Clearly education is in trouble in diagnosing the causes of this trouble, a short term view will not suffice to take our bearing calls for an historical perspective. Without history, current events and problems produce much pessimism. Past achievements not only give us courage, but also give us clues as to what has gone wrong in recent years.


The utility of reviewing past research provides an orientation for definition of problem, background for selection of procedure and comparative data for interpretation of results. In order to be truly creative and original, reading the past literature extensively would lead to critical thinking and exploration.

Educational achievement of students demands urgent attention to attain their goals. A numerous research has been conducted to contribute to determine the predictors of educational success of college students. A research work always takes the advantages of the information and the knowledge that had been accumulated in the past as a result of constant research endeavor by mankind. Research can never be undertaken in the isolation of the work that has already been done on the problems related to the study propose by any researcher. Every researcher reviews the related literature from the different resources that includes research journal, articles, books, magazines, encyclopedias, dissertations, abstracts, international year books, theses and most important in the present era the internet search engines. A detailed account of reviewed literature pertaining to variables under study, namely academic achievement, learning style preferences, sources of stress, coping strategies, and level of achievement motivation was undertaken for better understanding of the current educational scenario.

There exists a vast amount of research in the area of academic achievement/ performance of students. As a result, an attempt was made, to focus only on the main
variables- learning style preferences, sources of stress, coping strategies and achievement motivation in relation to academic achievement and effectiveness/ impact of the enrichment program with low academic achievement students. The scope of this review has been limited to studies dealing with psychological correlates of academic achievement in college population.

A search for peer reviewed articles on academic achievement/ performance, learning style preferences, sources of stress, coping strategies, and achievement motivation of college students published from 2000 till present was carried out using e- journals and articles databases such as- Ebsco, Pub med, J-Gate, Pro quest, sage journals, Springer, Psych info, Google scholar etc. Some of the keywords used were: college students, under graduate students, engineering students, science students, adolescents, academic achievement/performance, learning preferences, stress, well being, coping, achievement motivation, stress management, intervention etc. After reviewing the titles and abstracts online, full length articles were retrieved for detailed study. Only peer reviewed articles of original empirical research data was considered. Reference lists from relevant articles were examined and cross referenced to identify other relevant studies. In addition, manual access to published research abstracts in various psychological abstracts and reviewed articles and journals from different library facilities in National Institute of Mental Health and Neurosciences (NIMHANS), Indian Institute of Management-Bangalore (IIM-B), National Institute of Advanced Studies (NIAS), Institute for Social and Economic Change (ISEC), Bangalore University (BU) and Indian Institute of Science-Bangalore (IISC) was carried out.
For the sake of clarity, the studies were dealt with following sections:

- **Section I** - Academic Achievement.
- **Section II** - Learning Style Preferences.
- **Section III** - Sources of Stress.
- **Section IV** - Coping Strategy.
- **Section V** - Achievement Motivation.
- **Section VI** - Indian Studies.
- **Section VII** - Studies on Intervention Program.

Of these sections it focused on related variables from reviewed articles preceding empirical studies focusing on the subjects of above mentioned sections. They are not water tight categories and the variables overlap in many studies. As far as possible, the focus of the investigation has been used to categorize the studies. A brief evaluation has been included at the end of each section.

- **Section I - Academic Achievement**

This section presents the research studies on academic achievement/performance on related variables among different population. This helped the researcher to understand what factors influence academic achievement among student population.

**Diseth A, Pallesen S Brunborg GS, Larsen S (2009)** investigated the relationship between multiple predictors of academic achievement, including course experience, students’ approaches to learning, effort (amount of time spent on studying) and prior academic performance (high school grade point average) among 442 first semester undergraduate psychology students. Academic performance is both indirectly affected by the learning context as experienced by the students and directly affected by the students’ effort, prior performance and approaches to learning.
Thamavithya RN (2011) studied students’ perceptions of the factors affecting their academic performance. The sample of 228 fourth year students majoring in English at the School of Humanities, Bangkok University was considered. The results of this study shows that lack of study skills, difficult subjects, too heavy course load, pressure, stress, tension and anxiety are the noteworthy factors affecting their academic performance. Career issues, family and social adjustment, personal issues and perceptions of their lecturers do not have a strong impact in the completion of their academic tasks. Data collected from this research would help lecturers and educators in creating visionary programs, better learning environment, including better ways of relating with students to ensure academic success.

Mlambo V (2011) analyzed some determinants of academic performance (as measured by coursework exam grades) in an introductory biochemistry course plagued by chronic high failure rates. There were significant associations between entry qualifications and both gender and age. None of the investigated factors significantly affected academic performance. This observation could be a consequence of an impressive performance in the coursework exams by a large proportion of students resulting in less variation in the recorded grades. Learning preferences were found to be independent of both the age and gender of students.

Mushtaq & Khan (2012) conducted a study to explore the important factors that affect the students’ academic performance. Research was conducted on private colleges in Rawalpindi and Islamabad. It is found that communication, learning facilities; proper guidance and family stress are the factors that affect the student performance. Thus, it indicated that the communication is more important factor that affects the student performance and the learning facilities and proper guidance also have affected the student performance. Family stress also affects the student performance and reduces the performance of students.
Evaluation on Section I

From the above it can be seen that academic achievement seems to be influenced by a number of variables acting singly or in combination of so many other factors/variables. In the above literature mentioned some of the variables that were correlated with academic achievement are learning facilities, family stress, guidance, socio-economic status, self-concept, learning preferences etc. Some of the factors which influence academic achievement have already been identified by scholars and others still remain to be identified. It is with this objective the areas of determinants of academic achievement and ascertaining which factors are more important in influencing the academic achievement of students with respect to the Indian setting in the present scenario the current study was instituted. Also the literature helped the researcher to choose the criteria for academic achievement/ performance for the current study.

❖ Section II- Learning Style Preferences

This section of literature review details the importance of learning style preferences and academic achievement. According to Reid (1995) as cited in Mlambo V (2011) learning preference refers to a person’s “natural, habitual and preferred way” of assimilating new information. This implies that individuals differ in regard to what mode of instruction or study is most effective for them. “I hear and I forget. I see and I remember. I do and I understand.” (Confucius 551-479 BC) – A quote that provides evidence that, even in early times, there was recognition of the existence of different learning preferences among people. Thus this section helped the researcher to understand the relationship between the learning style preferences and academic achievement.

Abidin MJZ, Abbas AR, Abdullah HN & Singh KKB (2011) investigated learning style and academic achievement in a specific educational system. The results indicated a significant relationship between overall academic achievement and learning styles. It was
also found that the high, moderate and low achievers have a similar preference pattern of learning in all learning styles. Moreover, the learning styles framework does not change with subjects, were it actually plays an important role across all the subjects.

**Noraizan A et al (2011)** attempted to study students with some or no background in science and technology subjects (non S&T students) from the Information Management course in a Malaysian public university. It aims to identify students' learning styles on technical courses. The instrument used to identify students' learning styles is the Barsch Learning Style Inventory consisting of 24 simple questions. Findings indicate that visual is the most preferred while Kinesthetic is the least preferred learning style. This result applies to both male and female students in all programs of studies and at different levels of academic achievements.

**Gaius ED (2011)** examined learners’ preferences within a discipline. The learning profiles of second-year soil science students (n=62) were investigated using the VARK and index of learning styles questionnaires. Student performance was measured using quality points (course work and final exam). The results showed that students were mostly multimodal (25%) and kinesthetic (25%). Learning preference was not related to course performance.

**Alkhasawneh E (2012)** studied learning styles of nursing students at a public University in Jordan on a sample of 197 students. These students were at different academic levels. Almost 55% of students have a multimodal preference, about 60% of multimodal students have the kinesthetic learning preference (K) associated with visual or read write preference. Analysis of Variance revealed significant difference between learning styles and their academic level.
Evaluation on Section II

The studies reviewed in this section indicate the contradicting results on the parameters of academic achievement and learning style preferences. Majority of studies are among medical and other different courses but very few studies are been carried on pure science and engineering students. Vast majority of the studies reviewed in this section have employed predominantly questionnaire based method and have utilized sensory modality questionnaire. This helped researcher to choose the questionnaire for the current study.

❖ Section III- Sources of stress

This section includes studies on examining the sources of stress, and predictors of Psychological distress/ stress in relation to different variables among students population. It also includes studies examining coping strategies used by students.

Lindsay E (2009) surveyed first year engineering students. Students were asked to rate their stress levels and workload relative to normal, and they were also asked to give an absolute rating for their stress levels. Their self reported levels of workload and stress are compared to each other and to the number of hours reported for study and paid employment. This comparison shows that while in general workload and stress are indeed linked. In particular the link between absolute stress and workload appears weaker, suggesting that the issue may not be the actual level of stress, but rather the students’ perceptions of what constitutes a “normal” workload at a university level.

Rafidah K, et al (2009) investigated the relationship between stress factors, perceived stress and academic performance among 154 Pre-Diploma Science students in a Malaysian public institution. The results indicate that the students experienced stress but at a moderate level. There is a statistical significant difference between the level of perceived stress at the
beginning and middle of the semester but the correlation was statistically significant between the end of semester with academic performance of students.

**Calaguas GM (2011)** examined the perception of academic stress among college students in a state college in the Philippines highlighting gender differences. Statistical analyses showed that male and female respondents differed significantly in their perceptions of subject, teacher, schedule, classroom, and expectation-related stressors but did not significantly differ in their perceptions of enrolment and admission, classmate, and financial-related stressors. Generally, no significant difference was found between male and female respondents in their perception of academic stressors.

**Elias H et al (2011)** investigated the stress and academic achievement of 376 undergraduate students in a local university from different disciplinary areas. Academic achievement of the undergraduate students referred to their results, Grade Point Average (CPA), for the previous semester. The College Undergraduate Stress Scale (CUSS) was used to evaluate students’ stress level. The findings of the study showed that overall, undergraduate students experienced moderate stress levels. Most sources of stress were from academics. It was also found that there is a significant but weak negative relationship between stress level and their academic achievement.
Evaluation on Section III

The studies reviewed in this section indicate that education is stressful. Studies examining Psychological distress among students have consistently reported the prevalence rate of depression, anxiety and Psychological distress are high in this population than estimates in general population. Studies reveal that although certain stressors remain constant throughout their education and some appear to differ at different phases of education, academic concerns and inadequate time management, failure, curriculum overload, etc are common sources of stressors. Evidence of gender difference among students on stress variables is inconsistent with some studies indicating that female students being more vulnerable to experiencing distress, while other studies report no gender differences.

The findings across studies imply that there is a need to develop group based programs for students targeting stress management that should be made available to them at the start of their course or part of their curriculum. Data obtained in the few studies reviewed have been qualitative, it is seen that interviews as a source of data have enriched the findings in this area. Only few studies reviewed have employed a combination of qualitative and quantitative methods.

Majority of studies are in general and other different courses but very few studies are been carried on science and engineering students. A vast majority of the studies reviewed in this section have employed predominantly both qualitative and quantitative methods. This also helped researcher choose the assessment method for the current study.
Section IV- Coping strategies

This section presents the studies conducted in relation to coping strategies and academic achievement. Coping is a process that can be defined as ongoing cognitive and behavioral efforts to manage psychological stress to protect psychological and physiological well-being. (Lazarus 1993). Thus the attempt is made to understand the coping strategies adopted by the students’ community.

Andrea L. Dwyer & Anne L. Cummings (2001) examined the relationship of self-efficacy, social support, and coping strategies with stress levels of university students. Seventy-five students completed four questionnaires assessing these variables. Significant correlations were found for stress with total number of coping strategies and the use of avoidance-focused coping strategies. As well, there was a significant correlation between social support from friends and emotion-focused coping strategies. Gender differences were found, with women reporting more social support from friends than men.

Brougham RR, Zail CM, Mendoza CM, & Miler JR (2009) examined the sources of stress (academics, financial, family, social, and daily hassles) and coping strategies (self-help, approach, accommodation, avoidance, and self-punishment) of 166 college students. The relationship between sex, specific sources of stress, and coping strategies was also investigated. Results found that women reported a higher overall level of stress and greater use of emotion-focused coping strategies than men. Also men and women reported utilizing different coping strategies for different stressors; however the use of emotion-focused coping strategies dominated over problem-solving strategies for both men and women.
Alimoglu MK, Gurpinar E, Mamakli S, & Aktekin M (2010) examined the coping strategies of 152 medical students and to investigate the effects of coping strategies on student satisfaction and academic achievement with different instruction methods. The majority of students (80.9%) adopted problem-focused coping. Problem-focused coping scores decreased over time. Problem-focused coping positively correlated with satisfaction with practical’s and practical exam scores, whereas emotion-focused coping showed the same correlation negatively.

Wang et al (2012) examined the roles of reasons for living and coping in protecting against suicidal behaviors among 361 black college students. Results of a path analysis revealed that reasons for living mediated against suicidal ideation through an inverse effect on depression. Results also indicated that greater use of emotion-focused coping may lead to suicidal ideation through increased depression and decreased reasons for living where as avoidance oriented coping protected against suicide.

Evaluation on Section IV

The studies reviewed in this section indicate that the majority of students employed emotion-focused coping strategy, while problem focused-coping was found to predict better adjustment. Examination of coping strategies employed by college students indicated that emotion-focused coping strategy were most commonly used, while problem-focused coping was found to predict better adjustment. The findings across studies imply that there is a need to develop group based programs for students targeting coping skills training that should be made available to them at the start of their course or part of their curriculum. This helped the researcher to gain insight in developing an enrichment program for students. Also it is seen that the method of assessment used were qualitative in nature in some studies, this helped researcher to adopt the qualitative method in the current study.
Section V Achievement motivation

This section helps to understand whether achievement motivation is responsible for good academic performance. According to Ertan (2008) as cited in Aydin F & Coskun M (2011), Achievement motivation is one’s inner drive to achieve. There were number of factors that affect performance in school/college. Motivation in education affects the level of the learning of individual as well as they reflect to their behaviors what they have learned or not. The motivation of students represents the active participation of the students in learning process. The curiosity and interest of the students manifest itself with the connection to the subject learned, focus on the process of learning lesson and the joy of learning. Thus the attempt was made to understand the achievement motivation in the present section.

Amrai K, Motlagh SE, Zalani HA & Parhon H (2011) explored the correlation between academic motivation and academic achievement among 252 Tehran University students. Data analysis indicated positive and significant correlation between Academic Motivation and Academic Achievement. Furthermore subscales of task, effort, competition, social concern within eight subscales had a significant relationship with academic achievement.

Bakhtiarvanda F, Ahmadiana S, Delroooza K, & Farahanib HA (2011) explored to study the moderating role of achievement motivation on relationship of learning approaches and academic achievement among 200 college students (100 female and 100 male) including psychology and educational sciences students. Learning approaches and achievement motivation questionnaire were administered; the last academic averages were gathered as academic achievement. The findings revealed that the achievement motivation moderated relationship of learning approaches and academic achievement significantly.
Onete OU Edet PB, Udey FU, & Ogbor BP (2012) examined the relationship between first year education students’ achievement motivation and their academic performance. A total of 750 students were randomly selected for the study. The instrument used for the study was “Education Students’ Achievement Motivation Scale” which was adapted from Cofer and Appley (1964) Achievement Imagery and Grandal and Grandal (1965) Modified Intellectual achievement Questionnaire. The results of the study indicated that neither students’ academic achievement motivation nor students’ social achievement motivation had any significant influence on education students’ academic performance.

Evaluation on Section V

The studies reviewed in this section indicate a mixed result on the relationship between achievement motivation and academic performance.

❖ Section VI-Indian studies

This section helps to understand the research carried out in Indian setting based on the conceptual framework and models generated in the west. Few studies have examined achievement in terms of its determinants. To gain a better perspective regarding the Indian research arena, studies that have considered the variables of interest in general have also been included in this section.

Rao, Moudaad, & Subbakrishna (2000) studied 258 male and female undergraduate students to identify coping behavior in response to academic and interpersonal stressors. For both stressors the coping responses reported was a combination of problem and emotion-focused strategy including support utilization. In response to academic stressors, students reported use of self-blame while in response to interpersonal situation “withdrawing to think over things” was more common. Gender differences in use of emotion-focused coping were
present. Females preferred distress reducing strategies and social support utilization while male reported active behavioral methods including high risks coping behaviors.

Agrawal RK & Chahar SS (2007) explored the extent and types of role stresses present among the engineering and management students in India. The findings reveal that students experience role overload, role stagnation and self-role distance. Male students experience higher levels of role stagnation than female students. However, no significant differences could be observed on any of the role stressors between first year students and their seniors, or between management and engineering students.

Parthasarathy RR (2009) examined the coping patterns of 120 pre-university students studying in Bachelor of Arts, Science, or Commerce, including both of the sexes. The tools such as, socio-demographic data sheet and coping checklist, were used. The study findings revealed that majority of the students adopted emotion- and problem-focused coping strategies. Most of the female students adopted emotion-focused coping strategies, whereas the male students mostly used problem-focused coping strategies.

Bakara et al (2010) examined the relationships between the achievement motivation, attitude and student academic performance. Data were collected by self-report questionnaire from 1484 students from a local university. Results indicated a positive significant correlation between students’ attitude towards learning and achievement motivation and between students’ attitude and academic achievement. However, a negative and low correlation was observed between students’ achievement motivation and their academic achievement.

Majumdar & Ray A (2010) explored the general stressors as perceived by the first year postgraduate students of Physical Sciences and Social Sciences. Data was collected invoking top-of-the-mind responses about the issues in question and was analyzed through content analysis involving inductive coding. Subjects reported being assailed by mostly
psychological consequences of stress - such as tension, anxiety, worry, temper tantrums and hopelessness. Most subjects reported employing problem-focused coping to deal with stress.

Kadhiravan & Kumar K (2012) adopted quasi-experimental design. Forty-four undergraduate computer science students were assigned to control group and forty-four students were assigned to experimental group. A training module was developed to promote proactive coping strategies and general self-efficacy and utilized as an experimental intervention. From the result, it is found that the developed training is effective in enhancing proactive coping and general self-efficacy of college students.

Evaluation on Section VI

The above reviews of literature have touched on perceived stress, coping strategies employed and level of achievement motivation and very few on learning style preferences among college students on different streams. Results of the above studies indicate that general psychological distress was reported by a significant percentage of students’ population. Academic stressors were found to be a major source of stress and most of the students adopted emotion-focused coping, especially women adopted social support as a most preferred coping strategy as compared to men. In terms of motivation, learning and achievement, results indicated a positive significant correlation between learning and achievement motivation but, low correlation was observed between students’ achievement motivation and their academic achievement.

The above literature reflects that there is paucity in the study which has not been investigated on academic achievement among science undergraduate students. Also it is seen that the dearth of literature pertaining to enhancement of academic achievement and no adequate intervention designed to improve academic achievement. In the Indian scenario there are only few studies conducted in this line. It is thus necessary to concentrate research on enhancing the academic achievement and well being of students. A greater knowledge of
academic achievement issues might help in planning the intervention and alleviate the problems faced by students.

Thus there is a need to examine the psychological factors affecting academic performance among undergraduate science students population.

❖ Section VII- Studies on Intervention

This section helps researcher to understand the studies that have been conducted in relation to intervention provided to students on different variables related to academic achievement. This helped researcher to understand different variables considered and also to gain insight regarding the intervention. It also would help researcher to frame the intervention program in the current study.

Chinaveha, M, Ishakb, NM, & Sallehb MB (2010) examined the effectiveness of Multiple Stress Management Intervention on academic performance and mental health among undergraduate students. Sixty students were randomly assigned to either a stress-management training group, or a non-training control group. During the 8-week period, sixteen 2-hour session interventions were conducted for the experimental group. Results indicated that there is an increase in the academic performance and mental health measures in the experimental group.

Hasela KM, Abdolhoseini A, & Ganji P (2011) investigated development of a model on hardiness training program to determine whether perceived stress could be reduced and hardiness could be increased among college students. Twenty seven college student volunteers placed in experiment group, and twenty nine placed in witness group. The participants completed pre-test for hardiness and perceived stress measures. Then experiment group received a six-week hardiness training program. Post-test were completed after the 6 weeks. Changes in hardiness scores were significant. There were also a significant change between pre-test and post-test scores of perceived stress indicating that hardiness training
program had increased hardiness levels and decreased perceived stress levels at the same time.

Baqutayan, SMS & Mai, M (2012) explored the stress, strain and coping mechanisms among fresh college students. The purpose is to understand stress related problems, and suggest suitable solutions. 120 first year students of a university were equally divided into experimental and control group. Classes were given only to experimental group on how to cope with academic stress. Hence, their levels of stress were measured twice, before and after the experiment. The findings of this study indicate that there are significant differences between the experimental and the control group in relation to stress, strain and coping mechanisms. Eventually, the experimental group proved to cope with academic stress better than the control group.

Chinaveh, M (2013) examined the effects of multiple stress management intervention (MSMI) on coping responses, and stress symptoms among Iranian students. Sixty students with high scores for avoidance responses, stress and low scores for approach responses were randomly assigned to one of two groups: the experimental group or the control group. During the 8-week period, sixteen 2-hour session interventions were conducted for the experimental group. Both groups responded to a Set of questionnaires before and after intervention. Significant differences were found between two groups regarding the dependent measures. The results on the effects of MSMI were stable over time. These findings indicate that multiple stress management intervention has a positive effect on coping responses, and stress.
Evaluation on Section VII

Empirical data has consistently indicated the significance of academic achievement and also the prevalence of psychological distress among college students. Despite the empirical evidence and consistent recommendation by several authors to deal with this concern, there is a paucity of published literature examining the improvement of academic achievement and impact of wellness modules aimed at reducing stress and enhancing well-being among student population. The recommendation unfortunately has not translated into action particularly in general university student population.

There is a limited published literature available empirically examining the impact of intervention programs to reduce stress and facilitate adaptive coping in college students in the Indian student community. The effort should be made to reduce the college student population stress/problems related to academics as well in a systematic manner.

The empirical evidence through student feedback suggests that intervention have aided in enhancing student well being. Of the studies reviewed in this section most of the studies have focused only on two variables like stress management and coping skills. And the research reviews indicates that the programs that have been given has been useful. It has been suggested that the intervention program should be offered as an integrated part of college curriculum to students. It is also seen that not much of the intervention studies been carried out with this population in India. Therefore the need is felt to examine the feasibility/effectiveness of intervention program in the current study.
Summary and general evaluation

Over the past few decades researchers have shown increasing interest and concern in the study of academic achievement and its underlying factors across various sub-groups of population, including student population. Yet not much attention has been focused to study the low academic achievers and how they cope with the situation.

The review of literature highlights the paucity of research in this area both in the west and in India. There have been few systematic efforts to understand the needs and concerns of the college student population in the field of academics and career. There is a strong need to study students’ failure to perform well. This would help the stakeholders of educational sector to evolve strategies in addressing issues associated with students’ educational performance.

A review of literature showed that few studies have looked at the academic experience of students in India. Bulk of studies on academic achievement and associated factors have been from other countries and it is difficult to estimate the extent to which the findings may be generalized to the life and experiences of young adults in the contemporary Indian society. Therefore the dearth of Indian studies creates a special need to look at young adolescents in terms of their experiences of learning style preferences, sources of stress experienced, coping strategies employed and level of achievement motivation.

The Lack of opportunities to achieve required academic performance gives rise to problems for students, parents, and educationists. While many studies have focused on high academic achievers, very few studies have probed into low academic achievers. The findings of this research will enhance the understanding about learning style preferences, sources of stress and coping strategies employed, and level of achievement motivation. This has
implications in evolving and promoting interventions by individuals, organizations and communities.

Education has been an area of interest to the researcher. The genesis of this research topic has come about from personal experience of the researcher and young individuals during their college life. The observations of students’ reactions towards parental expectation and demands have equally contributed to conceptualize this research idea. Thus a strong need was felt to systematically study and assess these young students who were exposed to stressors by academic achievement, especially low academic achievers and suggest ways to enhance the academic achievement.

The following Chapter III on the research methodology includes a description of the target population, instruments utilized and data collection procedures.