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Review of Related Literature
Chapter II

Review of Related Literatures

2.1 INTRODUCTION

The experiences of human lives of modern era are preserved in the form of books, documents and various testimonials. Every human being is on the process of joining some knowledge with the experiences of his/her ancestors. Practically man builds his own knowledge upon the accumulated and recorded or previously gained knowledge. In a research work, therefore, it is very essential to know about this vast knowledge on relevant and specific areas.

A literature review is an evaluative report of studies found in the literature related to the selected area. This process is based on the assumption that knowledge accumulates and that people learn from and build on what others have done. Scientific research is a collective effort of many researchers who share their results with one another and who pursue knowledge as a community. It is said that today’s studies build on those of yesterday. Hence, researchers need studies to compare, replicate, or criticize them to unveil their weaknesses or strengths. As Fox (1969)\(^1\) pointed out, it becomes part of the accumulated knowledge in the field and so contributes to thinking and research that follow. Fink (2005)\(^2\) defined this process as “A research literature review is a systematic, explicit, and reproducible method for identifying, evaluating and synthesizing the existing body of completed and recorded work produced by researchers, scholars and practitioners”. In this section, the researcher identifies and analyses the literature and information related to what is to be or has been studied.

Best and Kahn (2006)\(^3\), in their book ‘Research in Education’ mentioned that, “Review of the literature and research provides a background for the development of the present study and brings - the reader up to date since good research is based upon everything that is known about problem, this part of the report gives evidence of the investigator's knowledge of the field”. The theoretical knowledge acquired from the literature review enables the researcher to start his research with confidence and skill. In research work the review of related studies is, therefore, very essential.
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Review of the related studies is also helps to see what measures and approaches have been used in previous studies, and what are the strengths and weaknesses of previous designs. In this context Mouly (1964) states, “Survey of related literature avoids the risk of duplication, provides theories, ideas, explanations or hypotheses valuable in formulating the problem and contributes to the general scholarship of the investigator.”

2.1.1 The Objectives of the Review of Related Literature in Present Study

Following were the chief objectives, set by the researcher, for the review of the related study:

➢ To know about the previous studies conducted in India as well as in foreign countries by various investigators on Achievement Motivation, Test Anxiety and Mental Health in relation to the Academic Achievement of Students.
➢ To identify various educational fields related to the mentioned variables through the analysis of different research conducted in relation to the present investigation.
➢ To know about the tools utilized in previous studies for the measurement of Achievement Motivation, Test Anxiety and Mental Health.
➢ To study the previous commentaries on the effectiveness of independent variables at different levels of dependent variable.
➢ To study about different statistical techniques utilized for the analysis of different researches.
➢ To know about the findings of various researches, and
➢ To make a conclusion on the basis of this review of related literatures and find out the research gap, if any.

2.2 REVIEW OF RELATED STUDIES AND LITERATURES

The investigator reviewed various research journals, research abstracts, academic and educational as well as multi-disciplinary journals, Ph. D. and M. Phil. theses, books, monographs, presentation papers of various seminars, reports and others to collect the related studies on academic achievement and achievement motivation and presented his reviews as following orders:

➢ Achievement Motivation and Academic Achievement,
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- Test Anxiety and Academic Achievement,
- Mental Health and Academic Achievement.

2.2.1 Studies Reviewed on Achievement Motivation and Academic Achievement

Research on achievement and motivation has a long and distinguished history. In fact, achievement motivation concepts were present at the dawn of psychology as a scientific discipline, when James (1890) offered speculation about how achievement strivings are linked to self-evaluation. Soon thereafter, an assortment of research studies appeared that focused on achievement relevant issues such as the effect of intentions on perseverance and the effect of increasing difficulty on task performance (Hillgruber, 1912). However, truly programmatic empirical work on achievement motivation began in Kurt Lewin's laboratory with the investigation of aspiration-setting behavior, and formal models of achievement motivation have been present since Lewin and colleagues proposed their theory of “resultant valence” to account for aspiration processes. A decade later, the central place of research on achievement motivation in scientific psychology was solidified by McClelland, Atkinson, and colleagues' work on need for achievement. From this time onward, the collective corpus of research on achievement and motivation has been referred to as “the achievement motivation literature”. McClelland, et al. (1953) documented very well the achievement motive in his classic landmark book “The Achievement Motive”. From then on, achievement motivation established as a Bona Fide construct, creative investigations began to examine correlations between the motive and many other phenomena. Hence the present researcher presented his review work on achievement motivation and academic achievement in two sub-heading as –

- Indian Studies on Achievement Motivation and Academic Achievement, and
- Foreign Studies on Achievement Motivation and Academic Achievement.

2.2.1.1 Indian Studies on Achievement Motivation and Academic Achievement

Barial R. N. P. (1966) found almost zero correlation between scholastic achievement and achievement motivation of students belonging to various social class and socio-economic status. Similarly, Deka, U. (1985) found no relation between school failure and achievement motivation.

Hirunval (1980)\textsuperscript{15} concluded that boys were more academically motivated than girls and rural pupils were more academically motivated than the urban pupil. Girija, P. R. (1980)\textsuperscript{16} revealed that achievement motivation was a potential contributors to academic achievement. Sharma, P. (1981)\textsuperscript{17} found that poor academic motivation contributed to underachievement.

Gupta, P. L. (1983)\textsuperscript{18}, found a significant interaction effect in academic achievement and achievement motivation both in the case of boys as well as girls. Umayaparvathi, S. (1983)\textsuperscript{19} showed a significant difference between the high and low attainers in terms of their achievement motivation. In the studies conducted by Deshpande, A. S. (1984)\textsuperscript{20} and Sween (1984)\textsuperscript{21}, achievement motivation was found to be higher in the students of the high achieving schools than those of the low achieving schools.

Ghosh, G. P. (1985)\textsuperscript{22} conducted his study of the achievement of the students in chemistry and found a positive correlation between the achievement in chemistry and academic motivation; and concluded that the scores in achievement in chemistry could be predicted from the scores in academic motivation. Raghava, G. (1985)\textsuperscript{23} also revealed that the Achievement Motivation Development course resulted in a positive gain in the immediate performance of students; and no sex differences were seen in achievement motivation and academic performance.

Koul, L. (1986)\textsuperscript{24} conducted his research to study and compare the effects of mastery learning strategies on achievement motivation and test anxiety of socially disadvantaged students and found that achievement motivation is a facilitating factor while test anxiety is a debilitating factor for achievement. In a similar study, conducted by Mansuri, A. R. (1986)\textsuperscript{25} showed that the students of successive grades showed successive advancement in achievement motivation; the students with low anxiety level had more achievement motivation than those with high anxiety level; and the students having good general ability also had a high level of achievement motivation.
Mehna, V. H. (1986) conducted a stepwise multiple regression analysis in her study, which revealed that motivation for learning was significant predictor of achievement of class IX students in general science for both boys and girls and the significant predictor variables for achievement in physics, biology and also in chemistry were motivation for learning physics, biology and chemistry respectively. But, in contrary of the research of Mehna, Sontakey, V. V. (1986), explored that the achievement motivation was a poor predictor of achievement in biological as well as natural sciences. High achievers and low achievers did not differ significantly on achievement motivation; and the achievement motivation had positive association with achievement in biological sciences as well as in natural sciences. The correlation between achievement motivation and mathematics achievement were found significant; and the difference in mathematics achievement was significant for low and high groups on achievement motivation in case of Delhi schools but in case of Haryana schools it was not significant in the study conducted by Singh, R. (1986).

Tripathi, R. C. (1986) explored that the boys' scores in achievement motivation appeared to be significantly related with Hindi achievement; achievement motivation made a remarkable contribution to the variance in the achievement; and achievement motivation of boys and girls was highly correlated with achievement.

Gandhi, P. (1987) studied achievement motivation in relation to academic achievement of boys and girls and found that (i) there was no significant difference in boys and girls with respect to academic achievement; (ii) high school girls were found to have significantly higher motivation than high school boys; (iii) academic motivation was significantly and positively related to academic achievement of high school students of both sexes. Mehta, C. P. (1987) investigated into the effect of some psychological factors on school achievement and found that (i) the students who had high achievement motivation achieved higher school achievement; and (ii) the students having high achievement motivation achieved high in school achievement.

Mian, Shamshada (1988) conducted a comparative study on intelligence, neuroticism, scholastic achievement and need achievement of boys and girls and revealed that (i) girls were superior to boys in scholastic achievement; on the other hand boys compared to girls had a higher score in achievement motivation. Konwar, L. N. (1989) explored that (i) there was no significant difference in the levels of personal achievement motivation of boys and girls, and of tribal and non-tribal; (ii)
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The mean personal achievement motivation scores of the pupils from Government, Provincialized and Missionary schools were found to be higher than those of the ad hoc private schools.

Shashi, Mohan (1991) mainly found that (i) a few aspects of motivation showed a significant correlation to some aspects of achievement in English. (ii) Public school students mean scores on all the variables of the study were higher than those of government and all school students, whereas, Mishra (1992) found a significant effect of achievement motivation on academic achievement of students. The study also revealed that achievement motivation had to play a vital role on the achievement of girls than that of boys. In a similar study conducted by Verma, Jagodish (1992) explored that (i) Sex had a direct bearing upon achievement motivation and anxiety. (ii) Age levels had little impact achievement motivation and anxiety. (iii) Parents education had influenced in shaping the achievement motivation of high school students, but it had no impact on learning style and anxiety.

Philip's (1993) study documented that achievement motivation has Low relationship with the achievement of students. The studies made by Singh and Broota (1995) showed that the students having high level of academic motivation were found to have better study habits than students with average and low academic motivation. High test anxiety group had poorer study habits than their other counterparts.

Anitha (1996) and Suja (1996) explored that achievement motivation has a determining influence on the achievement of students. Both of them argued that motivation was an essential factor for achievement. Promod (1996) and Verma, Sheikh and Sangita (1997) found achievement motivation among class XI students to be related to achievement.

Chattopadhayay (1998) found that the academic achievement and motivational intensity of SC students was lower than the Non-SC students. Dev (1998) reviewed research results from 14 studies and showed that intrinsic motivation strongly related to academic achievement in students with LD. Salim, Kumar, C. (1998) found that achievement in biology was dependent on achievement motivation. Achievement motivation, sex and locale had shown a combined effect on achievement.
Jayalekshmi (2000)46 conducted a study of achievement facilitating variables affecting the problem solving ability of girls in higher secondary schools of Kerala. The coefficient of correlation between achievement motivation and achievement was found to be positively significant for the total sample. Similarly, Alam, M. M. (2001)47 found a positive relationship between achievement motivation and academic achievement of Muslim and non-Muslim children. The academic achievement of non-Muslim children has been found superior in comparison to their Muslim counterparts. On the measure of achievement motivation, Non-Muslim children are found to be superior to Muslim children.

The research study of Ellekkakumar, B. and Elankathirselvan, N. (2001)48 explored that (i) the mean scores of achievement related motivation was higher for girls than boys; (ii) there was no significant difference between the students studying in Tamil medium and the students studying in English medium; (iii) there was no significant difference in achievement mean scores in Physics between (a) Boys and Girls, and (b) Tamil medium and English medium; and (iv) the positive correlations were found between the achievement related motivation and achievement marks in Physics.

Mumthas (2001)49 found that achievement motivation in mathematics is a significant predictor of achievement in Mathematics. Krishnamoorthy (2003)50 also found that relationship between achievement motivation and academic achievement (r=0.41) are significant and positive.

Rani, S. and Kaushik, N. (2005)51 documented that (i) there was no significant difference between girls and boys in achievement motivation; and (ii) achievement motivation was positively correlated with child’s achievement and positive perception of parent. Bansal, S., et al. (2006)52 showed that high achievers with a good quality of home environment possessed high level of achievement motivation.

Iyer, Uma J. and Kamalanabhan, T. J. (2006)53 indicated a significant correlation was existed between consistently good performance and achievement motivation. But Jansari, A. (2006)54 revealed that there was no significant relationship between educational achievement and need for achievement. There was, also, no difference between high and low educational achievers with relation to their
achievement motivation. Vaidya, S. A. (2006)\textsuperscript{55} found a positive correlation was found between educational achievement and achievement motivation of the students.

Nagarathanamma and Rao (2007)\textsuperscript{56} designed a study to see the difference between adolescent boys and girls on achievement motivation. They found no significant difference between boys and girls with regard to achievement motivation level.

Adsul, R. K. and Kamble, V. (2008)\textsuperscript{57} showed that Forward caste and Scheduled caste group students had a high achievement motivation while Other Backward and Nomadic Tribe group students had an average level achievement motivation. As well as male students having a high achievement motivation while female students having a below average level of achievement motivation.

Ahmad, S. and Nigam, R. S. (2008)\textsuperscript{58} studied the effect of motivation on academic achievement of aided and private higher secondary students. The result suggested that the motivation is significantly related to academic achievement of aided and private higher secondary students. They also showed that the motivation affects academic achievement of aided and private higher secondary students. Pandey (2008)\textsuperscript{59} also explored a positive correlation between achievement motivation and academic achievement.

Noorjahan and Wajiha (2009)\textsuperscript{60} documented that achievement motivation significantly predict academic achievement. Similarly, Sharma, E. (2009)\textsuperscript{61} conducted her research, using Deo-Mohan’s Achievement Motivation (D-ACM) Scale, and explored that there was significant contribution of achievement motivation in predicting academic achievement of adolescents.

David & Sumod (2011)\textsuperscript{62} reported that achievement motivation and reading comprehension in English are significantly positive related. The strongest predictor of academic performance found in the study, conducted by Garg, Mamta (2011)\textsuperscript{63}, was achievement motivation. She observed that overall academic performance was higher when there was a higher overall achievement motivation. Singh (2011)\textsuperscript{64} found no significant difference in academic achievement motivation between aided and non-aided high school pupils. But, Rathee and Singh (2011)\textsuperscript{65} provided evidence that high achievement motivation is a vital factor that distinguishes high level achievers.
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Deswal & Rani (2012)\textsuperscript{66} found that male adolescents were possessing higher level of achievement motivation than female adolescents. Gupta, M.; Devi, M. and Parija, P. (2012)\textsuperscript{67} found a significant difference in academic achievement among adolescents with high and low level of achievement motivation in relation to gender, locality and type of schools. It was found that male & female adolescents with high achievement motivation showed better academic achievement than their counterparts. Tiwari (2012)\textsuperscript{68} found that (i) the students residing in urban and rural areas of Ahmedabad having low achievement motivation differ significantly in their mathematical achievement; (ii) the boys and girls having high achievement motivation do not differ significantly in their mathematical achievement; and (iii) the boys and girls having low achievement motivation differ significantly in their mathematical achievement.

2.2.1.2 Foreign Studies on Achievement Motivation and Academic Achievement

Atkinson and Feather (1966)\textsuperscript{69} postulated that people whose motivation to achieve success was greater than their motivation to avoid failure would be more motivated to perform in achievement situations. Bank, C. and Finlapson, W. (1980)\textsuperscript{70} found that successful students had significantly higher motivation for achievement than unsuccessful students.

Castenell, L. A. (1983)\textsuperscript{71} indicated that there were significant differences on general measures of achievement motivation as well as on the area-specific measure. Elias, H. and Long, A. B. (1984)\textsuperscript{72} made a correlational study of achievement motivation and pupils' performance. The results showed that achievement motivation correlated highly with performance in the examination. Wagner, Stephan and Irwin (1985)\textsuperscript{73} used academic performance as an indicator variable and showed that non-failing students had higher levels of achievement motivation than failing students because they maintained a good opinion about themselves.

In one of his studies, Ali, M. R. (1988)\textsuperscript{74} explored that the students who scored high on achievement motivation did better on academic test. Similarly, Lee (1989)\textsuperscript{75} explored that there existed positive correlation between achievement motivation and science achievement, whereas, Gottfried (1990)\textsuperscript{76} documented that academic intrinsic motivation in the early elementary years may have profound implications for initial and future school success. Students who are more intrinsically
than extrinsically motivated fare better and students who are not motivated to engage in learning are unlikely to succeed. Suciati (1990)\textsuperscript{77} and Alice (1991)\textsuperscript{78} investigated motivation as a predictor of achievement and also exhibited a positive and significant correlation between motivation and achievement. Velna (1991)\textsuperscript{79} found that there was no significant difference in the relationship between achievement motivation scores and the grade point averages and no significant difference in the relationship among the variables in case of boys and girls.

Boggiano, et al. (1992)\textsuperscript{80} revealed that academic motivation positively influenced academic performance. Keith and Coot (1992)\textsuperscript{81} found a stronger indirect effect of motivation than direct effects on achievement. Schultz (1993)\textsuperscript{82} indicated that achievement motivation was a significant mediator of academic performance among minority children, independent of intellectual ability. Wigzell and Al-Ansari (1993)\textsuperscript{83} presented that the problem of failure and underachievement in foreign language learning is associated with poor motivation rather than lack of aptitude. Besides, Oxford, et al. (1993)\textsuperscript{84} and Aida (1994)\textsuperscript{85} reported that female learners were more motivated and performed more highly than male learners in their achievement perform.

Chambers (1994)\textsuperscript{86} reported that after becoming motivated to be succeed, students showed dramatic and rapid improvement. Such motivational changes were seen as stemming ultimately from reasons intrinsic to the individual student. Graham (1994)\textsuperscript{87} reviewed the literature and concluded that the African Americans were found to be more externally motivated than European Americans. The researcher well documented that girls had higher achievement motivation.

Abouserie (1995)\textsuperscript{88} pointed out that a significant positive correlation between students’ achievement motivation and their scores on comprehension learning, meaning orientation, which suggested that students with high achievement motivation are likely to adopt deep and elaborative approaches in their achievement. Fortier et al. (1995)\textsuperscript{89} found that perceived academic competence and perceived academic self-determination positively influenced autonomous academic motivation, which in turn had a positive impact on school performance.

Karsenti and Thibert (1995)\textsuperscript{90} reported the types of motivation related to school achievement. The results of their study demonstrated that academic motivation
is significantly related to grade point average. They also revealed that the relationship between grade point average and motivation emerged differently for boys and girls, as for younger and older students. Niebuhr (1995)\textsuperscript{91} completed a study examining the relationship of individual motivation and its effect on academic achievement. Findings of this study indicated that student motivation showed no significant effect on the academic achievement.

Lucking and Manning (1996)\textsuperscript{92} examined factors contributing to low academic achievement among young adolescents. They identified the factors contributing to low achievement, such as lack of motivation, disenchantment with schooling, and anxiety concerning peers. Similarly, Albaili (1997)\textsuperscript{93} showed motivation as the most powerful discriminating factor separating the students in terms of their achievement. McLean (1997)\textsuperscript{94} found that high-achievers had significantly more positive scores than low-achievers on motivation for schooling and instructional mastery.

St. Laurent et al. (1997)\textsuperscript{95} analyzed the interrelations between achievement and personal-motivational variables in students at risk of school failure and students not at risk. Results showed that students with and without academic problems are different with respect to certain motivational affective variables. Stipek and Ryan (1997)\textsuperscript{96} examined the influences of several motivational variables on scholastic achievement. They found that children’s cognitive skills were far better predictors of achievement than motivation. They also found a weak relationship between motivation and young children’s achievement.

Goldberg and Cornell (1998)\textsuperscript{97} revealed that intrinsic motivation did not directly influence subsequent achievement. They investigated on the participants in the Learning Outcomes Project conducted by the National Research Centre of the Gifted and Talented. Study instruments were administered early in the school year and again near the conclusion of the school year. Structural equation modeling indicated that intrinsic motivation influenced perceived competence which influenced subsequent academic achievement.

Atkinson (1999)\textsuperscript{98} showed a percentage of students will work hard to achieve a task they do not enjoy, solely to maintain their high grade point average or high class rank. This reflects back on the student’s attitude toward success. Berry and Plecha
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(1999) examined the relationships between academic performance, study ability and motivation among community college students and indicated the relationship between level of motivation and academic performance fluctuated throughout the semester. They also explored that the confident and enthusiastic students perform better on the examination than students who express feelings of anxiety or worry.

Accordino, D. B. et al. (2000) examined the relationship of perfectionism with measures of achievement and achievement motivation and mental health aspects of depression and self-esteem in high school students. Results indicated that students' personal standards were significant predictors of academic achievement as well as achievement motivation.

Onwuegbuzie, et al. (2001) reported that students’ expectation of their overall achievement was the best predictor for overall academic success. They also found that individuals with a strong motive to achieve generally see themselves as highly capable individuals.

Ooi, H. P. (2001) conducted examined the relationship between academic self-concept, achievement motivation and academic attainment among different ethnic group student in a Malaysian university. He found that there were significant differences in the achievement motivation between ethnic groups and field of study.

Broussard (2002) stated that higher levels of mastery motivation are found to be related to high achievement in third graders and first graders. Zenzen, T. G. (2002) conducted an experimental study on achievement motivation. This study found no relationship between achievement motivation, as measured by Atkinson’s risk taking model of achievement, and student performance, as measured by project completion.

Diaz, A. L. (2003) conducted a research on personal, familial, and academic factors affecting low achievement in secondary school. The results of this research made clear that the direct influence of motivation affected academic achievement.

Dowson, M. et al. (2004) revealed that motivational goals and self-concept appeared to work together in a causally definable manner to influence students’ academic achievement. In their study, Garrison and Broussard (2004) found that higher levels of mastery motivation and judgment motivation were related to academic achievement in elementary school children.
Rusillo, M. T. C. and Arias, P. F. C. (2004)\textsuperscript{108} showed the existence of gender difference in achievement motivation under consideration, with girls showing lower levels of extrinsic motivation, taking more responsibility for their failures, using information processing strategies more extensively, and getting better marks in Language, Arts. Gender differences were not found in intrinsic motivation, in success related attributions and in performance attained in Mathematics. Wolters (2004)\textsuperscript{109}, in his study, showed that the different components of intrinsic motivation were related to each other and to students’ motivation, cognitive engagement, and Academic Achievement.

Meece, Glienke, & Burg, (2006)\textsuperscript{110} demonstrated that boys were less positive motivational orientations which was the crucial determinants of the explanation of their underachievement. Lai, P. Y. et al. (2006)\textsuperscript{111} conducted a study on intrinsic motivation, achievement goals and study strategies. The results showed that the three subscales of intrinsic motivation were all positively and significantly related with deep strategy but not with surface strategy. Academic achievement was positively and significantly related with deep but not surface strategy. Skaalvik and Skaalvik (2006)\textsuperscript{112} revealed significant relationship between academic performance and motivation.

Akbas and Kan (2007)\textsuperscript{113} have concluded that students’ achievement motivation has positive effects upon their scores and subject’s achievement motivation enables them to be more organized in their studies. By means of analyses of variance, Roebken, Heinke (2007)\textsuperscript{114} analyzed how the different goal orientation relates to student satisfaction, academic achievement, and academic engagement. The investigator’s results supported the notion that students pursuing both mastery and performance goals are more satisfied with their academic experience, show a higher degree of academic engagement and achieve better grades.

Covington, M. V. (2007)\textsuperscript{115} examined the level of motivation, factors affecting it, and influences of motivation on the larger process of achievement. It was concluded that the relationship between motives and performance is very complex, yet it continues to be important in understanding what improvements can be made in the higher education system.
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Kato et al. (2007)\textsuperscript{116} made a study which reported on the motivation of learners of Japanese in four universities. They found three out of four universities that did not show significant differences in the degree of motivation within an academic year. The outcomes were varied depending on the universities in comparing motivation among students enrolled in different course levels. Positive motivation and anxiety were found to be the best predictors of academic achievement.

Tella, A. (2007)\textsuperscript{117} studied on the impact of motivation on student’s academic achievement and learning outcomes in mathematics among secondary school students in Nigeria. Results showed that gender difference were significant when impact of motivation on academic achievement was compared in male and female students. Other results also indicated significant differences when extent of motivation was taken as variable of interest on academic achievement in mathematics based on the degree of their motivation.

In the study conducted by Bernardo (2008)\textsuperscript{118}, mastery and performance goals were positively associated with academic achievement, personal performance standards, and parent-oriented achievement motivation. In a meta-analysis of the relationship between achievement motivation and performance a significant correlation was found. Shams, Meenaz (2008)\textsuperscript{119} illustrated a higher degree of extrinsic motivational goals attached to the student’s language learning outcomes and future achievements comparable to intrinsic ones, irrespective of the gender. The results emphasized girls to have a slightly higher degree of motivation comparable to the boys.

Olani, Aboma (2009)\textsuperscript{120} revealed that prior academic achievement measures and achievement motivation and self-efficacy in combination accounted for 17% of the variance in students’ university grade average point scores. The sole contribution of achievement motivation was 4%. Relatively a higher percentage of variance accounted for was found for females (34%) than males (15%). Tapper, J. et al. (2009)\textsuperscript{121} studied on relationships between motivation and student performance in a technology-rich classroom environment and analyzing video data, they surprisingly got positive student outcomes resulted from increased motivation through active and mathematically meaningful participation in the classroom.
Caldwell, T and Obasi, E. M. (2010)\textsuperscript{122} examined the achievement motivation, the value of education, cultural mistrust, and academic performance in 202 African American college students. The results indicated that a student’s value of education moderates the relationship between achievement motivation and academic performance. Zheng, Ying (2010)\textsuperscript{123} explored that attitude toward the learning situation and integrative orientation were two strong indicators of motivation, which in turn influenced achievement and confidence.

Awan, R., et al. (2011)\textsuperscript{124} revealed that achievement motivation is significantly related to academic achievement. Significant gender differences were discovered which were in favor of girls, male students are lagging behind in their level of motivation and achievement. They concluded that the achievement motivation contributes to enhance achievement level. Ergene (2011)\textsuperscript{125} studied the relationships among study habits, test anxiety, achievement motivation, and academic success in a Turkish tenth grade high school. No correlation was observed between achievement motivation and academic success.

Ahmad, I. and Rana, S. (2012)\textsuperscript{126} conducted their study to find how emotions and motivation influence academic performance of college students. They found that the motivation styles; approach or avoidance did not significantly contribute to academic achievement. They further concluded that the role of motivation as mediating variable interact with emotions in producing specific educational outcomes.

### 2.2.2 Studies Reviewed on Test Anxiety and Academic Achievement

Research on test anxiety has a long and fruitful history. The first empirical investigation of test anxiety, as cited by Lawson (2006)\textsuperscript{127}, was published in 1914 by Folin, Demis, and Smillie. Alexander Luria (1932)\textsuperscript{128}, a noted Russian physiologist, was the first one to call attention to individual differences in the emotional reactions experienced by students in a test situation and discussed test anxiety in depth. The literature on test anxiety only began to develop when instruments were created to measure test anxiety in the 1930s in the studies conducted by Brown (1938)\textsuperscript{129} and Neumann (1933)\textsuperscript{130}. But the concept of test anxiety, as a psychological construct, began to be investigated under its own name in 1952, when Sarason and Mandler\textsuperscript{131} published a series of studies on test
anxiety and how it relates to performance, as well as developed an instrument to assess individual differences in test anxiety in adults, the Test Anxiety Questionnaire. Their efforts made it possible to start the journey of test anxiety research in psychological and educational field. Hence, the widespread interest created by it was responsible for the view expressed by Pekrun and colleague that “1952 was the year in which test anxiety research was born” (Pekrun & Stober, 2004, p. 288).

The present investigator intended to present his review work concerning Test anxiety and Academic Achievement in two sub-heading as –

- Indian Studies on Test Anxiety and Academic Achievement, and
- Foreign Studies on Test Anxiety and Academic Achievement.

2.2.2.1 Review of Indian Studies on Test Anxiety and Academic Achievement

In India, The first attempt to understand the antecedents of test anxiety in school children was made by Nijhawan in 1972, stimulating a great deal of research in this area. Almost 12 years after this, a first comprehensive review of research on test anxiety in this country was conducted by Sharma and Rao (1984). In their review, they pointed out that the impetus to test anxiety research in India had been provided by the development of test anxiety measures, which started with the development of Hindi and Punjabi versions of the Sarason’s English Test Anxiety Scale of Children (TASC) by Nijhawan (1972). Four years later, Sharma (1988), in an exhaustive review of research on different areas of stress and anxiety, also highlighted some of the problems and issues related to test anxiety research.

In the studies conducted in the 1970s, low achievement motivation was observed to be significantly associated with high test anxiety (Chaudhary, 1971; Singru, 1972 and Choksi, 1975). Dhawan, N. (1982) explored that persistence was significantly and positively related to need for achievement and negatively with anxiety, and that any variance on the persistence scores was partly due to a combination of need for achievement, level of aspiration and anxiety.

In an academic setting, the majority of bivariate studies have reported low negative but significant correlation between test anxiety and academic achievement in the case of both school boys as well as girls (Rahal, 1983). Shanmugasundaram, R. (1983) conducted a study to identify and assess the influence of certain factors on
the academic achievement of undergraduate students. This researcher found that (i) low achievers had more manifest anxiety and more adjustment problems than high achievers; (ii) the rural students had more manifest anxiety than urban students; (iii) manifest anxiety and adjustment problems had a significant negative influence upon academic achievement; and (iv) men students had greater anxiety and more adjustment problems than women students.

Sharma, Parnian, and Spielberger (1983)\textsuperscript{143} compared the test anxiety levels of Iranian and Indian secondary school and college students. The results indicated that the Iranian students had higher levels of test anxiety than their Indian counterparts. Tri-cultural differences in the test anxiety levels among the Iranian, Indian and U.S. student groups were interpreted as some eastern students showing greater anxiety levels.

Verma and Nijhawan (1984)\textsuperscript{144} also observed that on an easy task, at the upper range of intelligence the difference in the performance of high and low test anxious students was not significant under any of the three reinforcement conditions. However, under a low level of intelligence, the performance of high test anxious students was better than that of low test anxious students under praise.

Purandare, V. M. (1984)\textsuperscript{145}, in his Ph. D. thesis, documented that the low anxious subjects were better in performance in the serial verbal learning task as compared to high anxious subjects. Barinder, M. (1985)\textsuperscript{146} studied general anxiety and test anxiety. The main findings of the study were – (i) sex was significantly related to anxiety, both general and test anxiety; (ii) girls exhibited more general anxiety, as well as test anxiety than the boys; (iii) there was positive relationship between general anxiety and test anxiety; and (iv) there was a significant relationship between general anxiety and test anxiety of boys.

Mehrotra, S. (1986)\textsuperscript{147} explored that (i) both for the boys and girls there was an inverse relationship between level of anxiety and academic achievement; and (ii) in general, the girls had a comparatively higher level of anxiety than the boys.

Agarwal and Kaur (1987)\textsuperscript{148} also reported no knowledge of result condition to be most beneficial for high test anxious students. In addition to this finding, they also observed an increasing completeness of knowledge of result to be motivational for
low test anxious students and moderate knowledge of result condition to be best for average test anxious students.

Agarwal, Alka (1989) explored that (i) high achieving orphan children were found to be less anxiety prone but both high and low achieving children living with their parents were anxiety prone; and (ii) orphans had been found to be generally low in academic achievement.

In their study, Sharma and Sud (1990) found that female students experience higher levels of test anxiety than do males irrespective of their cultural background. They argued that the major fundamental factor involved in the gender-related differences in test anxiety among students may be a greater role expectation conflict among females than among male students. They further concluded that in test anxiety situation, Indian school going females are likely to have a more competitive attitude and urge to perform better than their male counterparts.

Kaur, Deepika (1991) studied the effects of test anxiety, belief in control of reinforcement, and intelligence on intellectual achievement of two school populations. She explored that (i) for the public school sample, there were significant differences in achievement scores of boys and girls; (ii) for all the groups studied, the correlations between test anxiety and the various school subjects did not differ significantly from each other; (iii) no significant differences were found the various school subjects for any or the groups; and (iv) test anxiety showed a significant relationship with achievement.

N. Komala (1991) studied on the impact of anxiety on adjustment and achievement of adolescents at higher secondary level and concluded that by and large anxiety has a strong negative impact on adjustment and achievement. The interrelation between adjustment and achievement varies with anxiety level, although the general trend showed a positive relation.

Misra (1992) conducted a study on assessing the level of test anxiety, self-concept, adjustment and study habits in predicting academic achievement. The study was conducted on a sample of 88 Oriya male students of 9th and 10th class in three schools of Bhubaneswar in Orissa, India. This study revealed significant and negative correlation between test anxiety and academic achievement. Sreelathamma (1992)
demonstrated that there was no significant association between the achievement in biology and examination anxiety of the secondary school biology students.

The first attempt to study the cognitions of test anxious students (both boys as well as girls) during an actual test situation was made by Sud and Katoch (1994)\textsuperscript{155}. In this research effort, the cognitions of high, moderate and low test anxious students from a rural background, with high and low scholastic ability were studied at the beginning, middle and end of a history class test. Shanmuga (1995)\textsuperscript{156} conducted a study on the effect of anxiety on academic achievement. Taylor's manifest anxiety scale was used to measure the level of anxiety. The results were found that there was negative relationship between anxiety and academic achievement of students. Low anxiety students were high academic achievers and high anxiety students were low academic achievers. Sud, in another study with Prabha (1995)\textsuperscript{157}, observed that while test anxiety is associated with lower academic performance for some, the reverse might be true for others. Test anxiety has also been observed to be a natural outcome from poor study habits and test-taking skills.

Gupta (1998)\textsuperscript{158} found anxiety in age group 15-22 to be a significant influencing factor for good academic performance. Nair (1999)\textsuperscript{159}, in a study, revealed that correspondence students have high examination anxiety than regular students. The investigator also revealed that examination anxiety of overachievers and underachievers of secondary school was not found to be significant. The study conducted by Promod (1999)\textsuperscript{160} revealed that boys and girls differ in their anxiety levels. Girls showed more trait anxiety and situational anxiety than boys.

Deshmukh, N. H. (2000)\textsuperscript{161} ventured a study and revealed that high and low self-concept groups of junior college students differ significantly on anxiety, n-Ach, and intelligence. These groups did not differ significantly on goal discrepancy and academic achievement.

Sud and Prabha (2003)\textsuperscript{162} studied on a sample of 200 high school boys and girls using stepwise multiple regression analysis and found that test procrastination and Test Anxiety are the most relevant variables in predicting academic performance.

Khosravi, M. (2005)\textsuperscript{163} conducted a study which arrived at quite meaningful findings such as (i) in both of the Indian and Iranian students (Boys and Girls) on school anxiety factors, girls were higher on test anxiety, fear of expression and
psycho-physical reactions than boys; (ii) overall results of these two countries showed that, girls were higher on school anxiety and also on test anxiety, fear of expression, psycho-physical reactions than boys, but they were lower on lack of confidence than boys; (iii) overall results showed that, there was no significant between Iranian and Indian students on school anxiety; and (iv) overall results on school anxiety showed that Iranian students were higher on test anxiety and lack of confidence than Indian students. Indian students were higher on fear of expression than Iranian students.

Sud, Anup and Sujata (2006) ventured a research on academic performance in relation to self-handicapping, test anxiety and study habits of high school children. It was observed that males were less confident of their ability with regard to test anxiety and its worry and emotionality components. Only worry had been found to be negatively and significantly related to academic performance for total sample as well as for girls. It reflects that it was worry and not emotionality that strongly relates to academic performance. It was found that females experience more test anxiety than their male counterparts.

Antony, Beena (2008) conducted a research project on examination stress and behavioural manifestations among school students and revealed that excessive examination stress was negatively correlated with performance. Ghaderi, A. R., Kumar, G. V. and Kumar S. (2009) hypothesized that the depression, anxiety and stress level of Iranian students is higher than Indian students. Interestingly, the findings revealed that the depression, anxiety and stress level of Indian students are significantly higher than those of Iranian students. Furthermore gender differences are not found significant.

Hemamalini, H. C. (2010) reveals that very high anxiety is the cause for low achievement among the high school students. Mokashi, et al. (2010) conducted their study on a purposive sample of 330 students from VIII, IX and X standards of two residential schools and revealed that boys were significantly having higher anxiety level while girls were higher in scholastic achievement. A significant negative relationship was observed between overall anxiety and scholastic achievement of the respondents.

Roy, B. and Ghosh, S. (2013) revealed that there was a significant difference in academic achievement of high, middle and low test anxiety group. Male
students showed a higher percentage in moderate level of test anxiety whereas female students had higher level of test anxiety than males.

Alam, M. (2013)\textsuperscript{170} revealed that (i) low test anxiety students (boys, girls, rural and urban) had higher academic performance than high test anxiety students (boys, girls, rural and urban); (ii) boys have least test anxiety and better academic performance than girls; and (iii) urban students have least test anxiety and excellent academic performance in comparison to their rural counterparts.

2.2.2.2 Review of Foreign Studies on Test Anxiety and Academic Achievement

The relationship between test anxiety and test performance on those examinations was first investigated by Sarason (1958)\textsuperscript{171} who found a negative relationship – higher test anxiety was observed to be positively correlated to lower exam performance. She also observed that highly test anxious individuals were more self-critical and more likely to experience performance-interfering worry during examinations than were individuals who were observed to be low in test anxiety. Furthermore, Speilberger (1966)\textsuperscript{172} observed that highly test-anxious individuals were three times more likely to drop out of college.

Gaudry and Speilberger (1971)\textsuperscript{173}, in their study on anxiety and educational achievement, have demonstrated the negative relationship between test anxiety and academic achievement. Sarason (1972)\textsuperscript{174} found the interfering effect of test anxiety and the facilitating effect of general anxiety on academic work. Her findings confirmed the facilitating influence of general anxiety on course grade. In another study, this great researcher of test anxiety variable found that test-anxiety decreases attention span, memory and concentration, then leads to low academic performance (Sarason, 1984)\textsuperscript{175}.

Culler, R. E. and Holahan, C. J. (1980)\textsuperscript{176} demonstrated a significant decrement in grade performance average associated with test anxiety. For high test-anxious students, quality of study habits and amount of study time were positively related to academic performance.

Fulkerson and Cynthia's (1982)\textsuperscript{177} study documented that the high test anxiety students performed better on the criterion test than the students belonging to the low test anxiety group. There was only little interaction between test
anxiety and performance of students. Similarly, Payne, Smith and Payne (1983)\textsuperscript{178} found the reverse situation, i.e. a positive correlation between test anxiety and science achievement for the blacks in the USA. They however, found a negative correlation for whites in the same study. But, Siddique and Akhtar (1983)\textsuperscript{179} indicated in their research paper that highly anxious students performed poorly.

Hill and Wigfield (1984)\textsuperscript{180} reported significant negative correlations between test anxiety and academic achievement. McCann and Meen (1984)\textsuperscript{181} found that high anxiety was negatively correlated with achievement in a lower ability group, whereas anxiety and achievement were positively correlated in the high intelligence group.

A study of 1,648 Canadian elementary and high school students, conducted by McGuire et al., (1987)\textsuperscript{182} indicated that 22 percent of the students were significantly worried about schoolwork and this was the most prevalent stressor by test anxiety of grade XII students. Furthermore, Naveh-Benjamin et al (1987)\textsuperscript{183} have found that when compared with less anxious students, highly test-anxious students have difficulties in organizing material to be learned.

Elementary school children with severe test anxiety were assessed by Beidel and Turner (1988)\textsuperscript{184}. Their findings indicated that high test-anxious children were more worried about academic performance, their popularity, and friendships as compared to non-test anxious children. A comprehensive study by Hambree (1988)\textsuperscript{185} showed that test anxiety caused poor performance which implied that test anxiety had a negative relation with student’s performance. Therefore, the high-test anxious students tended to score lower than low-test anxious students.

Topp (1989)\textsuperscript{186} showed that test anxiety among learners negatively related not only to their test performance but also for their attainment of degrees and even the choice of their future careers. Schwarzer (1990)\textsuperscript{187} combined meta-analyses by Hembree and Seipp and reported the same negative correlation between test anxiety and academic performance. He further concluded that approximately two thirds of low-test-anxious students would score higher than the average high-test-anxious student.

Seipp (1991)\textsuperscript{188} found a negative correlation between test anxiety and academic performance. In a similar study, Young (1991)\textsuperscript{189} found that students felt
anxious when they had studied for hours for a test and then found in the test question types which they had no experience about.

Blankstein et al. (1992)\textsuperscript{190} attempted to determine whether test anxiety was linked to reduce problem-focused coping, resulting in a loss of focus. They found that test anxiety was associated significantly with a lack of self-confidence in ability to solve problems along with a relative absence of control over problems. Samimy and Tabuse (1992)\textsuperscript{191} investigated anxiety of tertiary-level students. In comparing anxiety levels between the first and the second semesters, anxiety significantly increased in the second semester.

Calvo and Carreras (1993)\textsuperscript{192} and Calvo, Eysenck, Ramos, Jimenez (1994)\textsuperscript{193} empirically demonstrated that high test anxious individuals tend to devote more effort and time to the task. Although no difference in reading comprehension resulted between high and low test anxious participants, high test anxious individuals took longer to read the passage than their low anxious counterparts.

Bedell and Marlowe (1995)\textsuperscript{194} compared scales developed under the various schools of thought purporting to measure test anxiety. Interestingly, they observed that the measures were essentially equivalent in their assessments. They observed that students’ test performance is more strongly related with a scale addressing general anxiety trait than they were with the most popular scales which attempt to measure only test anxiety. On the other hand, Schonwetter (1995)\textsuperscript{195}, by relating test anxiety to classroom instruction, concluded that high test anxious students were unable to benefit directly from organized instruction, which ultimately affected their performance in class.

A study by Ibrahim (1996)\textsuperscript{196} found no significant differences between the levels of stress during the beginning of term, middle of the term and prior to end term examinations. This finding was contrary to earlier findings which have shown that examinations increase anxiety. Drummond (1996)\textsuperscript{197} argued that individuals with low test anxiety do not worry and are able to concentrate on their test performance. Therefore, they are likely to perform better than those with high levels of anxiety. Seipp and Schwarzer (1996)\textsuperscript{198} attributed the high scores of Arabic students on the test anxiety scale to the severe negative consequences associated with poor examination performance in these countries.
Saito and Samimy (1996) examined anxiety in university students learning Japanese in beginning, intermediate and advanced courses. They reported that advanced students scored highest in anxiety, intermediate students the lowest and beginning students fell between the other two. They also reported that anxiety was the best predictor of the final grade of intermediate and advanced level students.

Williams (1996) studied the amount of test anxiety reported by academically talented students and determined the relationship between the two components of test anxiety and academic performance. The results showed that about 54% of the high-achieving students were high on both worry and emotionality. The results also showed that the students who reported having greater test anxiety had lower performance score than did the students whose test anxiety was minimal.

Albero, Brown, Eliason and Wind (1997), on the basis of their research study, concluded that students having high test anxiety had significantly lower scores. Commenting on the relationship between test anxiety and achievement in science, Adigwe (1997) reported a negative correlation between test anxiety and students’ achievement in science. Onwuegbuzie, Bailey and Daley (1997) focused that beginning students were found to have the lowest levels of anxiety, which increased linearly as a function of year of study.

Chambers (1998); Dornyei and Otto (1998) and Noels, Pelletier, Clement and Vallerand (2000) have done their researches on motivational orientations towards second language achievement highlighted that students do have high test anxiety level, even if their motivational attitudes are positively high.

Alderman (1999) and Kato (2002) reported that learners' anxiety highly influenced academic achievement, final grades, and academic performance at both the Input and Output stages. Anxiety level was observed to be the best predictor of these outcomes. Hong, Eunsook (1999) studied on test anxiety, perceived test difficulty, and test performance. Test difficulty perceived before and during the examination both had effects on test anxiety perceived at each corresponding time, students' perception of test difficulty during the examination had a greater direct effect on the arousal of test anxiety than did test difficulty perceived before the examination. Worry, but not emotionality, had a strong inverse relationship with performance. Perceived test difficulty did not have a direct effect on test performance, but had an
indirect effect mediated by worry. Wachelka and Katz (1999)\textsuperscript{210} found twenty percent of test anxious students quit school before graduating because of repeated academic failure.

Nyland et al., (2000)\textsuperscript{211} reported that test anxiety had greatly impact on the performance of students with lower ability, whereas anxiety showed no effect on the performance of students with higher ability. Rana (2000)\textsuperscript{212} argued that if test anxiety does not become too intense it can be an important source of motivation for exams. The research conducted by King et al., (2000)\textsuperscript{213}, has suggested a difference in anxiety responses between males and females and explored that females reported higher levels of test anxiety symptoms than males. Chen & Li (2000)\textsuperscript{214} showed that the impairment of attention and concentration due to test anxiety disrupted memory and as a consequence led to low academic achievement.

Eysenck (2001)\textsuperscript{215} claimed that test-anxiety creates irrelevant thoughts, preoccupation, and decreased attention and concentration led to academic difficulties. In addition, test- anxiety is linked to memory and can have effect on academic achievement, because both of them disrupt attention and concentration. Hancock (2001)\textsuperscript{216} investigated the effects of students’ test anxiety on students’ achievement and motivation and found statistically significant results which revealed that all students, especially students with high anxiety level, performed poorly and were less motivated to learn.

In a research study, conducted by Cassady and Johnson (2002)\textsuperscript{217} to investigate the effect of cognitive test anxiety on students’ academic performance, it was found that cognitive test anxiety exerts a significant stable and negative impact on academic performance measures. Schonwetter, Clifton, and Perry (2002)\textsuperscript{218} showed that high school grade point average had a positive effect for students while test anxiety negatively affected them. However, students not familiar with the subject had higher test anxiety and lower achievement than the students familiar with the subject. They also found males had lower test anxiety and lower learning perceptions but they achieved higher than the females.

Smith and Smith (2002)\textsuperscript{219} studied whether motivation and anxiety played a role in test performance. The results showed that motivation played a significant role on performance in the consequential stage as opposed to the non-consequential stage.
Also, test anxiety was higher during the consequential stage than the non-consequential stage. Vogel, H. L., and Collins, A.L. (2002) investigated the effect of test anxiety on academic performance and surprisingly explored that there was no difference in grades between the two groups. Therefore, academic performance was not found to be related to test anxiety in this study.

Ameringen, M. V., et al (2003) reported that about 49% (n=98) leaving school prematurely and 24% of those indicated that test anxiety was the primary reason for this decision. Baker, J. J. (2003) examined some of the factors that contribute to students' reactions and performance in an examination situation and revealed that (i) women examination scores were negatively associated with test anxiety; and (ii) women reported higher levels of test anxiety than men. Oostdam and Meijer (2003) also found test anxiety as an inhibitor of students’ performance.

Carden, et al. (2004), in their study on locus of control, test anxiety, academic procrastination, and achievement among college students, found that internals showed significantly lower academic procrastination, debilitating test anxiety, and reported higher academic achievement than externals. Cassady, J. C. (2004) tested the hypothesized negative impact of cognitive test anxiety in the test preparation, performance, and reflection phases. Test reflection phase reports demonstrated a relationship between cognitive test anxiety and helplessness attributions.

Daskzan (2004) found that there was a significant relationship between test-anxiety and academic achievement. In another study, Masson, et al. (2004) found that high school students with high test–anxiety had a poor school performance. Thus, test anxiety contributed to academic achievement because of vulnerability to distraction and interference experienced by the students.

Tomljenove and Nikcevic-Milkovic (2005) found test anxiety to significantly influence students’ achievement in elementary school. They found that pupils have different levels of test anxiety and negative correlation was observed between test anxiety and academic achievement. Bryan (2005) observed that high test anxiety was associated with poor reading and math achievement, failing grades, disruptive classroom behavior, negative attitudes toward school, and feelings of nervousness and dread that stem from an intense fear of failure. Gregor, A. (2005)
suggested an interaction between pre-anxiety level and performance is not minimal, but optimal anxiety leads to better examination performance. In addition, Chapell, et al. (2005)²³¹ conducted a research study to explore the relationship between test anxiety and academic performance. They found that differences in levels (low, moderate, and high) of test-anxiety had produced significant differences in academic performance scores among students.

The study conducted by Ohata (2005)²³² revealed that most of the participants in the study admitted that they feared taking tests, because test-taking situations would make them fearful about the negative consequences of getting a bad grade. Bodas, J. (2006)²³³ examined the nature of test anxiety from a cross-cultural perspective, with a specific reference to children in the Indian culture. In this investigation, quantitative data predicted test anxiety above and beyond intra-individual variables. Among the extra-individual variables, consequences of exam failure were correlated with test anxiety which did not predict test anxiety above and beyond the intra-individual variables.

Chandler, LeAnn (2006)²³⁴ compared male and female students in the 4th, 6th, and 10th grades to see which sex had more test anxiety. The results showed there was a significant difference between the 6th grade males and females during the pretest administration, with the males showing more anxiety. Currie and Stabile (2006)²³⁵ presented evidence that anxiety and depression increases the probability of grade repetition. Wood (2006)²³⁶ revealed that intervening to decrease anxiety in 6 – 13 years-old children with high anxiety predicts improves school performance.

Commenting on the relationship between test anxiety and academic achievement Zoller and Ben-Chain (2007)²³⁷ opined that students’ test anxiety correlates significantly with types of examinations. In other words, when the preferred course is administered test anxiety may be lowered and students likely to perform better and vice versa. In a previous study, they found that the anxiety of females to be higher than that of male students in science examinations.

Rafiq, Ghazal and Farooqi, (2007)²³⁸ compared the level of test anxiety in students studying in semester system with those of annual system. Their findings indicated no significant difference in test anxiety among students studying under two educational systems. Mazzone, L. et al. (2007)²³⁹ found among high school
students, that all subjects with a high level of test anxiety had poor school performance. Olatoye (2007)\textsuperscript{240} also found a negative relationship between test anxiety and students’ achievement; and no significant difference between male and female examinees’ anxiety.

Bembenutty (2008)\textsuperscript{241} found that the students with severe test anxiety typically display a lack of self-efficacy and motivation in the classroom. The study concluded that test anxiety also causes students to avoid studying which results in poor test scores. Kassim, Hanafi and Hancock (2008)\textsuperscript{242} conducted a research to explore test anxiety and its consequences on academic performance among university students. The results of this research suggested that test anxiety was negatively related to academic performance.

Richard (2008)\textsuperscript{243} found the differential effects of anxiety in terms of the interaction between anxiety and grade level, over learning, nature of the tasks and intellectual ability. Soffer (2008)\textsuperscript{244} found no significant gender differences on test anxiety in a study of a sample of elementary children in Florida. However, females were found to be slightly more anxious than males at different grade levels. Test anxiety has been found to interfere with achievement in school or collegiate settings and to have detrimental effects on the academic performance of undergraduates in the study conducted by Goetz, Preckel, Zeidner, and Schleyer (2008)\textsuperscript{245}.

Ndirangu, G. W., et al. (2009)\textsuperscript{246} showed that there was a statistically significant difference between test anxiety levels before and after examinations. High anxiety is experienced before the examination in all subjects. It was also established that both girls and boys are equally affected by test anxiety. The results showed there was no significant relationship between test anxiety and academic performance. A study conducted by Fernandez-Castillo, A. and Gutierrez-Rojas, M. E. (2009)\textsuperscript{247} explored a significant association between depression and anxiety in parts of the sample. There were no significant differences in anxiety between men and women. Regression analysis indicated that moderate levels of anxiety were associated with better academic performance.

Khalid, R. and Hasan, S. S. (2009)\textsuperscript{248} examined the level of test anxiety in high and low achievers and its relationship with academic achievement. Results showed that high achievers experience less test anxiety as compared to low achievers.
Female high achievers experienced more test anxiety as compared to male high achievers whereas male low achievers experienced more test anxiety than female low achievers. A significant interactive effect of gender and academic achievement on test anxiety was also found.

Oludipe (2009)\textsuperscript{249} conducted another study to explore how test anxiety affects students’ performance levels in Physics, and concluded that low test anxious students performed better than high test-anxious students on both numerical and non-numerical tasks in Physics. Rezazadeh, M. and Tavakoli, M. (2009)\textsuperscript{250} revealed that female students have a higher level of test anxiety in contrast to male students. Also a statistically significant negative correlation was observed between test anxiety and academic achievement.

Al-Khalil, Kareem (2010)\textsuperscript{251} examined the relationship between test anxiety, working memory, and verbal test performance. The only observed that participants with high test trait anxiety scored lower on the performance than their lower test trait anxiety counterparts. The results of exploratory factor analysis by Birjandi et al. (2010)\textsuperscript{252} revealed the loading of test anxiety trait on the rather overlapping three factors of specific test anxiety, general test anxiety, and test preparation anxiety. Out of these factors, general test anxiety, due to its functioning at the higher-order affective level, had a significant negative correlation with test performance. By contrast, test preparation anxiety, in view of facilitating test performance, manifested a positive, non-significant, correlation with test performance. But the negative impact of test anxiety on achievement was confirmed by Zheng, Ying (2010)\textsuperscript{253}.

Rana, R. A. and Mahmood, N. (2010)\textsuperscript{254} found a significant negative relationship existed between test anxiety scores and students’ achievement scores. Results of their study showed that a cognitive factor contributes more in test anxiety than affective factors. Hence, they concluded that test anxiety is one of the factors which are responsible for students’ underachievement and low performance. Yousefi, F., et al. (2010)\textsuperscript{255} conducted their study to determine the relationship between test-anxiety and academic achievement among adolescents. Result of their study showed that there was a significant correlation between test anxiety and academic achievement among adolescents. In addition, there was a significant difference of academic achievement between male and female adolescents whereby female scored higher in their academic achievement.
Idaka, et al. (2011)\textsuperscript{256} examined the correlation between test anxiety and trainee-teachers’ achievement in educational test and measurement; and whether test anxiety is a significant predictor of achievement in this core course. Finally, they indicated that trainee-teachers’ test anxiety was negatively correlated with their achievement in educational test and measurement; and test anxiety was a significant predictor of their academic achievement. Selvaraju, R. (2011)\textsuperscript{257} revealed that there was no significant difference between male and female; arts and science students in their anxiety. There was significant relationship between academic achievement and anxiety and there was significant influence of anxiety, temperament and adjustment on academic achievements of the higher secondary students. Trifoni, A. and Shahini, M. (2011)\textsuperscript{258} focused primarily on test anxiety and its impact on learning, as well as its causes and effects on students. The results indicated that a considerable number of students were affected, at least at some degree, by test anxiety.

Farooqi, Y. N., et al. (2012)\textsuperscript{259} investigated gender differences in test anxiety level and academic performance of medical students. The results of their study showed that the female medical students reported significantly higher test anxiety level as compared to the male medical students. Furthermore, significant negative relationship was found between test anxiety and academic performance of medical students. Owen, M. et al. (2012)\textsuperscript{260} investigated the relationship between negative affect, worry, working memory, and academic performance. They found that higher levels of anxiety and depression were associated with lower academic performance.

### 2.2.3 Studies Reviewed on Mental Health and Academic Achievement

The term mental hygiene has a long history in the United States, having first been used by William Sweetzer in 1843. An important figure to "mental hygiene", would be Dorothea Dix (1802–1887), a school teacher, who had campaigned her whole life in order to help those suffering of a mental illness, and to bring to light the deplorable conditions which they were put it in. This was known as the "Mental Hygiene Movement". Before this movement, it was not uncommon that people affected by mental illness in the 19th century would be considerably neglected, often left alone in deplorable conditions, barely even having sufficient clothing. At the beginning of the 20th century, Clifford Beers founded the National Committee for Mental Hygiene and opened the first
outpatient mental health clinic in the United States of America (Barlow, D. H., Durand, V. M., Stewart, S. H., 2009)\textsuperscript{261}. From then on, the study on mental health advanced in various field of human life. Here the investigator only emphasized the studies on mental health related to academic achievement in the following headings:

\begin{itemize}
\item \textit{Indian Studies on Mental Health and Academic Achievement, and}
\item \textit{Foreign Studies on Mental Health and Academic Achievement.}
\end{itemize}

\subsection{Review of Indian Studies on Mental Health and Academic Achievement}

Maitra, K. (1985)\textsuperscript{262} conducted a study explored that (i) academic underachievement was a phenomenon which frustrated the teachers sometimes but rarely the parents; (ii) the gifted overachievers were seen to be much more conformist than the gifted underachievers; (iii) the gifted underachievers relied more on luck or fate as compared to the gifted overachievers; (iv) the gifted underachievers seemed to be less optimistic and more dependent on luck or fate; (v) the overachievers were found to be of good mental health; and (vi) the gifted overachieving boys showed a higher score on achievement motivation than the gifted overachieving girls.

Tripathi, R. C. (1986)\textsuperscript{263} explored that (i) in general, boys were better adjusted; (ii) the scores of boys and girls in Hindi revealed a moderate level of attainment in the subject; (iii) urban science boys were generally better adjusted.

Ahluwalia and Kalia (1987)\textsuperscript{264} revealed that high achievers have less adjustment problems in the school adjustment area in comparison to low achievers. No significant difference was observed on social adjustment between these groups. They further documented that female high achievers were found to be better adjusted socially.

Sharma, S. D. (1987)\textsuperscript{265} declared (i) a positive co-relation between mental health and academic achievement and (ii) significant difference in mental health between urban boys and rural boys. Anand, S. P. (1988)\textsuperscript{266} constructed the RCEB mental health scale to study the mental health of high school students belonging to Class X. Major findings of his study included: (i) the retest reliability of the scale has been estimated at 0.88, and split-half reliability at 0.79; (ii) it has a fairly acceptable degree of construct validity; and (iii) a score of 150 was found to be the minimum for a healthy person. In another study, the same investigator studied mental health of high
school students. His investigation aimed to study the mental health of high school students and finally explored that the mental health of adolescents and their academic achievement were positively related (Anand, S. P., 1989)\(^{267}\).

Goyal, Chhaya (1988)\(^{268}\) engraved her findings that home, health, social, emotional and educational adjustment were significant determinants of learning and speed of performance, a high level of adjustment being more contributive. Sharma and Mehta (1988)\(^{269}\) investigated the effects of need for achievement upon psychological adjustment and academic achievement which showed that the students having high need for achievement were found to have significantly higher psychological adjustment in comparison to students having low need for achievement.

Srivastava, N. (1988)\(^{270}\) made a study of aggression in adolescent boys and girls in relation to their self-concept, achievement motivation and performance. This research unveiled that (i) there was no correlation of aggression with achievement motivation and performance (both academic and non-academic); and (ii) the girls showed a curvilinear relationship between achievement motivation and aggression while the boys showed no relationship between these two variables.

Asthana, Usha (1990)\(^{271}\) explored that (i) internal, warm-hearted, emotionally stable and assertive pupils performed better when they worked under intrinsic motivation; (ii) reserved in nature pupils performed better under the condition of external reinforcement praise; and (iii) those who were warm-hearted, assertive, adventurous and tense, performed well irrespective of conditions of control.

Manjuvani, E. (1990)\(^{272}\) conducted her study using three inventories dealing with home environment, school environment and mental health. Multiple regression analysis of the data revealed that (i) the home environment was major significant contributor to all the three components of mental health; and (ii) the school environment contributed to liabilities and the mental health index of the students. Punithambal (1990)\(^{273}\) explored a significant positive association between adjustment and academic achievement for both disadvantaged and non-disadvantaged groups.

Burwani, Rupa G. (1991)\(^{274}\) enquired into the nature of self-concept in the area of competence and its impact on mental health and academic achievement. She explored that the students who revealed mental ill-health symptoms were poor in
academic achievement. Kabra, L. (1991) studied the educational backwardness of SC/non SC higher secondary girls from four districts of Rajasthan. The SC girls showed lower social adjustment and lower scholastic achievement. Vasishtha (1991) demonstrated that high achieving boys demonstrated better social adjustment than their high achieving female counterparts.

Kumar, Pramod (1992) constructed a Mental Health Check List to study the mental health of the adolescents. The check-list consisted of 11 items, six mental and five somatic. Pathak and Rai’s (1993) study found achievement motivation to be positively related with mental health. The results of the study conducted by Ray and Yadav (1993) on 251 boys and 250 girls from grades nine to 12th of two urban and two rural higher secondary schools revealed that mental health and academic achievement were positively and significantly correlated. Rongali (1993) showed that senior secondary school boys of residential schools who were well adjusted having better academic achievement.

Kamau and Gupta (1994) constructed a mental health scale for teachers with 50 items, identified 5 areas, viz., personal well-being, anxiety, disabling symptoms, capacity for constructive relationships and coping with the ordinary demands and stress of life. But Kathuria and Ahluwalia (1994) found adverse effect of prolonged deprivation on scholastic achievement was seen in pupils of classes IX and X from Bihar and Raipur regions.

Vani (1995) reported that mental health status of adolescents to be affected by sex and type of school. In this study, girls were reported to be better on mental health than boys, although boys from co-educational schools were better than those in unisex schools.

Gyanani and Gupta (1996) found that academic achievement and adjustment of socially backward students was different from the first generation learners. Broota and Misra (1997) observed that the issues related to mental health in the educational context have three components; students, teacher, and the context of schooling in which instruction is imparted. Tickoo and Jagadish (1997) found achievement motivation to be positively related with mental health.

Anand (1999) conducted a study on mental health of 370 students of IX, X, XI and XII grades. Using RCEB Mental Health Scale, developed by the author, he
reported no significant impact of gender and class on the mental health. He also found that students with parents of better educational and occupational backgrounds had mental health in their favour.

Srivastava, et al. (1999) studied the mental health of 80 students in 11th and 12th standard from English and Hindi medium schools, applying Mithila Mental Health Status Inventory (MMHSI) developed by Kumar and Thakur, and showed that Hindi medium students had better mental health in comparison to English medium students. The investigators also reported that symptoms of egocentrism and emotional instability in English medium students were high in comparison to Hindi medium students.

Nanda (2001), as quoted earlier, studied on mental health of high school students also revealed that the general category students had better mental health than scheduled caste, scheduled tribes and first generation learners. On the basis of locale, urban students had better mental health. Scheduled caste had better mental health than scheduled tribe students.

Ojha, S. (2002) compared the social anxiety and mental health of normal and physically challenged adolescents. Social anxiety was observed significantly high in orthopaedically challenged group, where females were found to be more anxious. With regard to mental health, normal group and orthopaedically challenged group showed no significant difference.

Irfan, M.; Trama, S. and Sharma, H. K. (2003) studied adjustment, achievement motivation and frustration among rural-urban Muslim students in Punjab. This study revealed that rural Muslim students are more mal-adjusted, low achiever and frustrated than urban Muslim students in Punjab.

Gulati and Dutta (2004) conducted a study on the mental health profile of 245 rural adolescents and indicated that majority of the adolescents were found to be performing within normal status of mental health without any manifest conduct disorders and also the effect of gender was found to be non-significant. The results also revealed that the dominant problem in males was delinquency and females were anxiety and depression. Hence, the study revealed a significant effect of mental health on academic achievement.
Mythili et al. (2004) investigated the adjustment problems of intermediate students. A sample of 150 boy and girl students were selected randomly from government and private management colleges in Vijayawada. Results revealed that students of private colleges had more problems than those of government colleges.

Vasuki and Charumathy (2004) compared the sibling rivalry with achievement motivation, frustration, mental health and self-conflict of adolescents on a sample of 60 girls and 60 boys of age 15-18 years. Mental health was assessed by mental health inventory developed by Jagdish and Srivastava. Rivalry resulted in inferior level of achievement motivation and poor mental health. Greater extent of sibling rivalry also leads the adolescents to become more frustrated.

Jha (2005) examined the impact of the social residential areas with gender on mental health problem and revealed that rural children faced more problems than urban children, specially girls.

Bailur (2006) studied on the influence of relations of family and peers and pressures of students’ on adjustment and academic performance. The results revealed no significant difference in the areas of home and social adjustment by the socio-economic status in relation to academic performance. Vijayalaxmi and Lavanya (2006) showed that students who achieved more in mathematics felt less stress, male students have more stress than female, senior students have more stress than junior there is no difference between government and private college students.

Bhattacharya, N. (2008) conducted a co-relational study of mental health, test anxiety and academic achievement among the secondary level students in the District of Nadia and explored a positive low correlation between mental health and academic achievement. The researcher found no significant difference between academic achievement of boys and girls reading in secondary schools.

Sabbaghi, Fereshteh (2008) ventured a study of relationship between depression and academic achievement in graduate and post-graduate students and explored that (i) depression influenced B.A. and M.A. Students’ Academic achievement negatively; (ii) in B.A. and M.A. single students’ lack of academic achievement was seen in students who were having higher percentage of depression in three levels; (iii) in B.A. and M.A. age group of 18-22, and also in M.A. students in age group of 23 and above, academic achievement was affected negatively by
students’ level of depression; and (iv) in B.A. female, M.A. female and male students academic achievement was affected by depression at three levels, in the same manner, whereas the B. A. male students showed non-significant relationship between depression and academic achievement.

Bandhana & Sharma, D. P. (2010)\textsuperscript{300} conducted their study using Mental Health Battery which was developed and validated by A. K. Singh and A. Sen Gupta and found that mean value of mental health of girls is 74.76 and boys is 70.76. They also found that there were insignificant differences in mental health among secondary school students with high and low academic achievement.

Agarwal, A. (2011)\textsuperscript{301} undertook a study to examine the impact of academic stress upon academic achievement and mental health of the adolescents. Mental Health Battery, developed by Singh and Gupta was used to measure mental health. Results indicated that academic stress had significant negative correlation with academic achievement and mental health of the adolescents while academic achievement had significant positive correlation with mental health. No significant differences were found between academic stress and mental health of 10th and 12th grade adolescents. Significant difference was found between academic achievement and mental health of male and female adolescents in this study. Akolkar and Quadri (2011)\textsuperscript{302} observed that mental health have positive impact on achievement motivation as well as achievement of both male and female students. On the basis of these findings the concluded that male and female students significantly differ in their achievement motivation and they found no significant difference of mental health between male and female students.

Busari (2012)\textsuperscript{303} conducted a study to investigate the relationship between age, depression and academic performance among adolescents. The results showed that 26.5% of the boys and 30.7% of the girls were depressed and that depression and academic performance were significantly and negatively correlated. Chawla, A. (2012)\textsuperscript{304} ventured a study to test the mental health and its relation to academic achievement. Mental Health Inventory by Jagdish and Srivastava was used for the purpose of data collection. Findings of the study revealed that female students had better mental health than male students; and mental health score was positively associated with the academic achievement of the students.
2.2.3.2 Review of Foreign Studies on Mental Health and Academic Achievement

Mortimer, et al. (1992) examined the relationship between early work experience and adolescent mental health and behavioral adjustment. They found that boys who report more stress at work also manifest more depressive affect, more self-derogation, less internality, and a more external control orientation. For girls, the level of integration of school and work had pervasive associations with the psychological outcomes.

A 6-year longitudinal study of college students, conducted by Gerdes & Mallinckrodt (1994), found that personal and emotional adjustment was an important factor in retention and predicted attrition as well as or better than academic adjustment. Students who had left the institution in poor academic standing reported difficulties with anxiety and sleep.

According to the study conducted by Kessler, Foster, Saunders, and Stang (1995), 5% of college students prematurely end their education due to psychiatric disorders. They estimated that four types of disorders - Anxiety, Mood Disorders, Substance Abuse, and Conduct Disorder-were all "significant predictors of failure". They also determined that individuals with high levels of psychopathology have impaired information-processing skills, which are a critical component of academic performance and success.

Brackney and Karabenick (1995) found that high levels of psychological distress among college students were significantly related to academic performance. Students with higher levels of psychological distress were characterized by higher test anxiety, lower academic self-efficacy, and less effective time management and use of study resources. Brier, N. (1995) found that hyperactivity, distractibility, rigidity, and impulsivity linked to both delinquency and poor academic outcome.

In their 2-year longitudinal study, Chen et al. (1995) reported that Chinese youth aged 8-10 who scored high on the Children’s Depression Inventory (Kovacs, 1985) were found to have significantly lower academic achievement scores than their non-depressed counterparts. Glewwe and Jacoby (1995) found that the impact of child health on cognitive achievement varies as a function of the assumptions made concerning the impact of child mental health on school enrolment proxies for unobserved variables.
Children’s adjustment in the first three years of life and later emotional health and social competence in the school years have been shown through longitudinal research, conducted by Teo, et al. (1996), to be significant predictors of academic achievement in elementary school.

Mathewson (1997) revealed that the mean scores of normal achievers were significantly lesser than the mean scores of underachievers in test anxiety and achievement. Personal adjustment, social adjustment, social facilities, self-acceptance were accounted with the cognitive outcomes of the total student population.

Behrman and Lavy (1998) also found that the impact of child health on cognitive achievement varies as a function of the impact of child’s mental health on school enrolment proxies.

Roeser, et al. (1998) explored the relation between early adolescents’ academic functioning and mental health in a large and revealed four distinct patterns of academic functioning and mental health among adolescents during the middle school years. These patterns included (a) a well-adjusted group that showed positive functioning in both school and mental health domains and (b) a poor motivation group that showed low valuing of school but positive mental health.

Alatorre, A. S. & deLos R. R. (1999) found a significant negative correlation between psychosocial stress and grades, indicating that students experiencing high levels of psychosocial stress tend to do poorly in school. Cole, D. A. et al. (1999), in their longitudinal study, observed that symptoms of depression and anxiety were negatively associated with academic over estimation. Results also revealed that self-reported depression and anxiety predicted changes in the reverse relation were estimated to be much weaker.

Dewey, J. D. (1999) conducted a review study and concluded that there were causal relations between mental health problems and achievement and that these relations were bidirectional. Former Surgeon General David Satcher (1999) reported in his landmark study of mental health in the United States. The report highlighted that 20% figure are children and youth experiencing serious functional impairment, estimated at 11% or more than one in ten. An estimated 5% of U.S. children and youth have extreme functional limitations due to psychiatric disorders. Miech et al. (1999) found that youths with hyperactivity and conduct disorders
obtained significantly less schooling, while anxiety and depression had little effect on schooling levels and achievement.

Roeser et al. (1999)\textsuperscript{321} investigated on children’s academic motivation and mental health as a way of describing different patterns of adjustment during adolescence. Some children were doing consistently well or consistently poorly across the academic and emotional domains of functioning in this study. Children in the multiple problems group showed long-term continuity in terms of their poor academic motivation, low grades, and low self-esteem during the years between elementary and high school. They also observed that declines in these children’s self-perceptions of competence occurred before declines in their academic values.

Chen, Xinyin & Li, Boshu (2000)\textsuperscript{322} found that depressed mood contributed negatively to later social and school achievement and positively to the development of adjustment difficulties. Jennings, Pearson, and Harris (2000)\textsuperscript{323} found that school mental health programs improve educational outcomes by decreasing absences and discipline referrals and improving test scores.

Pagani et al. (2001)\textsuperscript{324} investigated effects of grade retention on children’s academic performance and behavioural development. The results suggested that grade retention makes boys more disruptive and less inclined toward good academic performance compared to their same-grade peers and compared to their same-age peers. For girls, academic performance was affected by grade retention in early, middle, and late primary school. Slap, Goodman & Huang (2001)\textsuperscript{325} had boldly documented that teens who have made a suicide attempt in the previous twelve months showed significantly lower levels of school performance and school connectedness than non-attempters.

Svanum and Zody (2001)\textsuperscript{326} also found that substance abuse disorders were most strongly associated with lower academic performance grade point average. The study conducted by Sidebotham, P., et al. (2001)\textsuperscript{327} revealed that educational achievement and a history of psychiatric illness were of prime importance in an understanding of child maltreatment. Fergusson and Woodward (2001)\textsuperscript{328} explored that anxiety disorders are associated with drug use and dependence, suicidal behavior and a reduced likelihood of attending college and performance.
Abikoff et al. (2002)\textsuperscript{329} found that the co-occurrence of Disruptive Behavior Disorders and Attention Deficit/Hyperactivity Disorder was more indicative of academic achievement deficits relative to other psychiatric disorders present in isolation or combination. Fosterling, F. & Binser, M. J. (2002)\textsuperscript{330} depicted in their study, that high depression scores were associated with low academic achievement, high scholastic anxiety and poor peer and teacher relationships. Malecki & Elliott (2002)\textsuperscript{331} conducted a longitudinal study of third and fourth grade students and provided support for a causal relationship between good mental health and higher academic achievement.

Bennet et al. (2003)\textsuperscript{332} investigated if low reading achievement at school entry increases the risk of conduct problems. The results showed a significant relation between the risk of conduct problems and reading achievement at school entry. Results of this study also suggested that low reading achievement was causally related to development of conduct problems. A longitudinal research, by Catalano, et al. (2003)\textsuperscript{333}, has demonstrated positive impact on elementary students’ academic performance of the raising healthy children, a school-based program that focuses on promoting positive youth development, reducing risk factors, and preventing adolescent problem behaviors.

In a study report of Collaborative for Academic, Social, and Emotional Learning (2003)\textsuperscript{334} firmly exposed that satisfying the social and emotional needs of students prepared them to learn, increased their capacity to learn, and increased their motivation to learn. The report further declared that it also improved attendance, graduation rates, and reduces suspension, expulsion, and grade retention. Farooq, Ms. A. (2003)\textsuperscript{335} significantly proved that the students who score high on adaptability, general mood, and stress management skills tend to have good academic performance as compared to those who score low on these scales. Mahmood, Khalid (2003)\textsuperscript{336} explored that the students, who are highly descend, responsible, emotionally stable, original thinkers and vigorous obtained high scores in academic achievement. But the students, who are highly sociable and cautious, obtained low scores in academic achievement.

Stoep et al. (2003)\textsuperscript{337} analyzed data from the longitudinal Children in Community Study, looking specifically at the relationship between school failure and adolescent psychiatric disorder. This report focused that almost 40% of the youth with
mental illness did not complete high school compared to 7% of students without mental illness who did not graduate. Based on these data, the authors estimated that the proportion of failure to complete school that was attributable to psychiatric disorder was 46%. They also found that over half of the adolescents in the United States who fail to complete their secondary education have a diagnosable psychiatric disorder.

Trout, A., Nordness, P., Pierce, C., & Epstein, M. (2003) comprehensively examined the current state of the literature on the academic status of students with emotional and behavioural disorders and found that students with emotional and behavioural disorders generally performed less well that their peers without disability. They supported the notion that students with emotional and behavioural disorders were often academic underachievers. WestEd (2003), in his study on student well-being essential to academic success, found that there was a strong tie between students’ overall health and resilience and their academic achievement.

DeSocio, J., & Hootman, J. (2004) found a bidirectional links between mental health and achievement. They also supported the confluence of school performance concerns with emerging and existing mental health problems in children. Gonzales, et al. (2004) reported that adolescents showed increased use of active and distraction coping strategies and decreased depressive symptoms for themselves from pretest to post-test. Hanson, Austin & Lee-Bayha (2004), completed their longitudinal research employing the California Healthy Kids Survey, indicated that increasing sadness or hopelessness among students was related to subsequent declines in gains in test scores in reading, language, and mathematics; however, students’ reports of caring relationships in school and high expectations at school were related to increases in test scores.

Keawkingkeo, S., (2004) made a study to determine the level of mental health, emotional intelligence to find out the relationship between mental health, emotional intelligence and academic achievement of student nurses. The study revealed that 95.36% of the subjects were in the state of good mental health, 1.55% was in a state of very good mental health and 3.09% were in the state of poor mental health. It was disclosed that there was no relationship between mental health, emotional intelligence and academic achievement, respectively.
McLeod, J. D., & Kaiser, K. (2004) documented that mental health problems decrease the probability of receiving a high school degree or being enrolled in college, which is due to the association of mental health problems with prior academic problems. Needham, B. L., Crosnoe, R., & Muller, C. (2004) conducted their study on academic failure in secondary school, the inter-related role of health problems and educational context and found that emotional distress was associated with greater likelihood of failing one or more classes in the next year and absenteeism. The epidemiological studies, conducted by Juvonen et al. (2004), supported Stoep’s study and suggested that 12 to 30 percent of U.S. school-age children and youth experience at least moderate behavioral, social, or emotional problems due to test anxiety, which affect their achievement.

A longitudinal study by Fleming, et al. (2005) provided strong empirical evidence that interventions that strengthen students’ social, emotional, and decision-making skills positively impact their academic achievement, both in terms of higher standardized test scores and better grades. The finding of a significant relationship between depression and academic performance was robust to the variety of analyses employed within the study conducted by Hysenbegasi, A., Steven L. Hass, S. L. & Clayton R. Rowland, C. R. (2005). They found that depression decreased students’ grade point average. They concluded that the mental health disorders were associated with a significant decrease in grade point average, but their impact was approximately 28% that of depression. The study conducted by Shriver, T. P. & Weissberg, R. P. (2005) vindicated, what has long been common sense among many teachers and parents, that children who are given clear behavioral standards and social skills, allowing them to feel safe, valued, confident and challenged, will exhibit better school behavior and also learn more.

Johnson, McGue and Iacono (2006) investigated effects of several factors, including mental health problems, on level of academic achievement. They did not showed any causal relation between internalizing mental health problems and academic achievement as reflected in school grades.

Keogh, et al. (2006) indicated that an increase in the functionality of pupils’ cognitions served as the mechanism by which mental health improved. An increase in motivation accounted for the mentally healthy group’s significantly better performance on the standardized, academic assessments that comprise the United
Kingdom’s General Certificate of Secondary Education. Findings of the Oregon Healthy Teens Survey (2006)\textsuperscript{352} showed that 14% of the 8\textsuperscript{th} grade students that rated their general emotional and mental health as excellent reported having mostly low grades - C, D, and Fs. By comparison 45% of the 8\textsuperscript{th} graders that rated their emotional and mental health as fair or poor reported having mostly low grades.

Ding, W., et al. (2007)\textsuperscript{353} observed that the academic performance of female students was strongly and negatively affected by poor mental health conditions. Grimm (2007)\textsuperscript{354} compared three bivariate longitudinal models of developmental relationships between academic achievement and mental health. The result showed that school achievement was a protective factor against development of depression during early school years and mental health was a predictor of academic achievement.

Herman et al. (2007)\textsuperscript{355} investigated the relationship between attention problems, academic competence and depressive symptoms for Afro American children. Academic competence in the spring of first grade mediated the relationship between inattention in fall of first grade and depressive symptoms in spring of third grade, controlling for conduct problems and academic competence in first grade. A meta-analysis of 24 articles, published between 1990 and June 2006, conducted by Hoagwood, Olin, Kerker, Kratochwill, Crowe, & Saka, (2007)\textsuperscript{356}, examined the impact of school mental health interventions on both mental health and educational outcomes found that 62.5% of the interventions studied demonstrated dually positive outcomes in regards to both mental health and education. In addition, the authors identified 40 studies that focused exclusively mental health outcomes, with 95% reporting positive findings.

Puskar & Bernardo (2007)\textsuperscript{357} carried out their study to identify factors that impact on students’ mental health since poor mental health has been recognized by them as the leading cause of lower academic achievements. Townsend, Flisher, and King (2007)\textsuperscript{358} specifically studied the direction of the relationship between mental health and achievement by looking at previously published studies. They reported that substance abuse was associated with dropping out of high school even after adjustment for demographic differences, but that more research was needed to understand how the relationship worked.
Berslau et al. (2008)\textsuperscript{359} found strong associations between child-adolescent mood, anxiety, substance use and conduct disorders with termination of schooling prior to each of three educational milestones. They find that the proportion of school terminations attributable to mental disorders was largest for high school graduation (10.2\%) but also meaningful for primary school graduation, college entry, and college graduation. Fletcher (2008)\textsuperscript{360} investigated the association between depression during high school and educational attainment. Interestingly enough, he did not find depression status to be associated with dropping out for the full sample. But there was a strong effect of depression on probability of dropping out for females, and no effect for males. He further found a robust negative relationship between depression in high school and subsequent educational attainment. Frojd et al. (2008)\textsuperscript{361} reported that depression impair cognitive functioning and blocks cognitive sources and many of the academic performance.

A recent study of higher education students experiencing mental health difficulties during their studies, Martin & Oswin (2008)\textsuperscript{362}, showed that under achievement was particularly concerning given the increased numbers of students with mental illness who are enrolled in higher education.

Havas et al. (2009)\textsuperscript{363} made a study on adolescents of the Netherlands and found a strong association between a low educational level of the adolescents and higher odds of mental health problems. Slee et al. (2009)\textsuperscript{364} reported that 92\% of teachers across 100 schools strongly agreed, that the students who are socially and emotionally competent learn more at school. Across the 2-year study these stable and strong beliefs about the benefits to learning of well-developed social-emotional competencies were also evident in the data gathered by the researcher. They also found that happy kids and contented kids, and kids who know how to interact better with one another, are much better learners.

Ballentine, H. M. (2010)\textsuperscript{365} investigated the relationship between wellness and academic success in first-year college students. The findings suggested that the impact of wellness differs by academic program. In addition, certain factors of wellness can be used to help predict academic success in the first semester of college. Eide, E. R., et al. (2010)\textsuperscript{366} explored the relation between children's health and academic achievement. They found that several mental ill-health conditions are highly
negatively correlated with math and reading test scores, both on average and at different points of the achievement distribution.

Nordin, N. M. et al. (2010)\textsuperscript{367} studied on selected demographic characteristics and mental health of young adults in public higher learning institutions in Malaysia. Findings of their study indicated that a majority of undergraduates exhibit a healthy mental state while a minority has some mental health concerns. One-way ANOVA tests showed that the mental health of undergraduates in this study differed in terms of year of study and academic field.

Munida, Lawrence (2011)\textsuperscript{368} opined that students with psychological and mental health problems are often accorded a low status and priority compared to peers with other disabilities and conducted a study, using a mixed methods approach, on the effect of psychological distress on academic achievement. It was concluded that a mild extroversion, introversion, and anxiety were not necessarily harmful, but excessive amounts of each of these traits could undermine a student’s educational achievement. The study revealed a wide range of mental health problems which have implications on learning, teaching, and counseling.

2.2.4 Summary of the Review of the Related Literature

The investigator surveyed the relevant research studies and literatures into three main heading as (1) Reviewed Studies on Achievement Motivation and Academic Achievement; (2) Reviewed Studies on Test Anxiety and Academic Achievement and (3) Reviewed Studies on Mental Health and Academic Achievement. Each and every heading were described into two subheadings, namely – (i) Indian Studies and (ii) Foreign Studies. The total number of research studies reviewed and placed in this foregoing heading of review by the present researcher was 360. The researcher, hence, found the following facts on the basis of his review work:

\begin{itemize}
  \item \textbf{Reviewed Studies on Achievement Motivation and Academic Achievement}
\end{itemize}

The reviewed studies conducted in Indian educational field as well as in foreign, in relation to Academic Achievement and Achievement Motivation, revealed following facts:
Under the subheading of Indian studies, the researcher reviewed a sum of sixty (60) studies conducted in relation to achievement motivation and academic achievement. The researcher reviewed fifty seven (57) foreign studies conducted in relation to the said variables under the subheading of foreign studies.

Among the reviewed studies, a major number of researches held in India and abroad are correlational in nature and emphasized the exploration of the nature of correlation between these two variables.

A major portion of the researches explored the positive correlation between achievement motivation and academic achievement.

Only a few researches (Barial, 1966; Deka, 1985; Rajput, 1984; Zenzen, T. G., 2002; Jansari, A., 2006; Meece, Glienke, & Burg, 2006; Ergene, 2011, etc.) declared zero correlation between them.

Studies conducted by Hirunval (1980), Mian, Shamshada (1988), Adsul, R. K. and Kamble, V. (2008), etc. found boys having higher achievement motivation than the girls students.

Rafaei and Rahman (1973), Watthayu (1985), Aida (1994), Clark & Trafford (1995); Lamb (1997); Walsh, Hickey & Duffy (1999); Warrington, Younger & Williams, (2000); Davies & Brember (2001); and Shams, Meenaz (2008) showed that the girls were much motivated academically to achieve than the boys students.

Ahluwalia (1985); Konwar, L. N. (1989); Rani, S. and Kaushik, N. (2005); Nagarathanamma and Rao (2007) found no difference between boys and girls in their achievement motivation.

High achievement motivation caused good academic performance, and similarly, low achievement motivation resulted in poor academic achievement.

**Reviewed Studies on Test Anxiety and Academic Achievement**

The reviewed studies on test anxiety, in relation to Academic Achievement, conducted in Indian educational field as well as in foreign revealed the following facts:

Under the subheading of Indian studies, the researcher reviewed a sum of thirty seven (37) studies conducted in relation to achievement
motivation and academic achievement. The researcher reviewed eighty nine (89) foreign studies conducted in relation to the said variables under the subheading of foreign studies.

**ii.** Most of the reviewed researches on test anxiety and academic achievement held in India are correlational in nature and emphasized the exploration of the nature of correlation between these two variables. But the foreign researchers laid emphasis upon the impact of test anxiety on academic achievement.

**iii.** Most of the researches on test anxiety in India and abroad revealed negative relationship between test anxiety and academic achievement.

**iv.** Research in both India and abroad indicated that test anxiety has been associated with low performance in the students.


**vi.** Sreelathamma (1992); In’nami (2006); and Ndirangu, G. W., et al. (2009) explored no relationship between test anxiety and academic achievement.

**vii.** A few of the reviewed researches on test anxiety indicated that sex was significantly related to test anxiety and girls showed more test anxiety than boys. This findings was observed in the study conducted by Barinder, M. (1985); Promod (1999); Khosravi, M. (2005); Zoller and Ben-Chain (1990); Anderson, J. K. and Wallace, L. M. (2007); Rezazadeh, M. and Tavakoli, M. (2009); and Farooqi, Y. N., et al. (2012).

**viii.** Shanmugasundaram, R. (1983) and Mokashi, et al. (2010) showed that the boy students had high test anxiety than the girl students.

**ix.** Only Pajares and Graham (1999); Soffer (2008); and Selvaraju, R. (2011) found no gender differences in test anxiety.

| Reviewed Studies on Mental Health and Academic Achievement | 104 |
The reviewed studies conducted in educational field of India as well as in foreign, in relation to Mental Health and Academic Achievement, revealed the following facts:

i. Under the subheading of Indian studies, the researcher reviewed a sum of forty two (42) studies in relation to mental health and academic achievement. The researcher reviewed sixty three (63) foreign studies in relation to the said variables.

ii. Among the reviewed studies, a major number of researches held in India and abroad on mental health and academic achievement explored positive correlation between these two variables.

iii. Among the studies conducted in India, a large number of researches laid emphasis upon the adjustment behaviour, competency, well-being, stress, frustration, depression and anxiety in studying the mental health of the students.


v. Tripathi, R. C. (1986) showed that the boy students were of sound mental health, whereas Magotra (1982) found the fact in opposite. He showed the girl student having good mental health than the boy students.

vi. Sharma (1981), in his study did not found relation between mental health and academic achievement of the students.

vii. The overall findings from the reviewed studies on mental health and academic achievement explored that mental health is a predictor of academic achievement of the students.

Hence the present researcher, from his reviews of the various section of the ongoing chapter, found that there is an urgent need to make a study on the selected variables to explore the impacts of achievement motivation, test anxiety and mental health on the academic achievement of the students studying secondary education. The researcher considered to make his study on this level of education, as the secondary level of education is the backbone of higher education and specialization. Hence, he presented his review of related studies in the form
Chapter II: Review of Related Literatures

of a schematic diagram showing the summary of total review work of the present study at the previous page. In the schematic diagram for summary of literature reviews, the researcher showed that the reviews only were done on the studies specifically related to the academic achievement of the students in relation to their achievement motivation, test anxiety and mental health conducted in India as well as in abroad. Hence, the diagram also made clear that the reviewed studies showed a gap in the area of achievement correlates researches and demanded the present study to be conducted. (The Schematic Diagram is given as Figure – 2.1).

Figure 2.1: The Schematic Diagram of the Review of Related Literatures.

2.3 EMERGENCE OF THE PROBLEM

Examination, also known as the control of knowledge, has existed since the period of antiquity. The ancient history of Indian education clearly specifies the existence of Examination at the end of the education of a ‘disciple’ (student)
from his ‘Guru’ (Teacher). Guru brought his students before the King or at the assembly of various Gurus, learned Pandits and wise personnel. Being asked some questions from the subjects learned by the disciple, he had to answer them and had to satisfy the assembly of Gurus or the king’s assembly. After this process of evaluation, the disciple was certified his degree. After the ‘Samavartana’ (Convocation), debating tours constituted the real termination of formal pupilage, which was also not an easy examination. In Buddhistic period, ‘Mark of respect’ was bestowed for success in public examination before an assembly of great monks. I-Tisng described that monks were graded according to their academic attainments in the ascending order of Sramanera, Bhikku, Sthavira and Bahusruta. Privileges were graded according to ranks. The history of Nalanda University is the greatest example of the existence of examination in ancient India, as the university had a tradition to take a probationary test from the students wished to get admission to this institution. This entrance test was not so easy. It is said that only 20 percent of the aspirants came out successful in the admission test conducted by the Dwarapandits. Hence, Indian history always proofs the existence of examinations. Beside this, it can be mentioned that Socrates used questionnaires with consecutive questions with the aim to encourage his students to think critically. The same phenomenon was noticed even in Rome around the Fifth century BC. As a tradition, the control of knowledge in Europe consisted of oral questioning, a phenomenon which began in 1219 in the University of Bologna, where students had to answer verbally to questions made in Latin. Apart from the oral exams, starting from 1792, in Europe were introduced the first written exams with a starting point in the University of Cambridge in England. As the time has been changed, the system of examination and evaluation became complex to more complex.

Assessment and evaluation of students’ work, more specifically, in practical, examination was and remains a crucial point in all the system of education. Nowadays, testing has become an inherent part of society. It has become more extensive not only in education but in every sphere of life and many important decisions are specifically based on test results. This view is also supported by Spielberger and Vag (1995)\textsuperscript{369}, two experts in the field of test anxiety. These researchers point out that –

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...achievement test scores, as well as academic performance, are increasingly used in evaluating applicants for jobs and admissions into educational programs. Consequently, examination stress and test anxiety have become pervasive problems in modern society.

This view was held earlier by another well-known researcher in the field of test anxiety, Sarason (1959)\textsuperscript{370}, who commented, “We live in a test-conscious, test-giving culture in which the lives of people are in part determined by their test performance”. At this point, it is important to emphasize that even though tests are highly valid and reliable, one cannot be sure whether the results truly reflect students’ understanding or their actual true abilities.

In a student’s school life the interim period between primary school level and higher secondary level is called secondary stage and the education at this stage is called secondary education. It is the connecting link between these two and also serves – or at least should serve – to select those who are to provide higher leadership to the community.

A uniform structure of school education viz., the 10+2 system has been adopted by all the States and Union Territories of India. However, within the States and the UTs, there are variations in the number of classes constituting the Primary, Upper Primary, High and Higher Secondary schools, age for admission, medium of instruction, stages of public examinations, number of working days in a year, academic session, vacation periods, fee structure, compulsory education etc. Now, in India, there are twenty three Recognised/Autonomous Body/ Part of the State Department of Education/Registered boards transmitting secondary education in twenty three State. Beside these, there are three Education boards serve all India namely, (i) Central Board of Secondary Education; (ii) Council for Indian School Certificate and (iii) National Open School. These boards of secondary education are disseminating and transmitting secondary education throughout the country with their own approaches and styles. Therefore the quality and quantity of education varies every time and in case of every board.

The present scenario of West Bengal regarding the achievement of secondary pupils studying under the secondary education board, namely West Bengal Board of Secondary Education (WBBSE), does not match this
expectation. They score poor marks in comparison to the students of other boards of secondary education, like Central Board of Secondary Education (CBSE) and Council for the Indian School Certificate Examination (CISCE). This discrepancy in their academic achievement lower them in all Indian competition for getting admission into the seats of higher learning and in many cases, act as a hindrance in getting promotion. With respect to content, West Bengal State Board’s curriculum has differed from the general pattern that while most states teach science and social studies subjects in an integrated form, under the West Bengal Board, these are studied separately. This difference has had a considerable impact on the curricular load of students. In contrast, the syllabus followed by the centrally managed Boards, and especially the CBSE and CISCE are broadly perceived to be superior in content. This criticism is not unexpectedly harsh. Even if one were to not look at performance in the competitive examinations at all, a general comparison of the state Board with the National Boards would reveal that the curricular content of the state Board lacks innovation. For instance, the CISCE curriculum includes projects, surveys and model building to a very large extent. Students can expect a visit to the botanical gardens, a session with engineers before making a working model of a dynamo or a geographical survey. In contrast, the State Board syllabus is theoretical and less activity-oriented. Of course, that the State Board affiliated schools, and the Bengali-medium schools among them, cater to students from not-so privileged backgrounds cannot be denied. There are significant differences between the perceived relevance and success of curricular patterns followed by schools under the West Bengal Board and those under the centrally managed Boards.

For decades, the secondary curricula in the state - affiliated schools had remained largely unchanged. However, the powers-that-be may have finally realized the problems inherent in rendering generations of students noncompetitive and disadvantaged in their long-term educational and professional plans. It is only six years ago, sweeping changes have been done to carried out in the realm of curriculum. The syllabus for the secondary stage has been revised. New Madhyamik syllabus came into vogue. But scenario of overall achievement of the state Board, in comparison of CBSE and CISCE, remains unchanged or changed only a negligible little bit. Even though changes have now been brought
about, the process itself has left much to be desired. Another disparity that the State Board has always been accused of concerns not the examination pattern per se, but the marks obtained therein. In other words, there has been a lack of parity between the marks obtained by students in the two All-India Boards and those obtained by students of Madhyamik.

The CISCE Board, generally, adopted the specific, objective type examination, whereas the state board is using the traditional system of essay type examination. The effectiveness of examination patterns and the equity reflected in the annual results can be condensed into –

- The better performance of students in CISCE affiliated schools on an average, as compared to those in State Board and Council affiliated schools.
- Within government and government-aided schools, the highly skewed performance of students, revealing the pervasive influence of rural-urban, income-class and gender disparities.

A comparative analysis of public examination results reveals that for decades, the average performance of students in schools affiliated to the West Bengal Board as well as Council has lagged behind CISCE affiliated schools and their students. The CISCE Board also has a competitive advantage when it comes to pass percentages and compartment-to-clear pass ratios. The overall pass percentage of the West Bengal Board of Secondary Education conducted Madhyamik is very low, in comparison of CISCE result. Though, some of the schools under WBBSE are doing well and there are no failures and also had excellent results. However, there have also been schools under WBBSE where less than 40% of students have qualified for the Madhyamik examination. Unbelievably, there have also been cases where all the students of a school appearing for the Madhyamik examination have been failed in a year. In the year 2000, at least 45 schools had been issued letters by the West Bengal Board of Secondary Education, asking for explanations for poor performance. Following a provision in the Board’s charter, initiating action and canceling recognition to the schools that had been performing unsatisfactorily for three consecutive Madhyamik Examinations was also considered by the Board.
Students of CBSE and CISCE affiliated schools also perform better in competitive examinations as compared to their counterparts from State Board schools. Students of the central Boards are better equipped to crack exams such as IIT-JEE as the questions are objective, whereas West Bengal Board, at least till now, had been giving more importance to theory. The disparity is not only between State Board schools on one hand and central Board affiliated schools on the other. Within the West Bengal Board, there are widespread disparities in examination results and performance. This view is supported also by a statistical data shows the year wise percentage of passed pupils of Madhyamik Pariksha, conducted by West Bengal Board of Secondary Education and of Indian School Certificate Examination, conducted by the Council for the Indian School Certificate Examination. A close examination of the graphical representation of the Rates of Pass in percentages from 2003 to 2012, given below as Figure -3, presents a picture of uneven advancement of the students of the two Boards of Secondary Education.

**Figure 2.2:** Comparative Percentages of Passed for Both WBBSE and CISCE Boards. [*Data were collected from The Statesman and The Anandabazar, 2003-2012*]

It is very clear to say that the achievement of the students of CISCE Board is always very high in comparison with WBBSE. The rates of passed candidates for CISCE Board are always increasing very smoothly, whereas, for WBBSE, those are uneven. Beside this, there has been a decline in the performance with the pass percentage in 2006 (64.95%) and in 2008 (72.46%) and in 2011 (80.57%) unexpectedly. The Board President Anjan Sengupta uttered, “I cannot speculate on what may have been the reason for a drop in the pass percentage” (From *The Hindu*, Daily Newspaper, Saturday, May 28, 2011). The difference between these
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two Boards of secondary education always more than 20% and the curve is remarkably parallel.

After a thorough discussion with various subject expert and famous teachers of secondary schools, the researcher tried to throw a ray of light on the factors behind this discrepancy. Beside this discussion, the researcher also found some relevant studies concerning this discrepancy, which unveils some logical perspectives in relation to the present effort of the researcher. Ministry of Human Resource Development, Department of Education, New Delhi, India (2008) published a project report on Results of high school and higher secondary examinations 2005 and 2006. The report assessed important statistics of examination results of the High School, Higher Secondary and Intermediate/ Pre-university Examinations conducted by various Boards in the country. During the year 2006 approximately 140.12 lakh students appeared in the Annual Secondary/High School Examination out of which 89.35 lakh students passed (63.7%). In the supplementary examination about 11.54 lakh students appeared and 5.73 lakh students passed (49.65%). Among all the boards the pass percentage was highest viz. 96.03% (95.32% for boys and 96.94% for girls) in case of council for Indian School Certificate Examination (ISCE), and lowest in the case of Open School Board 31.18% (30.11% for boys and 33.3% for girls). The pass percentages for regular and private candidates were 66.18% and 42.79% respectively. The overall pass percentage of SC and ST students of Secondary Examination during 2006 (Annual and Supplementary) was 60.38% and 53.04%. At all India level, the number of students who appeared in the Secondary/ High School Examination increased from 134.87 lakh in 2005 to 140.12 lakh in the year 2006. Pass percentage of High School Examination for girls was 67.55% and for boys it was 61.36% in 2005. It was 70.15% for girls and 66.23% for boys in 2006. It was found that in the Secondary Examination, the female participation increased from 67 girls for 100 boys in 2005 to 71 girls for 100 boys in 2006.

Pass percentage among regular students varies from 55% to 98% among students appearing in Secondary Examination - 2009 through various regular boards. These have been shown in Figure 2.3. In 18 boards the pass percentages are above average pass percentage. In 2009, the highest percentages of students were passed from the CISCE affiliated schools. For two central boards and 32
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state boards, the pass percentages are presented in the Bar Graph for Regular Students. The graph also shows the discrepancy among two Central and 32 State Secondary Education Boards.

**Figure 2.3:** Result Analysis of Various Boards of Secondary Education in India
(Data were collected from "The Results of High School and Higher Secondary Examinations - 2009, MHRD, Govt. of India").

![Bar Graph](image_url)

- indicates the Secondary Education Boards present in West Bengal.

The pass percentage for CISCE was 98.1, whereas, it was 81.7 for WBBSE and 80.8 for West Bengal Madrasa Board. The discrepancy will be more visible through the Table 2.1.
Table 2.1: Pass percentage of secondary examinations conducted by CISCE and WBBSE (2009) in relation to the gender of the students.

<table>
<thead>
<tr>
<th>Boards of Secondary Education</th>
<th>Pass %age (2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
</tr>
<tr>
<td>CISCE</td>
<td>97.7</td>
</tr>
<tr>
<td>WBBSE</td>
<td>86.8</td>
</tr>
</tbody>
</table>

The above table shows that, beside the discrepancy in total result, there is also discrepancy due to the gender of the students in their academic achievement. In case of the West Bengal State Board of Secondary Education the pass percentage for boys is comparatively higher than that for girls. But in CISCE Board, the Girls were quit more successful than their counterpart. The difference between the pass percentages of boys and girls were only -0.9% for CISCE and 10.5% for WBBSE. The negative sign, in case of CISCE, indicates to the opposite situation of the WBBSE.

From the above statistics it is very clear that the result which is the indicator of students’ academic achievement is discrepant one. There is a great variation among the results of school final examination conducted by the above mentioned boards. These variations may be, due to the different curricula and examination system followed by these boards. Beside these reasons, the student’s psychological factors cannot be ignored. The present researcher, hence, considers the psychological factors as the main condition for such discrepancy of the academic achievement.

Hence, the present researcher, on the basis of the above mentioned analysis of the achievement contexts made by the boards of secondary education and the relevant studies conducted on the academic achievement of the students under different boards of secondary education, felt a urgent need to conduct a study on this disparity of achievement of the students under state board and central board of secondary education in West Bengal to search the answer of the following questions:
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- Is there any impact of Achievement Motivation on Academic Achievement of the students of different boards of secondary education?
- Is there any impact of Test Anxiety on Academic Achievement of the students of different boards of secondary education?
- Is there any impact of Mental Health on Academic Achievement of the students of different boards of secondary education?
- Do the impacts of Achievement Motivation, Test Anxiety and Mental Health make any discrepancy between the Academic Achievement of the students of WBBSE and CISCE boards of secondary education in West Bengal?

According to the best knowledge of the researcher, many studies on the achievement correlates have been conducted in West Bengal, but there is no any research of this kind exploring the impacts of achievement motivation, test anxiety and mental health of secondary students studying under WBBSE and CISCE in West Bengal. Hence, this is the first study of this type in West Bengal in the field of Achievement Correlates. Therefore, it can be said very easily that the present study is emerged from the present context of educational, societal and national urgency and the researcher adopted Achievement Motivation, Test Anxiety and Mental Health to explore their impacts on academic achievement of the Students studying under different boards of secondary education.

2.4 FORMULATION OF THE PROBLEM

The experience of being an adolescent brings with it several life changes and challenges. Specifically adolescence, as defined by Hess and Richards (1999), is the “developmental period which spans the time between the onset of puberty and onset of adulthood”. Areas of change within this phase of life include physiological transformations due to the onset of puberty, psychosocial development in terms of establishing self-identity and relationships with peers, and cognitive development in terms of the ability to think abstractly and to solve hypothetical problems. For some adolescents these changes may particular challenges, for example, fulfilling social role expectations of the age group, such as the completion of formal schooling in late adolescence and making adult-like
decisions about future careers or education (Thompson, K. M., 2002). Secondary education final examinations, such as the Madhyamik Pariksha (WBBSE) and Indian School Certificate Examination (CISCE), held at the age of 15 – 16 years of the students what indicates that all the normal examinee are at the middle age of their adolescence. These exams tend to be highly competitive. Generally these exams can represent a potential stressor for some students because they are perceived as being important to them, mainly in terms of academic achievement and the need to do well in order to obtain gainful grades and to go on to further study with a good subject or diploma they like.

Rao (1994) reported that "Fear and excitement tear at the nerve ends of high school students in the early summer of every year." There are many cases of children running away from homes because they had not done well in their examination. The spirit of the present, the emergence of new responsibilities, new social and cultural needs, and tumultuous social change, the societal needs of specialist in every aspect of social activities, has made Academic achievement a rapidly expanding area of educational research interest. Academic preparation for higher education study always relates to prior educational experience in terms of acquired level of academic literacy, scholastic achievement, nature of previous educational experience, thoughtful selection of study at higher education levels, and type of secondary school attended. Hence, secondary education is the backbone as well as the basis of our higher education. Therefore, the achievement of the students in this level of education determines the future of students. After getting a handsome mark a student becomes eligible to get admission to study the subject of his/her choice. But, this is only the scenario of expectation. The real picture is quite different from it. In West Bengal, there are mainly four affiliating boards of secondary education to control the secondary education system as well as to certify the students according to their academic achievement in school final examination (fondly Madhyamik Examination). It is very apparent to observe the achievement ratio or the percentage of the students getting various divisions is not out of discrepancy. The result of the Madhyamik Examination or School Final examination for various Boards of Education is varied vastly. Therefore, now-a-day, one of the most persistent puzzles confronting parents, teachers and other academicians is uneven academic achievement among equally able students.
A great deal of work on Achievement Motivation has been done in India and abroad in relation to the academic performance of the students. Because, achievement motivation is one of the most important educational variables, contributes the academic achievement of the pupils in their school subjects. The achievement motivation is characterized by a desire to attain a high standard of excellence. Hence it works as a drive which assured the students in achieving their academic knowledge. An ideal student, specifically an ideal achiever should, as Pintrich and his colleague (1996)\textsuperscript{375} suggested, (i) exhibit some kind of control over their behaviours, motivation and affect, and cognition; (ii) be goal-oriented; and (iii) requires individual ownership of behaviour, and cognition. Finally, the cognitive strategies appear to be linked to the interplay between affect and cognition in relation to positive views, negative perspectives and fear of failure or success.

Identifying factors influencing student achievement and academic performance is a quest for most teachers and a primary goal of most educational researchers. The modern researchers nicely invented some of the factors of achievement, among which psychological, cognitive, personal and personality of learners, non-cognitive, environmental, and specially home and school factors are the mains. Social-cognitive theorists argue that students’ ability-related conceptions and value-related beliefs mediate their achievement related behaviours. Various psychologists through light on the constructs like self-concept, self-esteem, intelligence, emotional intelligence, parental supports, attitude towards learning, aptitude for achievement, well-being, adjustment behaviour, personality traits, anxiety, stress, depression, mental health, motivation – intrinsic and extrinsic, socio-emotional climate, socio-economic status of the family, gender, age etc. as the factors of academic achievement. Most of the educational researchers accepted that academic outcome depends on students marshaling up the motivation to go above and beyond comfortable conduct into the realm of difficult, effortful, superior academic behavior. Students who show poor performance are seen as unmotivated or incapable of self-determination. Therefore feel more optimistic with respect to their chances of academic success than individuals low in achievement motivation. This is also known to be an important predictor for academic performance. In fact, several
researchers have suggested that only motivation directly effects academic achievement; all other factors affect achievement only through their effect on motivation.

One, among many correlates of Academic Achievement, particular factors that may contribute to feeling of stress about examination is anxiety, more specifically, test anxiety. It is a major predictor of academic performance and various studies have demonstrated that it has a detrimental effect. Students with high test anxiety develop and maintain less complete conceptual representations of the course content. Test anxiety is a significant educational problem affecting millions of students in our schools and colleges. Research relating test anxiety to academic achievement has established that high levels of anxiety are associated with lower levels of performance in school. Often students at all levels of education perform more poorly on standardized tests than they ought to because anxiety and other test-taking deficiencies interfere with their performance. Cizek and Burg (2006) explain their belief about debilitating role of test anxiety in the following way:

“Because tests frequently result in the assignment of a grade or score- that is in an evaluation - test anxiety is experienced in testing situations by persons who feel threatened by evaluation. That threat is more likely to be aroused when a test taker perceives that the evaluation of his or her performance is likely to be low. That perception arises because the student believes that his or her knowledge, skill or ability is inadequate to perform successfully on the test. Interestingly, because whatever level of anxiety is aroused in a student often depresses his/her test performance, the test taker’s perception of the threat of evaluation turns out to be accurate, to a degree. That is anxiety causes a poor evaluation, which confirms the students initial perceptions regarding the (un)likelihood of success which reinforces evaluation as a threatening event”.

Researchers in the field such as Hancock (2001), Sarason (1980), and Spielberger and Vagg (1995) have characterized test anxiety as a relatively stable personality trait in which threatening situations generate debilitating psychological, physiological, and behavioral responses. Excessive anxiety may
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... have a detrimental effect on individual performance. Not only can test anxiety cause children to rush through testing in order to escape the unpleasant physical experiences, but also it may actually create an “invisible disability” of achievement stress that can extend throughout a student's academic career. The “flight or fight” response experienced as a part of test anxiety can lead to major changes in attitude and effort that include withdrawal, outbursts, overactive behaviors, fatigue, avoidance of school, and other depressive symptoms. Zeidner (1990) \(^\text{380}\), on the basis of his research, concluded that difference in test anxiety scores of male and female is due to gender difference in scholastic ability.

McDonald (2001) \(^\text{381}\) noted that the "fear of exams and test situations is widespread" and appears to be more prevalent than in previous years, possibly due to the increased frequency of academic testing and the great deal of importance placed on tests in educational environments. Since test anxiety appears to hinder students in many ways, research has investigated the relationships between test anxiety and a number of other variables. Higher levels of test anxiety have been found to be associated with lower exam scores, higher levels of perceived exam difficulty, poorer perceptions of health, and higher levels of avoidant coping strategies.

According to previous studies, factors that influence mental health are demographic backgrounds such as age and gender academic field and academic year, personality traits and loneliness. Many mental health problems that are experienced in adulthood are thought to have their origins in childhood and adolescence and, without some form of appropriate intervention, will persist as the individual grows older (McNamara, 2000) \(^\text{382}\). These situations also affect academic achievement. The studies reviewed in relation to academic achievement show that mental health problems have negative effects on academic achievement. The studies showed that emotional distress, depression and anxiety impairs concentration, causes absenteeism and trouble with homework, and impairs teacher-student relations. Anxiety causes students to view their own capabilities in a more negative manner. Depression in adolescence has negative effects on academic achievement, but further research is needed on this issue. Behaviour problems in themselves interfere with effective schoolwork and educational careers and cause maladjustment in the classroom, which in turn, has
negative consequences on academic attainment and contribute to poor academic achievement. There may, of course, be many reasons why children and youth are afflicted by mental health problems, which have little to do with school. However, the fact that mental health problems may cause academic achievement problems, which in turn have negative effects on mental health and other areas of life, makes it important to see to it that these negative consequences do not escalate. It should also be emphasized that studies investigating effects of mental health problems on academic achievement are underrepresented in the current reviews presented by the researcher.

Thus, the positive effects of achievement motivation and mental health, as well as negative effect of test anxiety on academic achievement of pupils have been well-documented in the literature. The effects of Achievement Motivation, Mental Health and Test Anxiety have been found to be major facilitating factor in school achievement. On the other hand, a large number of research studies indicated that achievement motivation have enormously contributed mental health and test anxiety as when a learner is inclined towards learning, it is obvious that he or she is achievement-motivated towards it. Hence, the present study aimed at determining the Impacts of Achievement Motivation, Test Anxiety and Mental Health on Achievement of students studying at Secondary Level of Education in various schools affiliated by WBBSE and CISCE. How far these variables affect the achievement of students at secondary education under different boards of education is still a question in the field of research in Education. Studies could be conducted to estimate the joint effects of these factors of achievement on the academic achievement of students. But no attempts have been made so far to investigate the joint effects of Achievement Motivation, Test Anxiety and Mental Health on academic achievement of students. Considering the inconsistency of secondary level students at the school level, studying under West Bengal Board of Secondary Education and various Central Boards, the researcher had chosen the students of secondary level under West Bengal Board of Secondary Education and Council of Indian School Certificate Examination as his population of study. In the present socio-cultural-educational context of institutionalized and specialized values where the potential academically low achievement is forsaken and high achievement is essential. Hence, Academic Achievement, a study with
reference to the impact of Achievement Motivation, Test Anxiety and Mental Health on it, is of real importance. But the researcher did not found any study conducted in West Bengal as well as in India, in relation to the impacts of Achievement Motivation, Test Anxiety and Mental Health on students’ Academic Achievement. Hence, the researcher made a humble attempt to fulfill the gaps in this area of knowledge through conducting a study on the impacts of achievement motivation, Test Anxiety and Mental Health on academic achievement of the students of high schools affiliated to the WBBSE and the CISCE Boards of Secondary Education.

2.5 STATEMENT OF THE PROBLEM

The problem as viewed above may be stated as –

"An Investigation into the Impact of Achievement Motivation, Test Anxiety and Mental Health on the Academic Achievement of Students at the Secondary Level under Two Different Boards."

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