

# Chapter 2

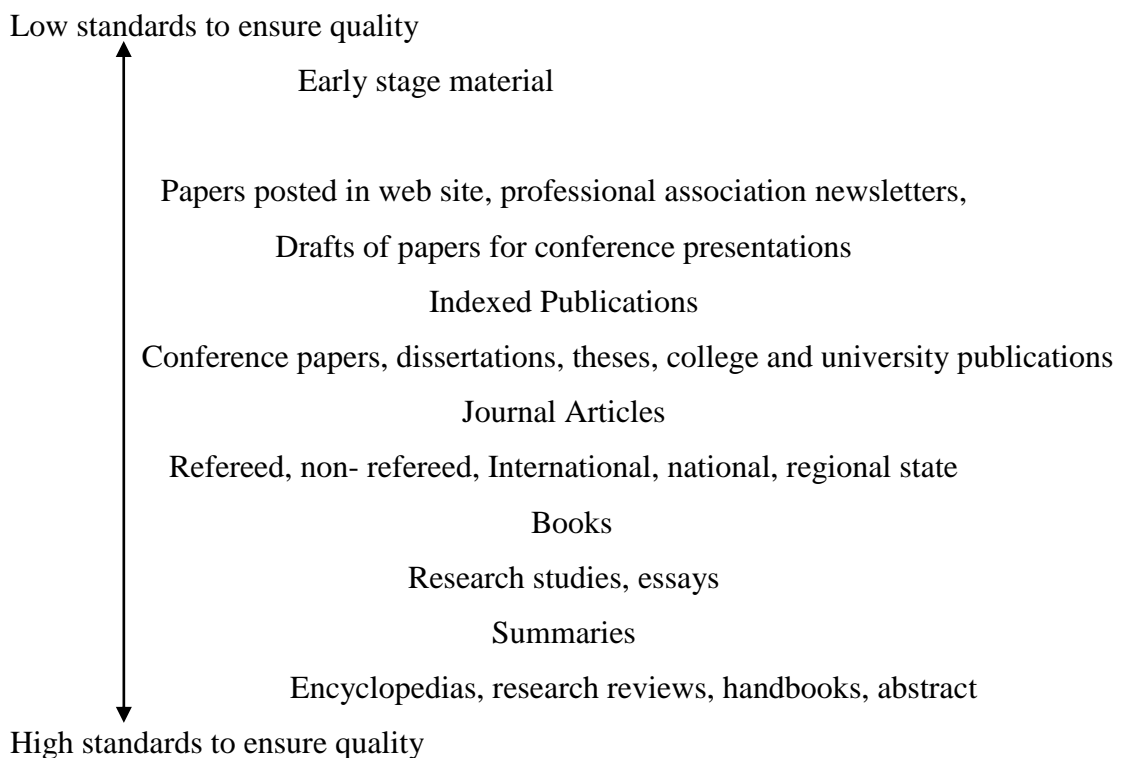
## REVIEW OF RELATED LITERATURE

Review of related literature plays an important role in the planning and then execution of any research work. Review of related literature is a written summary of articles, books, journals and other documents which acts a torch bearer for the present and the past and gives the deep insight regarding the topic. Review of related literature documents the need for proposed study. According to **Best (1963)** literature of the problem having the familiarity helps the students to discover what is known already, and what others have attempted to find out.

### 2.1 ORDERING OF SOURCES OF LITERATURE REVIEW

#### MATERIALS FROM SUMMARIES TO EARLY STAGE

##### MATERIAL



**Source: Libutti and Blandy (1995)**

Using this framework, the investigator started reviewing the literature by consulting summaries of research that synthesize numerous studies on the topic under consideration. From these broad summaries the investigator went through various journals, theses, dissertations, and finally to early stage materials.

The existing researches that are directly or indirectly related to present study may be classified under the following headings:

## **2.2 STUDIES RELATED TO LEARNING STYLES:**

**Laverne (1981)** conducted a study on the gender of the second language students and their learning style preferences. He found that there is no significant correlation between gender of second language students and their learning style preferences.

**Agarwal (1982)** a study on the learning style preferences of secondary students in with reference to their institution and gender. A sample of 120 students has been taken from the secondary school students from six schools by double-stage random sampling. The results of the study showed that boys and the girls were different from each other in their learning style preferences. The girls were found to have auditory long attention span different from the boys who were found to have visually short attention span.

**Hopkins (1982)** conducted a study on the learning style of non-traditional learners and the traditional learners enrolled in under graduate course. The results of the study showed that non- traditional students favored the independent, participant dependent styles while as the traditional learners showed good results by learning through the collaborative, competitive and avoidant styles. The results of the study showed that males and the females differ in their learning style preferences. The females indicated their preferences for the dependent, participant and collaborative styles while as the males favored the avoidant, independent and competitive learning styles.

**Pederson (1984)** a study on learning style preferences with reference to sex. The findings of the study revealed that there is no significant relation between the learning style preferences of the students with reference to their gender.

**Lemmon (1985)** stated “a school in Hutchinson, Kansas, reported, “that the students showed higher mean scores in reading and math than had achieved for the previous years when they were given freedom in taking the Iowa Basic Skills Test at the time of day and in the seating arrangement that best matched their learning styles”(as cited in Neely & Alm, 1992).

**Simmons (1986)** conducted a study on the modalities, academic achievement and the gender of 6<sup>th</sup> class students. The results of the study showed that no significant relationship exists between the gender and learning style modalities of the

6<sup>th</sup> class students. A North Carolina elementary school with a poverty level and minority population achieved 83<sup>rd</sup> percentile in three years in reading and math on the California Achievement Test which was previously 30<sup>th</sup> percentile. This change in the school was only due to the introduction of learning-styles instruction (**Andrews, 1990; Shaughnessy, 1998**).

**Melton (1990)** conducted a study on the Chinese EFL students from middle school to university level. He used the Reid's Perceptual Learning Style Preference Questionnaire in his study. His study was based on a sample of 331 students ranging from university to middle school level for studying the six learning style preferences. The results of the study showed the students showed preferences for various learning styles, and the most preferred one is the tactile learning style and the least preferred is the group learning style.

**Verma (1991)** studied the relationship between learning style and achievement motivation. The results of the study showed that no significant difference is found in the learning style preferences for flexibility vs non flexibility, Individualistic vs non individualistic, Visual vs aural, field dependence vs field independence between the low and high achievement motivated students. In other words results of the study showed that learning style preferences were independent of motivation.

In South Dakota, a Aberdeen school implemented the learning style model and reported that very good success was achieved by the implementation of learning styles by every teacher in the building (**Neely & Alm, 1992**).

**Soliday (1992)** conducted a study to examine the differences in preferred learning styles between non vocational education and the vocational education secondary school students. The findings of the study revealed the no significant differences in learning styles were found between the vocational technical education secondary school students with reference to their sex. However significant difference was found between the learning styles of vocational technical secondary school students.

**Varma and Thakur (1992)** conducted a study on cognitive style and scholastic achievement. The results of the study revealed that (A) Field dependent students showed better performance in social sciences and literature while as the Field independent students showed very high performance in mathematics and physical science (B) Females showed higher achievement in social sciences and literature while as the males showed very good performance in science and mathematics

**Vuren (1992)** conducted an experimental study to determine the effect of matching learning styles and instruction upon academic achievement of students receiving an interactive learning experience. The sample of this experimental study was 197 chemistry students enrolled in Inorganic Chemistry. The sample was bifurcated into groups which include: abstract sequential, abstract random, concrete sequential and concrete random as specified by the Gregorc Style Delineator. They were given style specific instruction in an interactive learning environment and were compared to a randomly selected control group. The results through analysis of variance “showed a statistically significant difference is found in academic achievement test scores between the control group, which received an unmatched tutorial, and the treatment groups which received a matched tutorial”. This study “provided empirical data which supported the use of interactive learning environments as a facilitator between the instructors’ teaching style and the students’ learning styles”. This study revealed that students academic achievement may enhance if the information is given to them in the way which best matches their style.

**Pandian (1993)** conducted a study on the learning styles and teaching strategies in higher education. The sample of the study includes 1200 science and arts students which were selected by multiple random sampling technique. The results of the study revealed that the cognitive style and the learner’s characteristics were found to influence their preference for teaching strategies directly and through learning style.

**Verma (1993)** a study on university level students, studied that the learning style of the students acts due to their locus of control. The results of the study revealed that locus of control does not have any significant relationship with the learning styles of the students. Also with the four learning styles as given by David Kolb the students were found to be alike with the internal and external locus of control.

A meta-analysis of forty-two experimental studies conducted with the Dunn and Dunn model between 1980 and 1990 by thirteen different institutions of higher education revealed that students whose characteristics were accommodated by education interventions responsive to their learning styles could be expected to achieve 75 percent of a standard deviation higher than students whose styles were not accommodated (**Dunn et al. 1995; Shaughnessy, 1998**).

**Rosati (1998)** reports data conducted a study on Canadian versus US engineering students. The reports of the data showed some differences on the MBTI. He revealed that there were no gender differences within engineering but there appear to be some differences associated with continuing or withdrawal.

In an interview conducted by **Shaughnessy to Rita Dunn**, commented, “those students achieve good scores whose teaching strategy has been changed from traditional to modern way of teaching by the teachers as was reported by the practioners throughout united states. From the findings of the study it was found that after six weeks about 25% of high school students passed the state level examinations and competency tests in order to receive the diplomas of the frontier, new York prior to using the learning style. The ratio of students enhanced to 66% in the starting year of the learning style (1987-88) (**Shaughnessy, 1998**).

The higher standardized achievement test scores resulted among previously failing students when they were taught with strategies that complemented their learning-style preferences although various students learn when the instructional material is provided through the ways that do not complement the learning style preferences (**Beglane, 2001; Burke & Dunn, 2002; Dunn, Griggs, Olson, & Beasley, 1995; Lovelace, 2005**).

**Wang, Hinnand Kanfer (2001)** found that learning style had no influence on either academic performance outcomes or upon student satisfaction for students using computer supported collaborative learning by using Kolbs learning style inventory. In this study the researcher looked at the changes over a period of time and if it was found the no change in the learning style occurred, it will be revealed the learning style has no influence on academic performance or satisfaction.

**Bandy & Young (2002)** conducted a study on learning style and the academic performance. They revealed that the change in the style occurs due to various teaching methods but they did not have a relationship against academic performance.

The scale of the Dunn and Dunn Learning Style Model was used in the schools of the district Freeport, Illinois. However all the students showed very high through the standardized achievement tests when using their learning styles. (**Burke & Dunn, 2002**).

**Verma (2002)** conducted a study on women’s learning style with reference to certain demographic factors and academic achievement. The objective of the study was to find out the relation between learning style of women with certain

demographic factors and academic achievement. The sample of this study included 406 women students of 12<sup>th</sup> class. The results of the study showed that private institutions women students were superior in relation to their independent, dependent and avoidant learning styles and the government school women students were superior to their counterparts on participant learning style; however the women students of arts stream were higher in the use of collaborative learning style than the women students of science stream; however significant difference in dependent, participant and avoidant learning style among high and low achieving women students on the independent and dependent styles, high achievers were superior than low achievers and in the avoidant learning style low achievers were higher than their counterparts high achievers.

**Lyan and Khaled (2003)** conducted a study on learning style profile of undergraduate learners at UK University in order to study out the relationship between individual differences and the learning style preferences of the learners. The results of the study showed the variations in the learning style preferences and the learners learn best when the information is provided in the manner which suits best with their method of processing and acquiring information.

**Lovelace (2005)** conducted a Meta-analysis of experimental research on the Dunn and Dunn Model. The results of the study showed that achievement of the students is increased by learning-style responsive instructions or improved the attitudes towards learning or both of all students.

**Mohr and Holtbrugge (2009)** conducted a study on the management students with reference to learning styles – A Cross-Cultural Perspective. The sample of this study included 953 students from 74 different nations studying in management courses at different universities in Russia, Ireland, Spain, Poland, China, Germany, USA and Netherlands was collected. The results of the study showed that the preferences for learning style differ across the countries and the cultural values also affect the learning style preferences of the learners. From the results of the study it is revealed that there exists important differences in the learning styles between the local and the exchange students and the male and female students.

**Zainol Abidin, Rezviee, Abbas Ali, Helan, Nor Abdullah, Kiranjit, Kour and Singh, Balbir (2011)** a study was conducted in a specific educational system on learning styles and overall academic achievement. In this survey study total 317 students participated in order to find the relationship. For this study a learning (LSS)

style instrument of Joy Reid's Perceptual Learning-Style Preference Questionnaire (1987) was used. For this study One way ANOVA and multiple regression analysis statistical techniques were used in this study. The analysis of the data showed a significant relationship between overall academic achievement and learning styles. It was also found from the findings that the high, moderate and low achievers have preference for the pattern of learning in all learning styles. Moreover, the framework of the learning style does not change with the subjects, whereas it actually plays a significant role across all the subjects.

**Lynne (2011)** a study was carried out to study on Students' learning style preferences and teachers instructional strategies. Correlations between matched styles and academic achievement. A data was collected from a sample of approximately 200 students from three schools in different north-western South Carolina districts. A quantitative approach utilizing a correlational design was used to analyze the data and produced Pearson r values for each content area respectively. These results have demonstrated a lack of significant correlation between variables.

**Gilakjani (2012)** the study was conducted to Study on Visual, Auditory, Kinesthetic Learning Styles and their impacts on English Language Teaching. This Study is an Analysis of Learning Styles for Iranian EFL university students. Over 100 students completed a Questionnaire to determine if their Learning Styles are Auditory, Visual or Kinesthetic. The Finding showed that Iranian EFL University Students Preferred Learning Style was Visual.

**Kumar et al. (2012)** a study was intended on the gender differences in Learning Style Preferences among Medical Students. A questionnaire was administered to 208 male and female students of 3<sup>rd</sup> and 4<sup>th</sup> year medical students during their course of forensic medicine course at SSR Medical College. The Students were allowed to choose multiple answers as per instruction given on the prescribed questions sheet. The scoring algorithm of VARK was then applied to identify the modality preference of each student. The results from a chi square analysis ( $\chi^2 = 0.710$ ,  $df = 3$  and  $p = 0.871$ ) indicated that there was no difference in learning preferences by gender.

**Mazumder and Karim (2012)** Conducted a comparative study on the patterns of learning styles on Students of USA and Bangladesh. The purpose of this study was to ascertain the comparisons and variances among students in learning styles by using Fielder-Silverman model and an index of learning styles, the data

were taken from the Bangladesh and American universities. In this study from the Statistical analysis was accomplished to classify the factors affecting learning style, like number of years spent in the school, social background, and academic achievement. The findings of the study show that there was no difference between the learning styles of American and Bangladeshi engineering students. However, the results discovered a difference between first year (freshmen) and final year (senior) engineering students on the sensing/intuitive dimension. Differences in learning style were also observed between students from diverse academic majors on the sensing/intuitive and visual/verbal dimensions.

**Smily, Victor, Ali and Vetrayan(2013)** a study was conducted on the learning style preferences in the university of technology of MARC students from the occupational therapy from the semester first, second and third were included in the study from faculty of health sciences UiTM Puncak Alam were included in the sample for this study a cluster sampling method was used for sample selection. Learning style questionnaire consists of 44 questions which help to predict the student's styles of learning out of 4 domains sensory/intuitive, visual/verbal, active/reflective and sequential/global. It was found from the findings of the study most preference learning style was visual (48.2%) followed by active style (16.1%). high preference was also shown on sensing style (10.7%), reflective style (8.0%) and sequential style (7.1%). However, preferences towards other styles were low; 5.4% for global, 2.7% for verbal and only 1.8% for intuitive Style. The maximum students obtained good CGPA were visual learner mostly fall into the CGPA range 3.00 – 3.49 (14.8%) and 2.50 – 2.99 (29.6%), whereas the less score were intuitive learner. But learning styles of students vary according to semester, academic achievement and gender. The findings of the study reveal no significant difference between learning styles of the students according to their academic achievement. However, it was found from the findings that low correlation between learning styles and academic achievement.

**Zuolkernan, Allert and Qadah** a study was conducted on “A Cross-cultural Comparison of Learning Style between the students of The AUS-UMD on computer science students with reference to the learning styles, background features and outcomes. From the findings of the study it was seen that there is strong similarities in learning styles of these culturally diverse students.



**Jawaid (2014)** conducted a study on the scientific aptitude and learning styles among college going science students of first year degree course Jammu division. The study was based on the sample of 296 (148 male and 148 female). The results show that no significant difference is found in the learning style belonging to rural and urban areas and it was found that there is no significant gender difference in four learning styles among college going students of first year degree courses belonging to high and lower levels of scientific aptitude. No significant gender difference have been found in components of scientific attitude among college science students of first year degree course belonging to urban areas.

### **2.3 STUDIES RELATED TO ACADEMIC ACHIEVEMENT:**

**Ramnachandran, R (1990)** investigation was conducted on the relationship between academic performances and other psychological variables reasoning, anxiety and adjustment the study investigates the influence of anxiety and adjustment on academic performance. A sample of 500 pupils of standard IX who were selected from the eight schools in Chidambaram Town. Tools used included Taylor's Manifest Anxiety Scale, Verbal and Numerical Reasoning Test-Part of the Intelligence test standardized by K. K. Pillai, Adjustment inventory of Tiwari and Sirvastava and school marks register. The collected data were treated using mean, S.D, t-test and coefficient of correlation. (1.) Academic performance was better among (a) girls than boys, (b) children of forward communities than those of backward community, and (c) children of educated parents than uneducated parents. (2) There was a positive and significant correlation between academic performance and total reasoning and numerical reasoning. (3) There was low negative correlation between academic performance and anxiety. (4) There was no significant relationship between academic reasoning and numerical reasoning. (5) There was a low positive correlation between academic performance and adjustment.

**Hari Krishnan, M (1992)** a study was intended on academic achievement of the students of the higher secondary stage in relation to achievement motivation and Socio-economic status. The objective of the study was to find out the relationship between academic achievement, achievement-motivation and socio-economic status among students. Through the random sampling technique a sample of 300 students were selected. The tools used in the study were school marks, the Achievement-Motivation Inventory of Prayag Mehta and Socio-Economic Status Scale developed

by the researcher. 'T' test and correlation coefficient were used for the data analysis. The findings of the study revealed that the girls obtained a higher mean in achievement than boys. Socio-economic status was significantly related to academic achievement and achievement was not related to achievement motivation.

**Mohapatra and Mishra (2000)** conducted a study to find out gender difference in achievement problems related to mechanics under Indian conditions. The sample taken consisted of 25 boys and 25 girls of Classes V, VII, IX of D.M. School, Bhubaneswar. Findings include (1) There existed large difference in achievement in mechanics. (2) In Class IX the 't' value was 0.09 which showed there was almost negligible difference in achievement in mechanics of boys and girls.

**Agarwal, A (2002)** investigated a study on relationship of academic achievement of boys and girls with intelligence, socio-economic status, size of the family and birth order of the child.

The study was intended to examine the relationship of academic achievement of boys and girls with intelligence, socioeconomic status, size of the family and birth order of the child. From the six institutions of Lucknow city a sample of 300 secondary school students of class 9<sup>th</sup> was selected. Further the Institutions were divided into three categories, i.e., poor, average, and good. Two institutions from each category were selected- one from boys and one from girls. Academic achievement (total marks obtained in final examination of class 8th), Prayag Mehta Intelligence Test, Socio-economic status scale by Kuppuswamy and a questionnaire for family size and birth order were administered for data collection. Pearson Product Moment Correlation and Critical Ratio (CR) were used for data analysis. It was found that significant positive relationship existed between academic achievement and intelligence for both the groups. There was significant negative relationship between academic achievement and family size of students. Significant negative relationship was also found between academic achievement and birth order of students.

**Robert H. Vela, Jr. (2003)** the purpose of the study was to investigate the role of emotional intelligence in the Academic Achievement of 1st year college students. The purpose of the study was to examine the role of emotional intelligence in the academic achievement of first year college students. The subject of the study included 760 first year college students from a selected university in South Texas. Each student completed a self-report emotional intelligence assessment. Descriptive statistics were used to examine the study. For this study Pearson's product-moment

correlation and multiple linear regression analysis statistical procedures were used to examine the relationship between emotional intelligence skills and the academic achievement of first year college students. SAT scores, gender, and ethnicity were also investigated as independent variables. The findings of the study showed that there is significant correlation between emotional intelligence skills and the academic achievement of first year college students. It also reveals that the significant relationship between emotional intelligence skills and academic achievement according to gender and ethnicity. Furthermore, the results showed that SAT scores, when coupled with emotional intelligence skills, can better predict academic achievement. Self-management skills were significantly related to academic achievement.

**Nuthana (2007)** the study focused on gender analysis of academic achievement among high school students. The study was carried out to make gender analysis of academic achievement among high school students on a sample of 600 students studying in 8th, 9th and 10th standards of which 325 boys and 275 girls. From two schools of rural and two of Dharwad city, Karnataka state the samples were selected randomly. In order to measure the study habits and self-concept of students, Patel's (1976) study habit inventory and self-concept scale of Singh & Singh (1988) were used. To collect the general information of students socio economic status scale developed by AICRP-CD (2002) was used and average of grades of two previous years was taken from school records as a measure of academic achievement. The data thus collected was subjected to mean, S.D, t-test and correlation. From the findings of the study the study revealed that majority of the students had good study habits and possessed high self-concept. Academic achievement was excellent among boys and girls. They did not differ on study habits, self-concept and academic achievement. It was revealed from the Class wise comparison of study habits and self-concept revealed that 8th standard students were better than 9th and 10th standards. There was significant association between study habits, self-concept, socio economic status and academic achievement among boys and girls. Study habits, self-concept and socio economic status were significantly related to academic achievement. It was found that rural students had better study habits and self-concept than urban students. Urban students had higher academic achievement than rural students.

**Treena eileen rohde, lee anne thompson (2007)** Conducted a study on predicting academic achievement with cognitive ability. The purpose of this study was to explain the variation in academic achievement with general cognitive ability and specific cognitive abilities. Grade point average, Wide Range Achievement Test III scores, and SAT scores represented academic achievement. The specific cognitive abilities of interest were: working memory, processing speed, and spatial ability. General cognitive ability was measured with Raven's Advanced Progressive Matrices and the Mill Hill Vocabulary Scales. When controlling for working memory, processing speed and spatial ability in a sample of 71 young adults (29 males) measures of general cognitive ability continued to add to the prediction of academic achievement, but none of the specific cognitive abilities accounted for additional variance in academic achievement after controlling for general cognitive ability. However, processing speed and spatial ability continued to account for a significant amount of additional variance when predicting scores for the mathematical portion of the SAT while holding general cognitive ability constant.

**Sharmistha Roy (2008)** a comparative study was conducted on adolescent boys and girls to study the factors affecting academic achievement. The purpose of the study was to determine the factors which effect on the academic achievement like daily routine of the students, tuitions, content viewed on television etc affecting the academic achievement of school going adolescent boys and girls. The factor group of the study consisted of top 10 rankers, both boys and girls from class 8th to 10th. Data was collected by the questionnaire method. Analysis was done by calculating frequency and percentage. Results showed that there is not much difference in the importance of many of the selected factors exhibited by boys and girls, which play an important role in their academic achievement.

**Farhana Qadir (2010)** a study was conducted on the scientific temper and academic achievement of rural and urban adolescent girls. The aim of the study was to compare the scientific temper of rural and urban adolescent girls on the various areas of scientific temper, to compare the academic achievement of rural and urban adolescent girls and to examine the relationship between scientific temper and academic achievement. For the study a sample consists of 200 girls were randomly selected from 10 higher secondary schools of district Srinagar and Pulwama. Among the 10 schools, 100 were selected from rural adolescent girls and 100 were selected

from the urban adolescent girls. Scales used for the present study which is constructed by Showkat and Prof. Nadeem which access five dimensions of scientific temper. The data was analyzed by applying Review of Related Literature Department of Education, University of Kashmir 19 t-test and correlation statistics. There was no significant difference found between rural and urban adolescent girls on curiosity dimension of scientific temper scale. Urban girls were found to have high academic achievement than rural girls and academic achievement have been found to be positively and significantly related with scientific temper

## **2.4 RESEARCH GAP**

The topic chose should me such as it has not been investigated earlier. From a review of research and after conclusion whatever researches the investigator could come across through his sincere efforts did not find any study which has been done either in the country or abroad, on the present topic the topic being new and have not been investigated earlier, the researcher has received the attention for this topic. Hence the newness of the topic is also one of the reasons for the choice of the present study. The above review reveals that many scholars have studied the different factors which affect the academic achievement of the students. However a comprehensive yet concise research work focusing on those closely related academic achievement and learning style.