (Raines, 1971). The result is that teachers who can influence student attitudes and achievement in their formative stages may be those that have the poorest attitudes themselves (Kulm, 1980). Research has shown that the picture is more complex than this simple argument suggests, for two reasons. First of all, although many researchers have confirmed the existence of a relationship, the correlation between mathematical attitude and achievement is weak (Begle, 1979; Bell and others, 1983). Similarly is aptitude of teachers is another important factor that contributes to effective teaching. According to Snow (1991) aptitude should refer to any measurable personal characteristic, hypothesized and be needed as preparation for response to

treatment and successful goal achievement in the treatment studied (Snow, 1991).

In the present investigation it is seen that the student-teachers in government colleges of education are significantly better in their attitude toward teaching, aptitude toward teaching and in their performance when compared to the student-teachers in government-aided and self-financing colleges of education. The government and government-aided colleges of education are almost controlled by the norms of the government. The facilities available, appointment of teaching faculty members, non-teaching staff members, admission of students to the B.Ed. course, nominal fee structure, are all controlled by the government bodies and authorities. Due to these reasons that students who secure very high marks in their subjects and with better attitude and aptitude for teaching, prefer to get admitted in government and government-aided colleges. Thus, the cream of students usually gets admitted in government and government-aided colleges of education. As a result these bright student-teachers in government and government-aided colleges perform significantly better when compared to the student-teachers in self-financing colleges of education.

10.3 ANALYSIS OF VARIANCE WITH REGARD TO THE SELECT VARIABLES AMONG MALE AND FEMALE STUDENT-TEACHERS IN DIFFERENT CATEGORIES OF COLLEGES OF EDUCATION

Table - 5a

Statistical Analysis of Means of Attitude toward Teaching among Male and Female Student-teachers in Self-financing Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Male student-teachers	60	129.03	13.72	1.77	3.11	14.37**
Female student-teachers	48	173.73	18.60	2.69		

** Significant at 0.01 level.

In Table-5a, the mean and standard deviation values of attitude toward teaching are 129.03 and 13.72 respectively for male student-teachers and 173.73 and 18.60 respectively for female student-teachers in self-financing colleges of education. The critical ratio value is 14.37, significant at 0.01 level.

Thus, the female student-teachers are better in their attitude toward teaching when compared to the male student-teachers of self-financing colleges of education.

Table - 5b

Statistical Analysis of Means of Attitude toward Teaching among Male and Female Student-teachers in Government-aided Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Male student-teachers	45	228.73	14.82	2.21	4.01	2.74**.
Female student-teachers	57	243.32	33.21	4.40		

** Significant at 0.01 level.

In Table-5b, the mean and standard deviation values of attitude toward teaching are 228.73 and 14.82, respectively for male student-teachers and 243.32 and 33.21 respectively for female student-teachers in government-aided colleges of education. The critical ratio value is 2.47, which is significant at 0.01 level.

Thus, the female student-teachers are better in their attitude toward teaching when compared to the male student-teachers of government-aided colleges.

Table - 5c

**Statistical Analysis of Means of Attitude toward Teaching among
Male and Female Student-teachers in Government Colleges
of Education**

Variable	Sample Size	Mean	SD	SEM	SED	CR
Male student-teachers	58	334.06	15.01	1.97	2.86	13.80**
Female student-teachers	50	373.54	14.62	2.07		

** Significant at 0.01 level.

In Table-5c, the mean and standard deviation values of attitude toward teaching are 334.06 and 15.01 respectively for male student-teachers and 373.54 and 14.62 respectively for female student-teachers in government colleges of education. The critical ratio value is 13.80, which is significant at 0.01 level.

Thus, the female student-teachers are better in their attitude toward teaching when compared to the male student-teachers of government colleges.

Figure - 8

Means of Attitude toward Teaching among Male and Female Student-teachers in Self-financing, Government-aided and Government Colleges of Education

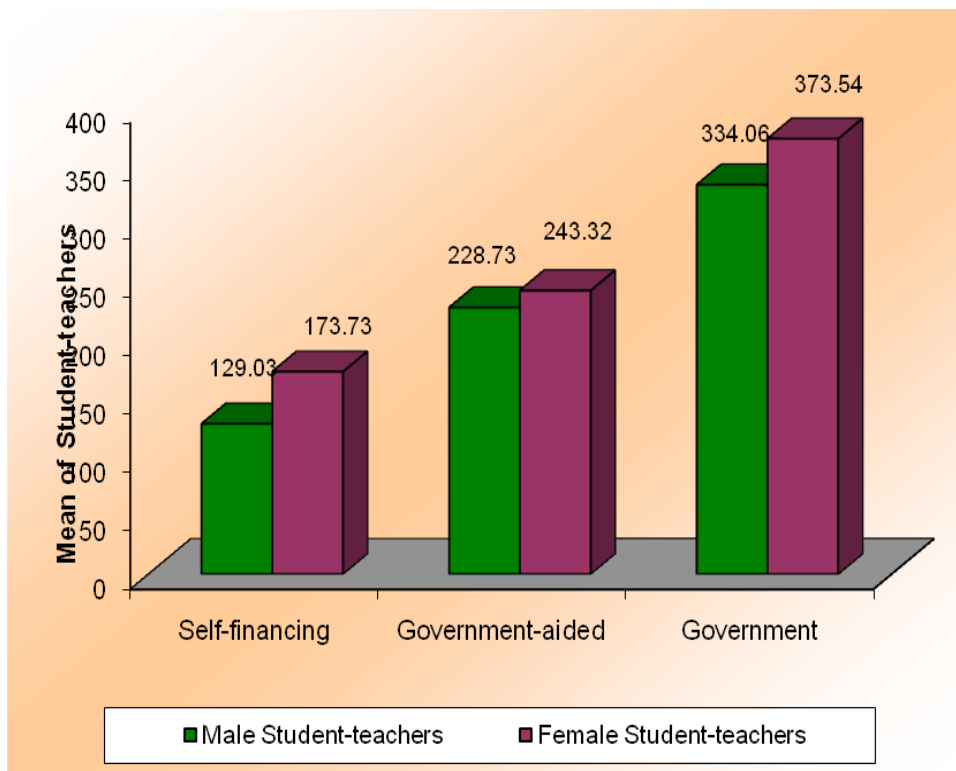


Table - 6a

Statistical Analysis of Means of Aptitude toward Teaching among Male and Female Student-teachers in Self-financing Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Male student-teachers	60	26.67	4.15	0.54	1.15	11.57**
Female student-teachers	48	40.02	7.65	1.10		

** Significant at 0.01 level.

In Table-6a, the mean and standard deviation values of aptitude toward teaching are 26.67 and 4.15 respectively for male student-teachers and 40.02 and 7.65 respectively for female student-teachers in self-financing colleges of education. The critical ratio value is 11.57, significant at 0.01 level.

Thus, the female student-teachers of self-financing colleges of education are better in their aptitude toward teaching when compared to the male student-teachers of self-financing colleges of education.

Table - 6b

Statistical Analysis of Means of Aptitude toward Teaching among Male and Female Student-teachers in Government-aided Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Male student-teachers	45	59.40	8.15	1.22	1.60	7.31**
Female student-teachers	57	71.12	7.96	1.05		

** Significant at 0.01 level.

In Table-6b, the mean and standard deviation values of aptitude toward teaching of male student-teachers are 59.40 and 8.15 respectively and 71.12 and 7.96 respectively for female student-teachers in government-aided colleges of education. The critical ratio value is 7.31, which is significant at 0.01 level.

Thus, the female student-teachers in government-aided colleges of education are better in their aptitude toward teaching when compared to the male student-teachers in government-aided colleges of education.

Table - 6c

**Statistical Analysis of Means of Aptitude toward Teaching among
Male and Female Student-teachers in Government Colleges
of Education**

Variable	Sample Size	Mean	SD	SEM	SED	CR
Male student-teachers	58	91.34	6.95	0.91	1.37	9.63**
Female student-teachers	50	104.50	7.27	1.02		

** Significant at 0.01 level.

In Table-6c, the mean and standard deviation values of aptitude toward teaching are 91.34 and 6.95 respectively for male student-teachers and 104.50 and 7.27 respectively for female student-teachers in government B.Ed. colleges. The critical ratio value is 9.63, which is significant at 0.01 level.

Thus, the female student-teachers in government colleges of education are better in their aptitude toward teaching when compared to the male student-teachers.

Figure - 9

**Means of Teaching Aptitude among Male and Female Student-teachers
in Self-financing, Government-aided and Government Colleges
of Education**

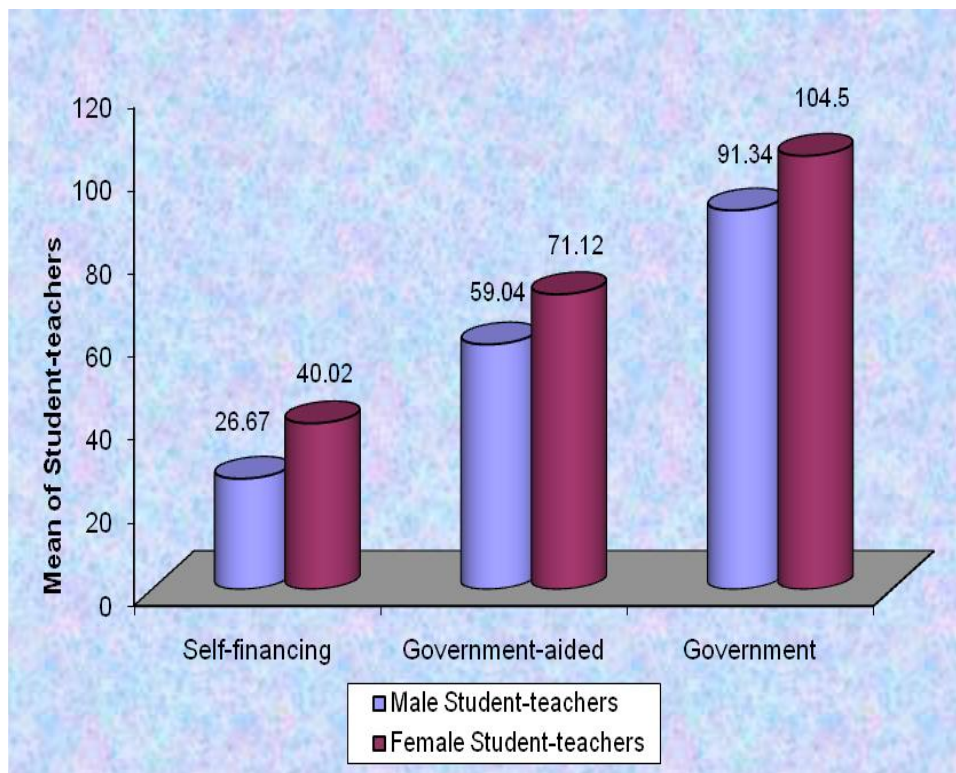


Table - 7a

Statistical Analysis of Means of Performance of Male and Female Student-teachers in Self-financing Colleges of Education

Variable	Sample size	Mean	SD	SEM	SED	CR
Male student-teachers	60	5.87	0.79	0.10	0.17	14.18**
Female student-teachers	48	8.33	1.02	0.15		

** Significant at 0.01 level.

In Table-7a, the mean and standard deviation values of performance are 5.87 and 0.79 respectively for male student-teachers and 8.33 and 1.02 respectively for female student-teachers in self-financing colleges of education. The critical ratio value is 14.18, which is significant at 0.01 level.

Thus, the female student-teachers of self-financing colleges of education are better in their performance when compared to the male student-teachers of self-financing colleges of education.

Table - 7b

Statistical Analysis of Means of Performance of Male and Female Student-teachers in Government-aided Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Male student-teachers	45	11.36	0.71	0.11	1.83	8.97**
Female student-teachers	57	13.70	1.64	0.22		

** Significant at 0.01 level.

In Table-7b, the mean and standard deviation values of performance of male student-teachers in government-aided are 11.36 and 0.71 respectively for male student-teachers and 13.70 and 1.64 respectively for female student-teachers in government-aided B.Ed. colleges. The critical ratio value is 8.97, which is significant at 0.01 level.

Thus, the female student-teachers are better in their performance when compared to the male student-teachers of government-aided colleges of education.

Table - 7c

Statistical Analysis of Means of Performance of Male and Female Student-teachers in Government Colleges of Education

Variable	Sample Size	Mean	SD	SEM	SED	CR
Male student-teachers	58	15.43	1.97	0.26	0.33	9.89**
Female student-teachers	50	18.70	1.36	0.19		

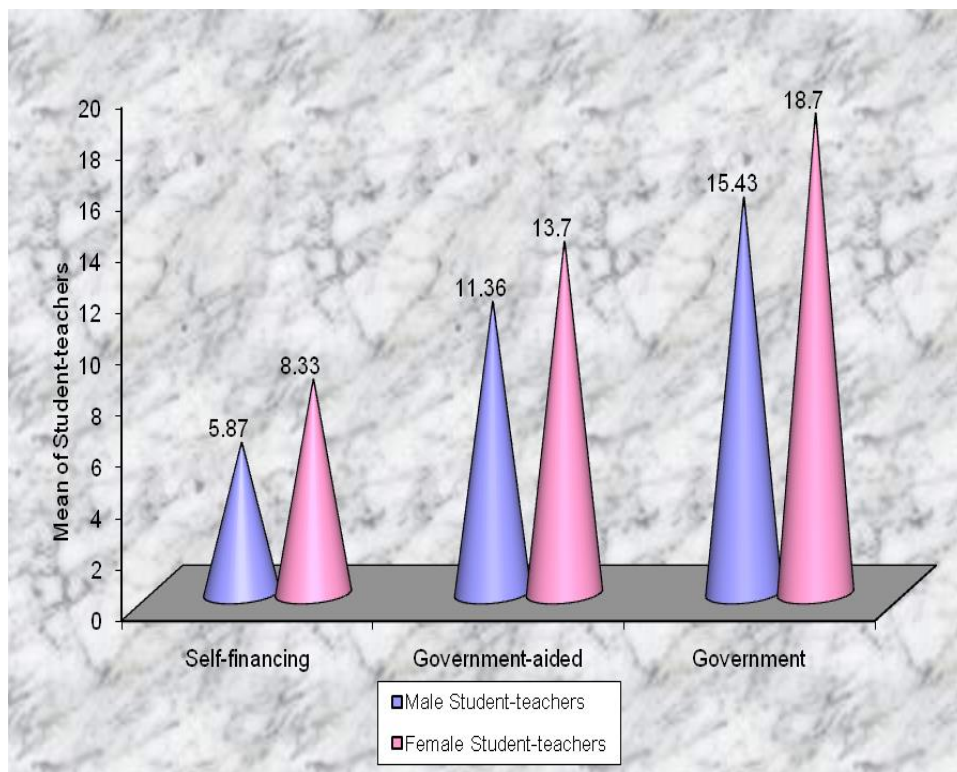
** Significant at 0.01 level.

In Table-7c, the mean and standard deviation values of performance are 15.43 and 1.97 respectively for male student-teachers and 18.70 and 1.36 respectively for female student-teachers in government colleges of education. The critical ratio value is 9.89, which is significant at 0.01 level.

Thus, the female student-teachers are better in their performance when compared to the male student-teachers of government colleges of education.

Figure-10

Means of Performance of Male and Female Student-teachers in Self-financing, Government-aided and Government Colleges of Education



10.4 DISCUSSION ON THE ANALYSIS OF VARIANCE WITH REGARD TO THE SELECT VARIABLES AMONG MALE AND FEMALE STUDENT-TEACHERS IN DIFFERENT CATEGORIES OF B.ED. COLLEGES

An attitude can be defined as an enduring organization of motivational, emotional, perceptual and cognitive processor with respect to some aspect of individual's world. It has often been observed that the object of an attitude is frequently perceived as having a goal character, which gives attitudes dynamiting character. Attitudes are a system, which can either have positive or negative involving emotions and feelings with reference to social objects and issues. Krech and Crutchfield (1948) viewed that people can hold attitudes for varying degrees of favorability toward themselves, and toward any indiscriminate aspect of their environment. There is a wide range of attitudes toward relatively abstract goals like courage, freedom, and honesty.

Choudry (1995) stated that attitude is a particular cognitive, emotional or behavioural reaction to an object, individual, group, situation or action. Johns (1996) thinks that an attitude is a fairly stable emotional tendency to respond consistently to some specific object, situation, person, or category of people. Attitudes are also much more specific than values, which dictate only broad preferences. Attitude serves as index of how we think and feel about people, objects and issues in our environment. In addition, they can provide clues to future behaviour, predicting how we will act when encounter the objects of our beliefs. The process of social interaction brings about certain developments including formation of attitudes. There are various social groups which result in the development of attitudes. These would

include the role of the family, cultural factors, the influence of education, the interrelationship of culture and individual experiences and the role of media in imparting information within a particular social group. With regard to aptitude toward teaching, it may be described as a special ability which helps an individual to acquire the required degree of proficiency or achievement in teaching field. The knowledge of teaching aptitude of an individual helps us to predict his future success in the teaching field.

In the present investigation it is seen that all select variables, attitude toward teaching, aptitude toward teaching and performance differ significantly between the male and female student-teachers within each category of colleges of education. In all colleges, it is seen that the female student-teachers have better attitude and aptitude toward teaching and thus perform significantly better than the male student-teachers. In general it is observed that women are more suitable to the teaching profession than men. It could be due to the reason that they are more understanding, caring and enduring than men. Thus, it is not a revelation that female student-teachers have significantly better aptitude and attitude toward teaching and thus perform better than male female student-teachers.

10.5 ANALYSIS OF RELATIONSHIP BETWEEN THE SELECT VARIABLES AMONG STUDENT-TEACHERS IN DIFFERENT CATEGORIES OF B.ED. COLLEGES

The table below presents the analysis of relationship between the select variables, attitude toward teaching, aptitude toward teaching and performance of student-teachers in different categories of colleges of education, namely, the self-financing, government-aided and government colleges of education.

Table – 8

Analysis of Correlation between the Select Variables among Student-teachers in Different Categories of Colleges of Education

Variables	Attitude toward Teaching	Aptitude toward Teaching	Performance of Student-teachers
Attitude toward Teaching	1	0.94**	0.94**
Aptitude toward Teaching		1	0.91**
Performance of student-teachers			1

** Significant at 0.01 level

From the above table (Table-8), it is evident that the select variables of the present study namely aptitude toward teaching, attitude toward teaching and performance are all positively correlated with each other and significant at 0.01 level.

10.6 DISCUSSION ON THE ANALYSIS OF RELATIONSHIP BETWEEN THE SELECT VARIABLES AMONG STUDENT-TEACHERS IN DIFFERENT CATEGORIES OF B.ED. COLLEGES

Teachers are the most critical group among the Indian society today. They are not only the most influential people to the knowledge of students but also the individuals who make it possible to expand the boundary of life and how we can understand it to the fullest extent. Teachers form religious leaders, world super powers, and everyone else in between. Due to the success of teachings we have increased the knowledge base of our doctors to create safer and more efficient ways to operate while under pressure by exposing new strategies and equipment to better prepare them for whatever they come across. Everything starts with teachers and the mentality they possess to drive students to new levels. The teacher is the yardstick that measures the achievements and aspirations of the nation. The worth and potentialities of a country get evaluated in and through the work of the teacher, "The people of a country are the enlarged replica of their teacher." They are the real nation builders.

It needs no description that the teacher is the pivot of any educational system of the younger students. On him rests the failure or the success of the system. If the teachers are well educated and if they are intellectually alive and take keen interest in their job, then only, success is ensured. But, if on the other hand, they lack training in education and if they cannot give their heart to their profession, the system is destined to fail. Hence, the teacher being the most vital component of the school it is very essential that they possess good attitude and aptitude toward teaching.

Teachers supply the feeling of trust with their students at an early point in the educational fields. Children grow to learn and become adapt to learning young which then helps them to move on and learn things on their own to help better themselves as they grow and become more involved with society. Teachers emphasize to us that not all is perfect and we as students must learn to help ourselves out to succeed as human beings. Certain teachers have more effect on their students than others which makes the learning process easier for others therefore leading to more successful people. In a world driven by creation and intelligence of regular people this is all cause by the teachers who got them there. In the present investigation, it is seen that there is a significant relationship between all select variables, namely attitude toward teaching, aptitude toward teaching and performance of student-teachers in different categories of education. Thus, it is very evident that attitude and aptitude toward teaching influences the performance of student-teachers.

11. IMPLICATIONS OF THE STUDY

There is always a need to evaluate the efforts which are being made by the training institutions to achieve the desired goals. It is highly recognized that the teacher performance, the aptitude of the teacher and a healthy attitude towards world of work contribute a lot in successful teaching. Effective Teachers can do wonders in their classrooms. The present study can help all the society members who are responsible for providing teacher education for making the personality of teachers trainees more effective and successful.

Generally it is thought that aptitudes are native or inborn, these cannot be developed, but the present study proved this notion wrong. Teaching potential can be developed by providing conducive climate and stimulating experiences to the concerned. The B.Ed. programme has to be planned to develop favourable attitude towards teaching by providing various curricular and co-curricular experiences throughout the course. Therefore, the present study may inspire and motivate the people to join the B.Ed. course.

The present study is sure to stimulate the academic bodies to plan the teacher education programme in a more effective way, which will definitely provide data-base to bring change in the current syllabi, duration of training period, theory or practical hours, teaching practice, teaching methodology, work experience and methods of evaluation, etc.

Findings of the present investigation is sure to help the administrators and faculty of the B.Ed. colleges in providing the rationale of dissemination teacher education programme and if necessary to bring changes in the teacher education programme in the light of feed back received. Government and other organisations engaged in teacher education may extract the benefit from the conclusions of the study and may come to know the requirement of spending money in a proper way for the development of a healthy attitude, teaching aptitude, personality and teacher effectiveness of prospective teachers doing B.Ed. Hence, findings will be useful for policy makers especially NCTE and other national level organisations to bring desired changes in the programme.

12. CONCLUSION

In the school system, it is important to teachers to attain various training for school development as well as personal teaching development. Studies indicate the significance of school culture, school structure, class size, staff support, teacher control etc. in affecting teachers' commitment, efficacy and attitudes toward the implementation of instructional innovation. It is found that teachers feel more efficacious in schools of high socio-economic status and large size. The larger schools provide more resources to teachers and so they feel more efficacious in their working environment. Teachers may leave their professions if given an alternative that offers a higher salary. It indicates that income has a negative to a strong negative effect on teachers decision (Mok and Kwong (1999). Teachers view job dissatisfaction as principally being overloaded, given poor payment and how they are evaluated by society. A lack of participation in decision-making, failure to provide essential instructional resources, deficiency of administrative support, and insufficiency of trust among teachers professional expertise seem to increase the degree of teacher dissatisfaction. Most importantly, though, teacher dissatisfaction appears to be the main factor behind leaving the profession in many countries (Michalinos and Elena, 2004).

Fielstra (1985) found that teachers discouraged their students from considering careers in teaching, even though these teachers had teachers as their mentors and role models. Research has shown that pre-service teachers do not necessarily develop new perspectives about teaching while

in a teacher education program, they simply become more knowledgeable at defending the beliefs they already possess. Others conclude that beliefs about teaching not only act a lens by which teachers make meaning of their practice, but they influence their behavior to suit the context of the classroom experience. This is not to say that some belief change does not occur, but it varies individually among student-teachers. For example, research has shown that students entering teacher education programs with a reflective orientation are more likely to experience change in beliefs than those without such a perspective (Taylor, 2002). Smart and Pascarella (1987) suggest that existence of decreased work satisfaction might lead to an awareness of insufficient knowledge for practice. Teachers who are not satisfied with their job should seek further training or simply stay out of the teaching profession. Yuen and Cheng (1991), upon a study of Hong Kong teachers, indicate that teacher training (as well as teaching experience) has significant contributions to teachers' continuance commitment in the school. Teachers are therefore bound to continue their staying with the schools where they are teaching, and further teacher training is an asset for teachers to get promotion in their schools.

How society value teachers has been found to extremely affect attitudes toward teaching. One implication of this result is to continually work on improving peoples' value of teachers. Teachers should be respected and appreciated by everybody in the society. Media has to do a lot in this regard. Unfortunately, what Arabic media has been doing is exactly the opposite. Teachers have been demonstrated in a negative image that affect people not to be teachers unless no other options are available. Enjoy teaching is

another interesting issue to look at. Regardless of all problems and difficulties that teachers generally face, this factor still plays an important role in affecting attitudes toward teaching. Although, this could be mainly a personal factor for many people who love teaching, we should not account only on that. All appropriate conditions should be offered for these people to continue their love of teaching.

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**N.K.T. NATIONAL COLLEGE OF EDUCATION FOR WOMEN
CHENNAI-600 005**

DEPARTMENT OF PHYSICAL SCIENCE-EDUCATION

Name (Optional):

Registration Number:

TOOL-1

**MADDUX EFFECTIVE PERFORMANCE APPRAISAL MODEL
(Maddux, 2004)**

You will find a precise scale of performance appraisal of your teachers at the secondary and higher secondary levels. Kindly go through them carefully and indicate where each student-teacher will fit in the five point rating scale on each of the job related characteristics. It will take you five minutes to complete the scale. Thanks for your cooperation.

TEACHING SKILLS

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

INTERPERSONAL

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

COMMUNICATION

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

CLASSROOM MANAGEMENT

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

KNOWLEDGE

Unsatisfactory---Satisfactory---Average----Above average—Outstanding

TOOL - 2

TEACHER ATTITUDE INVENTORY

S.P.AHLUWALIA (Sagar)

INSTRUCTIONS

The present inventory consists of 90 statements aimed to identify the professional attitudes of the teachers. There is considerable disagreement as to what these attitudes should be , therefore there are no right or wrong answers. What is required is your own individual feeling or opinion about the statements. Read each statement and decide how you feel about it. To do this, you have to put, a tick mark on anyone of the five boxes. Given in the answer sheet. If you strongly agree with the statement put a tick mark in the first, if you agree put a tick mark on the second, if you undecided or uncertain put a tick mark in the third, if you disagree put a tick mark in the fourth and if you strongly disagree, put a tick mark in the fifth against the serial No. of that statement.

Think in terms of the general situations rather than specific ones. There is no time limit but you have to respond as quickly as possible..

Please respond to each item.

Remember that you have not to make any mark on the resumable booklet. Now read each statement carefully and record you response on the answer sheet.

DO NOT OPEN UNTIL YOU ARE TOLD TO DO SO

TEACHER ATTITUDE INVENTORY

SD = Strongly Disagree; D = Disagree; U = Undecided; A = Agree; SA = Strongly Agree

No.	Item	SA	A	U	D	SD
1	If I had a son entering college, I would have encouraged him to become a teacher					
2	A class-room should not be as quiet as graveyard					
3	Students behaviour should be taken into consideration by the teacher					
4	Students work hard if they are not given freedom to ask questions in the class					
5	Students are generally sincere					
6	A teacher respects everybody					
7	Individual differences among the students should not be paid much attention to					
8	Teaching develops personality and character					
9	Class-room teaching makes the students disciplined					
10	Freedom should not be given to the students to learn according to their own desire					
11	Pupils should be given freedom to express their views in the class					
12	Teachers are not free to express their views					

No.	Item	SA	A	U	D	SD
13	Those who fail in other fields of work usually become teachers					
14	Teaching work becomes easy in the class-room					
15	Student learn more by love than punishment					
16	Pupils should not be let down before the class					
17	Class-room teaching begets social atmosphere					
18	Students do not live together in harmony with one another					
19	When one sees a teacher he feels like laughing at him					
20	No occupation is better than the teaching profession					
21	Students learn best by doing					
22	Nowadays students do not obey their teachers					
23	Everybody pays attention to what a teacher says					
24	Teachers are bostful					
25	There should be no students union in school					
26	Teachers do not determine the moral standards of a nation					

No.	Item	SA	A	U	D	SD
27	Students health is an important responsibility of the school					
28	Just one method of teaching is not suitable for all the students					
29	Students observe discipline only in the school					
30	Most of the teachers are greedy					
31	Students are generally dis-interested in national problems					
32	Group activities do not create a sense of co-operation among the students					
33	teaching profession has a bright future					
34	Teaching profession appears to be interesting only in the beginning					
35	Bright and talented students often suffer in class-room teaching.					
36	The surrounding of the school have an impact on the learning process					
37	Students should not be given freedom to think					
38	Class-room teaching does not inculcate a feeling of self-confidence in the students.					
39	Pupil remain unsatisfied if their doubts are not clarified					
40	People do not look down upon teachers					
41	I take pride in telling that I belong to the teaching profession					

No.	Item	SA	A	U	D	SD
42	Class-room teaching makes students respect each other					
43	The talents of students remain hidden if due attention is not paid to their special abilities					
44	Students should enter the class only after obtaining permission from the teacher					
45	Teacher do not have a sense of humour					
46	There are more disadvantages in the teaching profession					
47	Class-room teaching strengthens the desire to lesrn					
48	I want to take up the teaching profession only because my parents wish so					
49	Books are not all in all for students					
50	Students can become good citizens only when teachers are good teachers					
51	I get pleased when mischievous students get a beating					
52	One who does according to what he says, has the qualities of a teacher					
53	Class-room teaching needs a change					
54	Different activities performed by the students should not have a place in their final evaluation					
55	Good relationship between the teacher and the taught is essential for learning					

No.	Item	SA	A	U	D	SD
56	Students should not be allowed to ask questions in the class					
57	Teachers cannot satisfy intellectually superior students					
58	Students can do anything in order to get through the examination					
59	There is a distance between teacher and students in class-room teaching					
60	It is a curse to remain in the teaching profession					
61	Back-benchers do not get proper attention in class-room					
62	It is good that now-a-days aptitude of students is given importance					
63	Teaching methods of the past were better than those of today					
64	While assigning home-task pupil's ability should be taken into consideration					
65	The place of the student should not be supreme in class-room teaching					
66	Teaching is very stimulation profession					
67	Weak students gain a lot through the revision of the lesson by the teacher in the class-room					
68	One, who does not inflict corporal punishment on students is a poor teacher					
69	One should not even dream of becoming a teacher in his life					

No.	Item	SA	A	U	D	SD
70	Students talk often nonsense in the class					
71	Good learning condition is created when the relations between the teacher and the pupil are warm and friendly					
72	Teaching profession makes people lazy					
73	Class-room teaching is book-centered rather than pupil-centered					
74	Keeping students informed of their progress has little effect on learning					
75	The teacher should not make the lesson interesting for children					
76	A good teacher has little need for charts, maps, diagrams and the like					
77	Most students do not respect the teachers					
78	Teaching makes a teacher tired					
79	Teaching profession is not good medium of serving humanity					
80	We should fit the curriculum to the student and not the student to the curriculum					
81	Students take pride in the neat and attractive environment					
82	Students should have right to express - disagreement with what the teacher says					

No.	Item	SA	A	U	D	SD
83	One of the difficulties with modern schools is that discipline is often sacrifice to the interest of students					
84	In class-room teaching the principle of "learning by doing" cannot be implemented					
85	I will not take up any other job, I will join the teaching profession					
86	If I do not get any other job, I will join the teaching profession					
87	Teacher should not be strict in their dealings with students					
88	Teachers are the leaders of the nation					
89	If a student does not understand an assignment, it is usually the fault of the teacher					
90	A teacher's job is primarily one of the teaching and explaining the subject matter					

TOOL – 3

Teaching Aptitude Test Battery (TATB)

fw;gpj;jy; ehl;lj;jpwd; Nrhjid jhs;fs; (TATB)

KidH R.P.rpq; kw;Wk; S.N.rh;kh

gFjp - I

a) gl;bay; ‘A’ y; cs;s NfhLfis B –apypUe;J jFe;j thHj;ijia
NjHe;njLj;J epug;Gf.

(ck;) gl;bay; A
nghpaJ: rpwpaJ : caHe;jJ

gl;bay; B
,akiy: fly; jho;e;jJ> Fop

	gl;bay; A	gl;bay; B
1	Ngd; : gr;ir : ghy;	gR> ML> xsp> ,dpg;G
2	kiy : ghiw : fly;	ghy;> Kj;J> ePH> nerthsH jwp
3	gUj;jp : E}w;G rf;fuk; : Jzp	gUj;jpnrb> E}y;> nuapy;> nerthshpd; jwp
4	gpwg;G : ,wg;G : cjak;	Muk;gk;> r+hpad;> ngaH> m];jkdk;
5	kuk; : ehw;fhyp : ,Uk;G	mr;R> Ruq;fk;> lhlh efH> JHfh efH
6	ePsk; : fpNyh kPl;IH : fdk;	f[k;> iky;> fpNyhfpuhk;> kPl;IH
7	,d;gk; : Jd;gk; : rphpg;G	jpUkzk;> mOif> tpisah;l;> [hdpthy;rH
8	Ntfk; : epA+l;ld;.kpd;rhuk;	x.,.Ngh];> uhkd;>NgNuNI> MHf;fpkpb];
9	aKdh> Mf;uh> Njhl;l efuk;	ehf;G+H> uhQ;rp>yf;Ndh>g;Nu];yp
10	ujk; : Fjpiu : Nkhl;IH	rf;fuk;> xl;LdH> vQ;rpD;> elj;JdH

(B) fPOs;s vz; thpirapy; tpLgl;l rhpahd vz;iz epug;Gf.

(c.k;;) 12>10> 8> 6> 4> ... tpil: 2

11. 70> 60> 51> 43> 36> 300...
12. 15> 12> 9> 6...
13. $1 > 1/2 > 1/4, 1/8 \dots$
14. $1/10 : 1 :: 1/0 \dots$
15. $16 : 4 : 4 \dots$
16. 1, 9/10, 8/10, 7/10
17. $14 : 35 :: 20 \dots$
18. $9 : 150 :: \underline{\hspace{2cm}} 1750$
19. $2 : 4 = 7 : 14 = 16 : 32 = \underline{\hspace{2cm}} 42$
20. 1, 4, 7, 10, 13
21. 4 20, 28, 36
22. 40, 37, 34, 28, 25

(C) jFe;j tpdh vz; Nghl;L fPo;f;fz;ltw;wpf;F jHf;f uPjpahd tpilia vOjTk;

23. ghl;dhtpy; trpf;Fk; kUj;jthpd; rNrhjuu; fy;fj;jhtpy; trpf;Fk; xU tof;fwpQH.
24. %d;W cwtpdH ntspehL nry;fpd;wdh;. ,isatH ,UtUk; %d;whkthpd; kfDk;> kfSk; MthH.
25. ghk;NgapypUe;J G+dhtpw;F xU kpd;rhu uapy; nry;fpwJ. fhw;W Nkw;fpypUe;J fpof;F Nehf;fp tPRk;NghJ> Gif ve;jg;gf;fk; nry;Yk;?
26. xU [Ptuhrp 16 mb cauKs;s xU J}zpy; VWfpwJ. 1epkplj;jpy; 3mb Vwpagpd;> 2mb fPNo tUfpwJ. mJ vj;jid epkplq;fspy; cr;rpia milAk;

27. rpy khztHfs; ,U FOOf;fshfg; gphpf;fg;gLfpd;wdH. Kjy; FOtpd; jiytH> 2k; FOtpd; xUtiu mDg;gpdhy;> ,U FOOf;fs; rk vz;zpf;if cs;sitahFk; vd;fpwhH. ,uz;lhk; FOj;jiytH ePH xUtiu vkf;F mDg;gpdhH ck; FOitg;Nghy; 3 klq;F vz;zpf;ifahNthk; vd;fpwhH. ,U FOOf;fspYk; cs;s khztHfspd; vz;zpf;if vd;d?
28. uhk;> rpahiktpl 10-taJ %j;jtH. fPjh rpahik tpl 5-tJ ,isatH. uhkpd; taJ 18.08.36-y; 30 Mz;Lfs; vdpy; 18.08.43-y; fPjhtpd; taJ vd;d?
29. %d;W khztHfspd; nkhj;j taJ 4. ehd;fhtJ khztH Nrh;e;j gpd; mtHfs; ruhrhp taJ 13 MfpwJ. 4-tJ khztdpd; taJ vd;d?
30. uhk;> rpahkplk; eP vdf;F xU &gha; nfhLj;jhy; cd;idg;Nghy; ,U klq;F njhif cs;stdhNtd; vd;whd;. rpahk;> uhkplk; eP vdf;F 1&gha; nfhLj;jhy; cdf;F rkkhd njhif cs;stdhNtd; vd;fpwhd;. xt;nthUthpIKk; cs;s njhif vd;d?
31. xU kdpjd; xU Mis xU khjj;jpw;F &gha; je;jk;> xU GwhTk; rk;gskhf Ngrp Ntiyf;F mkHj;jpdhH;. 5-ehl;fs; Ntiyf;F gpwF mtd; Gwhf;fis rk;gskhf vLj;Jr; nrd;whd;. vdpy; me;j Gwhtpd; tpiy vd;d?
32. ,uz;Lld; ,uz;L NrHj;jjpy; ghjp vd;d?

gFjp-II

20 thf;fpaq;fs; cs;sd. xt;nthd;wpw;Fk; 5 fUj;Jfs; nghUj;jg;gl
Ntz;Lk; ve;j \$w;Wk; rhpNah> jtNwh my;y. cd; nrhe;j czHT>
fUj;Jg;gb KbT nra;aTk;. KOtJk; cld;ghL vdp; 3 vd;Wk;>
Vw;ftpy;iy vdp; 2 vd;Wk;> KOtJk; Vw;ftpy;iy vdp; 1 vd;Wk;>
NghITk;.

1. md;G nrYj;jpdhy;> Foe;ijfs; xUikg;ghl;il czHfpd;wdH.
2. MrphpaH fhL;Lk; md;ghy; Foe;ijfs; ghohfpd;wdH.
3. MrphpaH ele;J nfhs;Sk; Kiw khztHfspilNa gaj;ij cz;lhf;f
Ntz;Lk;.
4. ve;j MrphpaHfSplk; gak; cs;sNjh> mtH nrhy;tij Foe;ijfs; ftdkhf
Nfl;gH.
5. Foe;ijfs; mbf;Fk; Mrphpahpd; tFg;G fl;Lg;ghL mjdhy; ed;whf
,Uf;Fk;.
6. tpisahl Rje;jpuk; nfhLg;gjhy; khztHfs; rhpahf gbg;gjpy;iy.
7. khztHfspd; gpbthjj;ij Nghf;f khztHfis fz;bf;Fk; MrphpaH
GfOf;FhpatH.
8. Foe;ijfs; G+uz Rje;jpuk; Ntz;Lfpd;wdH.
9. Foe;ijfs; Njitfis ghpTld; Nehf;f Ntz;Lk;
10. gs;sp tp\aq;fspy; khztHfspd; mgpg;gpuhaq;fis Nfl;f Ntz;Lk;
11. khztHfis gl;bkd;wq;fspy; fl;Lg;ghL ,d;wp Ngrtpl Ntz;Lk;.
12. \$l;lq;fspy; khzth;fs; MrphpaHfis Fiw \$w mDkjpg;f Ntz;Lk;.
13. khzth;fspd; vz;zq;fs; kjpf;fg;gl Ntz;Lk;

14. fPo;gbahikf;F khztHfSf;F cly; jz;lidfis nfhLf;f Ntz;Lk;
15. khztHfis NeUf;F NeH MrphpaH re;jpf;ff;\$lhJ.
16. fhY jhkjkhf tUgtHfSf;F cly; jz;lid nfhLf;fyhk;.
17. rpWth;fs; KbTfs; vLf;Fk; jpwikaw;wtHfs;.

18. rz;il NghLk; khzth;fis gs;spia tpl;L ntspNaw;w Ntz;Lk;.
19. mbf;fhky; ,Ue;jhy; Foe;ijfs; ghohfptpLtH.
20. Njitt;F Nky; khztHfs; Ngrf;\$lhJ.

gFjp - III

**fPNo rpy KOikapy;yhj fUj;JfSk;> mtw;wpw;F cfe;j khw;W fUj;JfSk;
nfhLf;fgl;Ls;sd. mtw;wpy; a>n>c>d vd VjhtJ nghUj;jkhd xd;iw
NjHT nra;J me;j vOj;ij Nfs;tp vz;Zf;F NeNu tpilj;jhspy; vOjTk;.**

1. ePH Giftz;bapy; gazk; nra;J nfhz;L ,Uf;fpwPH. xUtH Gif gpbj;Jf;
nfhz;L ,Uf;fpwhH. me;j Gif ckf;F gpbf;fhJ.
 - (a) mtiu Gif gpbf;fhky; ,Uf;f nrhy;Yjy;
 - (b) rw;W Neuk; ntspNa nry;Yjy;
 - (c) mthplk; uapy; ngl;bapy; vOjg;gl;Ls;s mwptpg;ig fhl;Ljy;.
 - (d) rpfnul;il gpLq;fp vhpjy;.
2. Mrphpauhdgpd; ck; rf CopaH jw;fhypf gzpePf;fk;
nra;ag;gLfpwhH.
 - (a) mtiu khztHfis J}z;b tplr; nrhy;Yjy;
 - (b) Nky; KiwaPL nra;Ak;gb J}z;b tplr;nrhy;Yjy;.
 - (c) rhFk;tiu cz;zhtpujk; ,Uf;fr; nrhy;Yjy;.
 - (d) Ntnwq;NfahtJ Ntiy NjLk;gb nrhy;Yjy;
3. gs;spapy; ve;j tpisah;L fUtpfSk; ,y;iy. clw;fy;tp Mrphpahf ePH
vd;d nra;tPH?
 - (a) jiyikia Njitahd fUtpfis thq;fr; nrhy;Yjy;.
 - (b) clw;fy;tp epfo;r;rpfis uj;Jr;nra;jy;.
 - (c) khztHfis gs;spf;F vjpuhfJ}z;Ljy;
 - (d) Nky; mjpfhhpfsplk; njhptj;jy;.
4. ePH Mrphpauh f gzpahw;Wk; gs;spapy;> xU rf Mrphpauh f
jpde;NjhWk; gs;spf;F jhkjkhf tUfpwhH. ePH

- (a) mthplk; rhpahd Neuj;jpy; tUtJ ey;yJ vd;w fUj;ij njhptpg;gPuh?
- (b) jiyik Mrphpahplk; njhptpg;gPuh?
- (c) kw;w MrphpaHfs; Kd;dpiyapy; mtIU ntl;fkila nra;tPuh?
- (d) ,ij khztHfs;> ngw;NwhHfspilNa tpsk;guk; nra;tPuh?
5. ePH Mrphpauhfa gpd; ck;> khzth;fspy; xUth; vg;NghJk; fhy jhkjkhf te;jhy; ePH nra;tJ.
- (a) mtIU mbg;gJ
- (b) ngw;Nwhhplk; \$Wjy;
- (c) fhuzj;ij Nfl;lwpjy;
- (d) mts; ntl;fg;gLk;gb nra;jy;
6. ePH Mrphpauhfa gzpahw;Wk; gs;spf;F> fy;tp mjpfhhp (Inspectpor) te;jpUf;Fk;NghJ> xU ngw;NwhH ck;ikg;gw;wp Fiw \$WfpwhH. ePH;>
- (a) ngw;Nwhhplk; Nfhgk; nfhs;tPuh?
- (b) mtIU mikjpahf ,Ue;J jpUg;jp gLj;JtPuh?
- (c) mtUila Foe;ijfs; kPJ gopthq;f KbT nra;tPuh?
- (d) mYtyhplk; ck; epiyia tpsf;fp nrhy;tPuh?

7. ck; gs;spapy; cs;s rf MrphpaH xUtH ck;kplk; tpNuhjk; ghuhl;Lk; NghJ ePH
- mtH kPJ gifik fhl;Ljy;
 - mtUf;F vjpuhf jpl;lk; jPl;Ljy;
 - mtiu rl;il nra;ahkt; ,Uj;jy;
 - mtiu ez;guhf KaYjy;
8. ck; njhopiyg;gw;wp xU tof;fwpQH Fiw \$Wk;NghJ mtiug; gw;wp GfhH nrhy;Yjy;
- mtH kPJ gifAzHT nfhs;Sjy;
 - mtH Ngr;ir Nfl;gjpy;iy
 - mtH Ngr;ir Nfl;lhYk; nghUl;gLj;jhky; ,Uj;jy;
9. ePH epWtdj;jpy; Kjy;tuhf ,Uf;Fk; NghJ> xd;W my;yJ ,uz;L MrphpaHfs; tFg;gpy; cl;fhHe;J nfhz;L ,Ue;jhy; ePH
- epHthfj;jplk; njhptpg;gJ
 - fhuzj;ij Nfl;gJ
 - kw;w MrphpaHfspIKk; ngw;Nwhh;fspIKk; GfhH nra;tJ
 - mtiu jdpahf mioj;J Ghpa itg;gJ
10. ePh Mrphpauhf Mdgpd;> xU MrphpaH kd;w \$l;l;jpy; ck; gf;fjpYs;s ,U Mrphpah;fs; VNjh xU gpur;ridia tpthjpf;fpd;wdH. ePH
- rhpahf NgRk; efiu Mjhpjg;gJ
 - jyitiu> vy;NyhUk; mikjpahf ,Uf;Fk;gb nrhy;y Ntz;Ljy;
 - ePH mikjp fhj;jy;
 - ,UtiuAk; mikjpahf ,Uf;Fk;gb nrhy;Yjy;

11. Mrphpauhd gpwF ve;j tFg;ig elj;j tpUk;GtPH
- 1tJ tFg;G
 - 5tJ tFg;G
 - 7tJ tFg;G
 - 9tJ tFg;G
12. Mrphpauhf Mdgpd; kw;w MrphpaHfSld; ey;YwT itf;f kpf Kf;fpakhdJ?
- mtHfisg;gw;wp jiyik Mrphpahplk; Gfo;jy;
 - mtHfs; jtWfis fUjhky; ,Uf;f
 - mtHfspd; ,d;g Jd;gq;fspy; gq;F Vw;wy;
 - mtHfis ngha;ahf Gfo;jy;/Kf];Jjp nra;jy;
13. Mrphpauhd gpd;> ck; rf Mrphpah mjpfkhf NgRk; gz;Gs;sth;. khiy 4-kzpf;F ePH fisg;ghf ,Uf;Fk; NghJ tUfpwhH. mg;NghJ ePh.
- tpUg;gkpd;wp mtH Ngr;irf; Nfl;gPuh?
 - gpd;dH tUk;gb mthplk; nrhy;tPuh?
 - me;j Neuk; th mDkjp kWg;gPuh?
 - NtW Ntiyapy; RWRWg;ghf <LgLtPuh?
14. Mrphpa FOtpd; nrayhsuhf ePH ,Uf;Fk;NghJ> \$l;l;jpw;F rpyH te;Js;sdH. ePH
- xt;nthUtIUak; Ntz;LtPuh?
 - ck; ez;guhfp rpyiu kl;Lk; Ntz;LtPuh?
 - \$l;l;ij \$l;lhky; ,Ug;gPuh?
 - cq;fs; uh[pdhkhit nfhLg;gPuh?

15. fhy;ge;J tpisahL;L ikjhdj;jpy; xU tpisahL;L tPuuhy; ckf;F fhypy; mbgLfpwJ. mg;NghJ ePH
- mtUld; rz;il nra;tPuh?
 - mtiu kd;dpg;gPuh?
 - mtH ck;kplk; kd;dpg;G Nfhu tpUk;GtPuh?
 - mtUld; tPlhAtplj;ij vd KbT nra;tPuh?
16. Mrphpauhd gpd; ckf;F xUtH cjTfpwhH. ePH
- mtH nra;j ed;ikia kwg;gPuh?
 - mtUila mwpTiug;gb elg;gPuh?
 - gpujpykhd mtUila Ntiyfis nra;tPuh?
 - mstiu Gfo;tPuh?
17. Mrphpauhf Mdgpd;> ck; gs;spapy; xU fyhr;rhu epfo;r;rp elf;fpwJ. mjpy; ePH vOjpa ftpij xd;iw \$WfpwhH. XU MrphpaH me;jf; ftpij NtW xUtuhy; vOjg;gl;ljhF nrhy;fpwhh;. ePH
- mthplk; rz;il Nghl mtH tPl;Lf;F nry;tPuh?
 - mthplk; Mjhuk; jUk;gb Nfl;gPuh>
 - mtUila Ntiyia gjpYf;F nra;tPuh?
 - gopthq;Fk; vz;zj;Jld; mikjpahf ,Ug;gPuh?
18. ck; mz;il tPl;Lf;fhuH F&ukhd (nfhba) Fzk; gilj;jtH eilghijia ePH jpdKk; Rj;jk; nra;fpwPH. Mapd; mtH jpdKk; Fg;igia ck; tPl;lUNf NghLfpwhH. vdpY; ePH
- mtH tPl;Lf;F nrd;W rz;il NghLtPuh?
 - mtH tPl;L Kd; Fg;igia NghLtPuh?
 - tPL khwp NghtPuh?
 - tPl;L nrhe;jf;fhuhplk; mtIU ntspNaw;wr; nrhy;tPuh?
19. ePq;fs; xU khztDf;F jdpj;J ghIk; elj;JfpwPH mtd; NjHtpy; NjHr;rp ngwtpy;iy vd mwptpf;fg;gl;lhy; ePH?

- (a) mtDf;fhf Kjy;thplk; mZFtPuh?
- (b) ngw;NwhH %yk; mZfr; nrhy;tPuh?
- (c) khztDld; fLikahf ciog;gJld; ngw;NwhUf;F ey;y Gj;jpkjp toq;FtPuh?
- (d) mtDila tpilj;jhis kPs;ghh;it nra;a mDkjp Nfl;gPuh?
- 20 ck; kfis xU igad; ed;whf mbj;J tpl;lhd;. eP
- (a) mtUila re;Njfj;ij Nghf;f Kay;tPuh?
- (b) mtiu rl;il nra;ahky; ,Ug;gPuh?
- (c) mtiug;gw;wp GfhH nra;tPuh?
- (d) mtUf;F vjpuhd
22. ck; ez;gH ck;kplk; gz cjtp Nfl;L> ck;khy; nfhLf;f ,ayhjjhy;> ck;kPJ kdj;jhq;fis cs;shH ePH
- (a) mtH re;Njfj;ij Nghf;Fjy;
- (b) mtiu ntWg;gPuh?
- (c) mtiug;gw;wp ftiyg;glhky; ,Uj;jy;
- (d) mtiu Fiw \$Wjy;
23. ckf;F eifr;Rit gpbf;fhJ. Mapd; ez;gHfs; eifr;Ritapy; <LgLtij epWj;jtjpy;iy. ePH.
- (a) mtUld; rz;il NghLtPuh?
- (b) ePUk; NrHe;J eifr;Ritapy; <LgLjy;
- (c) mtiu re;jpf;f tpUk;ghky; ,Uj;jy;
- (d) mtUld; NgRtjpy;iy

24. ahH fpuhz;l; buhq; Nfhl;il Nghl;lhH vd;w Nfs;tpia ,U khztHfs;
ck;kpld; Nfl;fpd;wdH
- (a) mtHfis jpl;b mDg;GtPuh
 - (b) rhpahd tpil \$WtPuh?
 - (c) rhpj;jpu Mrphpaiu Nfl;fr;nra;jy;
 - (d) tFg;gpy; nrhy;tjhf cWjpaspj;jy;
25. ck; ez;gH ePjpkd;wj;jpy; ngha; rhl;rpak; nrhy;y ck;ik miof;fpwhH
ePH
- (a) ngha; rhl;rpak; nrhy;Yjy;
 - (b) rhl;rpak; nfhLf;f kWj;jy;
 - (c) tof;if jpUk;g ngw nrhy;Yjy;
 - (d) el;ig tpl;LtpLjy;
26. ePH Kjy;th; xU MrphpaH vg;NghJk; kw;nwhU Mrphpaiug; gw;wp
Gfhh; nra;fpwhH
- (a) mtUila Ngr;Rf;F Kf;fpaj;Jtk; nfhLg;gjpy;iy
 - (b) mg;gb nra;ahky; ,Uf;fr; nrhy;Yju;
 - (c) Nfhgk; nfhs;Sjy;
 - (d) GfhH \$wg;gLgtiu mioj;J tprhhpj;jy;
27. re;jhy; gFjpapy; ePH Mrphpauhf gjtp Vw;Ws;sPH. re;jhs nkhop
ckf;F njhpahJ. ePH
- (a) khw;wk; NfhUjy;
 - (b) re;jhs nkhopia fw;f KaYjy;
 - (c) Ntisia tpl;L tpLjy;
 - (d) tpLg;gpy; nry;Yjy;

gFjp - IV

fPo;f;fz;l KOikaw;w thf;fpaq;fis nfhLf;fg;gl;Ls;s ,U Jiz
thf;fpaq;fspypUe;J nghUj;jp KOik nra;aTk; a my;yJ b vd;w vOj;ij
Nfs;tp vz;Zf;F NeNu tl;lkpl;L fhl;ITk;.

1. tFg;gpy; ghlk; Muk;gpf;Fk; Kd;> khztHfspd; Kd;dwpit Nrhjpf;f
Ntz;Lk;. Vnddpy;>
khztH rj;jk; Nghlhky; ,Uf;fyhk;
(a) khztHfspd; f;l;ij MrphpaH mwpayhk;
2. ey;y mwpT MrphpaUf;F mtrpak; Njit> Vnddpy;
(a) tFg;ig mtH fl;Lg;ghl;L;ld; itf;fyhk;.
(b) khztHfspd; gbg;gJ mtrpak; Vnddpy;.
3. MrphpaH nra;jpj;jhs;fis gbg;gJ mtrpak;. Vnddpy;>
(a) khztHfspd; kPJ rhpahd jhf;fj;ij Vw;gLj;jyhk;
(b) mj;jpahtrpkhd tp\aq;fis khztHfSf;F ju KbAk;
4. Mrphpah; jpde;NjhWk; khjhe;jpu/thuhe;jpu ntsPaPLfis (Periodical)
gbg;gJ Njit> Vnddpy;.
(a) mtUf;F nghOJNghf;fhf mikAk;
(b) rkPgfhkyhf tp\aq;fis mwpe;J nfhs;syhk;
5. glk; Nghl;L tpthpj;jy; Njit> Vnddpy;
(a) Foe;ijfs; glq;fspy; Mh;tk; fhl;Lth;
(b) ghlj;ij Foe;ijfs; vspjpy; Ghpe;J nfhs;th;

6. RUf;fkhd ghlf;Fwpg;G> jahhpf;f Ntz;Lk;> Vnddpy;
 - (a) Nkyhsh; vt;tst fw;gpj;jy; vt;thW epfo;e;Js;sJ
 - (b) Mrphpah; vij> vg;gb> vt;tsT fw;gpf;f Ntz;Lk;

vd;gij mwpayhk;

7. khzth;fspkUe;J Kbe;j msT mjpfkhd tpilfis ngw Ntz;Lk; Vnddpy;
 - (a) khzth;fs; tFg;gpy; Mh;tj;Jld; <LgLth;
 - (a) khzth;fis kjpg;gPL nra;a cjTk;

8. khzth;fSf;F tPl;L Ntiy nfhLf;fg;gl Ntz;Ltid; mtrpak;
 - (a) tpisah;by; nghOij Nghf;fhky; ,Uj;jy;
 - (b) fw;wypy; khzth;fs; gapw;rp ngw

9. ghlg;nghUs; md;whl tho;f;ifAld; njhIh;GgLj;j Ntz;bajpd; mtrpak;
 - (a) ghlg;nghUs; tho;f;iff;F gad;glyhk;
 - (b) glg;nghUs; gad; cs;sjhf njhpAk;

10. mrphpaUf;F ghIk; elj;Jk; Kiwfs; mtrpak; Njit> Vnddpy;>
 - (a) Mrphpah; jdJ gzpia rpwg;ghf nra;jplyhk;
 - (b) khzth;fspd; taJ epiyiag; Ghpe;J ghIk;

11. Nghjid khzth;fspd; taij nghWj;J miktJ mtrpak; Vnddpy;
 - (a) mJ MrphpaUf;F tripahapUf;Fk;
 - (b) Ez;zwpT tsh;r;rp taij nghWj;jJ

12. mrphpah; tpisahl;Lfspy; jPtukhf <Lgl Ntz;bajd; mtrpak;
 (a) Mrphpah; ed;whf tpisahlyhk;
 (b) Mrphpah; khzth;fspd; tpisahl;Ljpwid rhpahf
 kjpg;gplyhk;
13. Mrphpauhd gpd; Foe;ij cstpay; mwpT mtrpak; Vnddpy;>
 (a) khzth;fSf;F ,dpatuhf Mfyhk;
 (b) Mrphpah; khzh;fis Ghpe;J nfhs;syhk;
14. Foe;ijfSf;F jha;njhopapy; fw;gpj;jy; mtrpak;> Vnddpy;
 (a) khzth;fs; ghlij;ij vspjpy; Ghpe;Jnfhs;syhk;
 (b) jha;nkhop ekJ nkhop vd;gjhy;
15. rhpahd Neuj;jpy; gs;spf;F nrd;W tUtjy; mtrpak; Vnddpy;
 (a) ghl ml;ltiz rhpahf elf;F
 (a) gs;sp eph;thfdfs; jpUg;jp mila
16. FO gphpj;jy; khzth;fspd; Ez;zwpT mbg;gilia
 nra;ag;gl;l Ntz;LjyPd; mtrpak;
 (a) gapw;Wtpj;jy; jpwk;gl eilngWjy;
 (b) khzth;fs; xUtNuhL xUth; rz;il Nghlhky; ,Uf;f
17. fw;gpj;jyPd; FwPf;Nfhs;fis Mrphpah; mwpe;jpUf;f
 Ntz;bajd; mtrpak;
 (a) Mrphpah; fy;tpapd; FwPf;Nfhs;fis mwpa
 (b) Mrphpah; khzth;fs; jk; FwPf;Nfhis mila cjTjy;
18. tPl;Lg;ghlij;ij md;whlk; jpUj;j Ntz;bajd; mtrpak;
 (a) khzth;fspd; nray;jpwikfis mwpe;jpl
 (a) khzth;fs; mt;tg;NghJ jk; Fiwfis fisa

19. jpde;NjhWk; fzpjk; gbf;f Ntz;bajd; mtrpak;
 (a) fzf;F md;whl thof;iff;F cjTfpwJ
 (b) mbf;fb gapw;rpahy; fzpjk; epidtpy; ,Uj;jg;gLfpwJ.
20. khzth; - rq;fk; mikg;gjd; Kf;fpaj;Jtk;
 (a) khzth; fl;Lg;ghl;Lld; ,Uf;f
 (b) khzth;fis vjph;fhyj;jpw;F jahh; nra;a
21. Ngr;R> fl;Liu> fij> Nghl;bfsdpd; mtrpak;
 (a) khzth;fspd; Ez;zwpit mtrpak;
 (b) khzth;fis vg;NghJk; RWRWg;ghf itf;f
22. khzth;fSf;F fiy epfo;r;rpfs; Njit> Vnddpy;
 (a) gs;sp RWRWg;ghf fhzg;gLk;
 (b) khzth;fspd; czh;Tfis tsh;f;f cjTtjhy;
23. khzth;fis Jg;GuT gzpapy; <LgLj;Jtjhy;
 (a) gs;sp J}a;ikahf ,Uf;fpw
 (b) Rfhjhuj;jpd; Kf;fpaj;Jtj;ij khzth;fs; czu
 cjTfpwJ.
24. khzth;fspd; njhlh; gzpiag; gjpNtL itg;gJ mtrpak;
 Vnddpy;
 (a) khzth;fis rhpahf kjpg;gPL nra;a
 (b) khzth;fs; jk; gzpia rhpahd fhyj;jpy; Kbf;f
25. vy;yh khzth;fSf;F midj;J ghlq;fspYk; rkkhd mwpi
 ngw;wpuhky; ,Uf;f fhuzk;
 (a) vy;yh khzth;fSf;Fk; xNu khjphp Mh;tk; ,y;iy
 (b) vy;yh ghlq;fSf;Fk; xNu khjphp fbdkhf ,y;iy

26. khzth;fs; ghpR toq;Ftjd; mtrpak;
 (a) ghpR ngwhj khzth;fSk; ghpR ngw fLikahf ciof;f
 (b) ghpR ngw;w khzth;fs; NkYk; fbdkhf ciof;f>
 Cf;Ftpf;f
27. khzth;fs; r%f epfo;r;rpfs;py; gq;F nfhs;tjd; Njit
 (a) r%f Kd;Ndw;wk; milfpwJ.
 (b) khzth;fspd; r%f gz;Gfs; tsh;r;rp milfpwJ.
28. rKjhaj;jpy; gs;spfs; mtrpak; Njit> Vnddpy;
 (a) rKjhak; Kd;Ndhw;wk; milfpwJ.
 (b) Foe;ijfs; gbf;fyhk;.

gFjp – V

**fPNo rpy epiwtpy;yhj thf;fpaq;fs; nfhLf;fg;gl;Ls;sd. mtw;iw
 G+h;j;jp nra;a rpy fUj;Jf;fs; nfhLf;fg;gl;Ls;sd. Nfs;tpf; Fwpapl;L
 ck; fUj;ij a, b, c my;yJ d- ia tl;;lkpl;L fhl;ITk;.**

1. vjph;fhyj;jpy; ck; Mrphpah; gzp ,ij ek;gpAs;sJ.
 (a) kj;jpa muR
 (b) Mrphpah;fs;
 (c) khepy muR
 (d) cs;Sh;
2. ePh; Mrphpah; njhopYf;F te;jjd; fhuzk;
 (a) ck; je;ij Mrphpauh ,Ue;jjhy;
 (b) ePh; fy;Y}hpapy; fw;gpf;f tha;g;G cz;L
 (c) ePh; Mrphpauh tpUk;GtPh;
 (d) NtW Ntiy fpilf;fhjJ

3. ePh; Mrphpauhf KbT nra;jJ
 (a) NtW Ntiy Njb Njhy;tp mile;jTld;
 (a) fy;Y}hpapy; tha:g;G fpilf;fhjjhy;
 (c) fy;Y}hpapy; Njhy;tp me;j gbg;ig njhlu Kbahjjhy;
 (d) Mrphpauhf jFe;j jFjpia ngw;Ws;sjhy;
4. Mrphpah; njhopy; gw;wp ck; fUj;J - mJ
 (a) kpfr; rpwe;jJ
 (b) topapy;yhjNghJ Vw;f Ntz;baJ
 (c) tpl;Lg;Nghf cfe;jJ
 (d) ,ijtpl ve;j NtiyAk; Nky;
5. ,e;j Gj;jfq;fspy; vijg; gbf;f ePh; tpUk;GtPh;
 (a) Ch;trp
 (b) nfhjhs;
 (c) fw;gpf;Fk; Kiwfs;
 (d) mwptpay; fz;Lgpbg;Gfs;
6. ePh; gzpGhptjd; fhuzk;
 (a) ck;Kila gzp ck; fpuhkj;jpy; cs;sjhy;
 (b) ck; FLk;gj;ij Mjhpff;f NtW topapy;iy
 (c) ck; gzpia ePh; urpf;fpwPh;
 (d) nghOij Nghf;f
7. ck; Xa;T Neuj;ij nrytpLk; Kiw
 (a) Rw;Wyh nry;Yjy;
 (b) tPl;L Ntiyfs;
 (c) Ch;tk;G NgRjy;
 (d) jhNd gbj;jy;

8. ePh; gzpGhptjd; kw;nwhU fhuzk;
 (a) gzpGhpa eph;g;ge;jk; cs;sJ
 (b) ck; ez;gh;fs; gzpGhptjhy;
 (c) fy;tpapd; Nehf;fk; gzpahw;WtNj
 (d) fy;tpiag; gug;g gbf;f Mh;tKs;sJ.
9. fPo;f;fz;l NtiyfSf;F ahUila cjtpia ehLtPh;?
 (a) rhpj;jpu gpurpj;jp ngw;w ,lq;fSf;F nry;y
 (b) fpuhk rPh;jpUj;jk;
 (c) ,uTg; gs;sp
 (d) FLk;gf; fl;Lg;ghL
10. fPo;f;fz;l epfo;r;rpfsfy; ckf;F kpf;g; gpbj;jJ
 (a) ngw;Nwhh;fis re;jpj;jy;
 (b) tPl;L Ntiyfis rhp nrajy;
 (c) gs;sp fl;bl epjp t#ypj;jy;
11. gs;sp gzpf;Fgpd; fPo;f;fz;ltw;wpy; ePh; nra;tJ
 (a) filf;F nry;Yjy;
 (b) kUj;Jthplk; nry;Yjy;
 (c) jdpg;gapw;rp mspj;jy;
 (d) tPl;bYs;s Foe;ijfSf;F gbg;G nrhy;yp jUjy;
12. fPo;f;fz;l ,jo;fsfy; vij gbf;f tpUk;GtPh;
 (a) re;jkhkh
 (b) MNuhf;fpah
 (c) jh;kNahfh
 (d) `pe;J];jhd;