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Research Paper

Relationship between Learning and Study Strategies and Academic Achievement Among Students

Dr. Beena Daliya[1], Trishala M.[2]*

ABSTRACT

To do well in school and for enhanced academic success, effective Learning and Study strategies are important. The objectives of this research work is to find the relationship between the learning and strategies and Academic achievement among students. To do this, Learning and Study Strategies Inventory (LASSI) - Weinstein & Palmer, (2002) was administered to a group of 8th std., school students, consisting of both boys and girls. These students were selected from private schools of Bangalore; all the 4 zones – north, south, east, and west - were represented. All the students chosen were studying the state syllabus. The results of the research indicate that academic achievement is significantly related to levels of anxiety, attitude, concentration ability, selection of main ideas, effective time management and test taking strategies.

Keywords: *Learning strategies, Study strategies, Academic Achievement*

Education provides considerable value to individuals; it helps each individual to make of himself all that is possible for him to become. Good academic performance and high percentages in examinations are often considered as predictors of academic success. In order to have a good performance in exams and to enhance academic success, study skills should be effective which majorly comprises of authentic learning techniques and study strategies. This can have a immense impact of the academic achievement along with other mental and cognitive abilities.

Academic achievement is an immediate evaluation of the learning effectiveness of students. It is one of the important rationales to assess the effectiveness of teaching, impact of education and a measure of holistic growth and development of students. Academic is a term which is in simple terms explained as "academic work, student work, school work" (Pandey et al., 1996). Achievement refers to the process of students completing the work and attaining a level which they can achieve after a fixed educational training and performance refers to the that a student can achieve after a series of education or training, while performance refers to the outcome from an examination in a particular subject or a complete course (Lamas, 2015). However, some researchers believe that achievement is equivalent to scores/grades. Hence, because of these differences in understanding concept of achievement

[1]Associate Professor, Department of Science, Christ Academy Institute for Advanced Studies, Karnataka, India.
[2]Assistant Professor, Department of Science, Christ Academy Institute for Advanced Studies, Karnataka, India.
*Corresponding Author

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and scores there are various definitions for the term academic achievement (Brookhart et al., 2016). Nevertheless, to attain good academic achievement the mental and cognitive abilities are important, but this does not indicate that high intelligence leads to high academic achievement. As the learning styles and study skills are equally essential (Fong et al., 2017). The learning strategies and methods for studying used by students in understanding the concepts, evaluating their study and acquiring the knowledge also plays an important role in achievement (Liew et al., 2015).

Learning strategies refer to all the psychological methods used in a particular scenario by a person with an intention to acquire knowledge, skill, and ability (Khadivzadeh et al., 2002). Learning and study strategies basically include thinking patterns, behaviors, opinions, motivation, drive, ideas, and beliefs which are primarily associated with learning successfully, and that which can be boosted through interventions provided by the institutes. Works by Loret (2011); Lozano et al., (2011); Tejedor & García (2008) reveal that a clear relationship is present between learning strategies and academic performance which emphasizes the essentiality to comprehend the meaning of learning strategies. This term has been defined in various ways by various authors. According to Perez (2001) It is a " *set of procedures and techniques used intentionally, coordinately and contextually for process new information and try to achieve meaningful learning*." Learners, through learning strategies, tend to keenly indulge in the active learning process, which will help to build connections between the newly learnt content or materials with that of the previous information, and this will also help in continuously monitoring the learning procedures of students (Shahidi & Moghimian, 2005).

Study skills refer to the ability of students to use effective techniques and methods to complete a learning task successfully (Gall, 1990). In other words, students with strong study skills can apply them effectively to understand and master their academic work. On the other hand, those with weak or ineffective study habits may struggle with the same tasks due to poor strategy choices or an inability to apply good study strategies. Developing good study skills is crucial because they not only enhance academic performance but also help students become more independent learners which is an essential skill for higher education. Without effective study strategies, students may find it difficult to meet the demands and expectations of different educational levels.

Learning and study strategies/skills are an organized set of behaviors, actions, measures, opinions, skills, attitudes, or thinking patterns which help a student in efficient coding process that further assists in combining new information with the previous information, which can later be retrieved at the pursuit of the person. These are vivid ideas that majorly focus on influencing how information processing is happens with a learner and the manner it is used for completing a task. The sole purpose of these strategies is to teach learners to become self-reliant and independent in nature, achieve academic success, enhance the self-confidence (Weinstein & Mayer, 1986) so that they can scrutinize themselves and use necessary strategies to examine their success, motivate up individual responsibility and be motivated for such and situations so that they monitor their success (Weinstein & Palmer, 2002), take responsibility for it, and be motivated. Along with this, having the knowledge on which learning strategies will be helpful for academic success is quintessential for students, as they can directly influence their achievement.

Research has shown that students do not naturally develop effective study habits on their own. Without proper guidance, they may struggle to use the right strategies for learning and

simply expecting students to figure out how to study effectively is not sufficient. As they need clear instruction and structured support to develop these skills. This is why systematic training in study strategies is very important. When students are taught how to organize their learning, manage their time, and apply effective study techniques, they are more likely to succeed academically. Without this training, many students may feel overwhelmed or resort to ineffective methods that do not help them retain information or perform well in exams. Extensive research in this area highlights how crucial learning and study strategies are for academic success. Developing strong study habits not only improves students' performance but also builds their confidence and independence as learners, equipping them with skills that will benefit them throughout their education and beyond.

LITERATURE REVIEW

Sember et al. (2020) conducted a study to assess the independent learning programs for students who had strong mathematical abilities but conversely, had low academic performance at school levels. This study found that with the right supportive methods, such as time management strategies, students showed considerable improvements in their academic achievements and performances. Their study proved this when the performance of the control group improved from -0.16 to 0.17, reflecting positive progress.

The results of this research study correspond with another study conducted by Mas-Tur et al., (2020) conducted in Germany and Spain. The results showed that factors like interest and focus of students in reading can positively affect the grasp and comprehension, thereby helping students to understand the concepts better, with a value of $y = 0.21$.

Yip et.al's (2005) in their study tried to examine the precise study techniques that impacted academic performance at school and college levels as well as examined if the study techniques found efficient at school level also worked at university level. A revised version of the Learning and Study Strategies Inventory (LASSI) developed by Weinstein, Zimmermann, & Palmer (1987) was used for their study. This research revealed that significant difference between the high and low achievers in school, based on the study strategies used. However, such differences did not emerge for university students.

Anzi & Owayed (2005) conducted a study to examine the association between academic achievement and anxiety, self-esteem, optimism, and Pessimistic attitude. The study was done on a sample of 400 male and female college students. The results revealed positive and significant relationships between academic scores and optimism and self-esteem; and negative and significant correlations between academic achievement and anxiety and pessimism.

Slotte, Lonka & Ylänne (2001) conducted two studies to explore gender differences if any, in the use of spontaneous study-strategies when studying from text books. The results of both the studies revealed important and significant differences between boys and girls in the use of study strategies: girls, more often than boys, applied explicit study strategies, especially for note taking. However, no gender differences were found in comprehending both philosophical and statistical notes. The results seem to imply that different learning outcomes may be more a result of the use of different study strategies rather than gender per se.

Synder (2000) analyzed the relationships among multiple intelligence, learning styles and Academic/scholastic achievement in 128 higher secondary school students. The analysis

revealed that 81% of the students were tactile learners who needed hands-on experience and learnt by doing things and putting them into action rather than just hearing, watching or listening. 64% of the students were also global learners. A positive correlation was also found between academic achievement test scores and two types of multiple intelligences - logical and linguistic as well as one learning style – visual.

Summarizing, these research studies underline the importance of both cognitive factors such as concentration and information processing, as well as non cognitive factors such as anxiety, attitude etc on academic achievement. The use of effective study techniques is found to assist in academic performance. The use of specific study strategies difference across levels of study and between the two sexes. However, most of these studies have been conducted in the West and there is a lacuna with regard to Indian studies. Moreover, several researchers have studied college and undergraduate students. This study is an attempt to fill part of the lacuna with respect to the correlates of these variables in Indian high school students.

METHODOLOGY

Objectives

To determine the correlation between academic achievement and the different Learning & Study strategies among students.

Hypothesis

Academic achievement will be significantly correlated with the different Learning and Study strategies assessed.

Sample

The sample of the study consisted of 684 students, of which 363 were boys and 321 were girls. These students were selected from private schools of Bangalore; all the 4 zones– north, south, east, and west - were represented. All the students chosen were studying 8th std. from the state syllabus (SSLC). The mean age of the sample was 13.18 years [SD = 0.58] for boys and 13.27 years [SD = 0.57] for girls. Order of birth indicated that 38.5% were first borns, 32.4% were 'last' born, and 8.9% were 'only' children.

Tools

Given below is the description of tools administered for the study:

1. **Socio demographic data sheet.** A personal data sheet was developed to elicit demographic details relevant to the study. Marks in the last examination were obtained as an indicator of academic achievement
2. **Learning and Study Strategies Inventory (LASSI) –** Weinstein & Palmer, (2002). Learning and Study Strategies Inventory (LASSI) consists of 80 items assessing 10 different study strategies. There are 8 items per strategy. It assesses a students' knowledge about and application of study and learning strategies which have been shown to enhance academic success and which can be learned and applied or improved during academic interventions such as study skills program and learning strategies programs. The authors report adequate psychometric properties for the scale. Co-efficient Alpha for all except two scales (attitude and study aids) is above 0.80. The scale appears to be reliable and valid and has been used in other studies conducted in India (Soujanya, 2006).

The 10 sub scales are as follow:

- ***Scale for Anxiety*** which measures the extent to which students are concerned, anxious and worried about their academics, school and their performance in school. Lower the scores on this scale, higher is the level of anxiety experienced.
- ***Scale for Attitude*** which measures the interest and attitude towards school and academic performance. Lower scores on this scale indicate negative attitudes.
- ***Scale for Concentration and attention*** which measures the ability to focus and maintain concentration on academic and learning tasks. High scores reflect higher levels of attention and concentration.
- ***Scale for Processing of information*** which measures the effective use of verbal explanations, images, structuring and organizing strategies, and analytical skills to comprehend what is being learnt. Lower scores indicate poorer ability to adequate process incoming information.
- ***Scale for Motivation*** measures the will, inclination, self-discipline, and readiness to put in the required effort to productively accomplish learning tasks. Lower scores indicate lower levels of motivation.
- ***Self-Testing Scale*** measures the extent of self monitoring and review of the learning process. Lower scores indicate lower levels of self reflection and self review.
- ***Selection of Main Ideas Scale*** measures the ability to identify and recognize the central idea and to separate relevant and essential information from irrelevant and less essential information. Lower scores indicate poorer ability in selecting the main ideas.
- ***Scale for Study Aids*** measures the use of extra aids, resources and supports to assist study and retain information. Lower scores indicate lower ability in effectively using study aids.
- ***Scale for effective Time Management*** measures the ability to effectively utilize available time to accomplish academic goals. Lower scores indicate poorer time management skills.
- ***Scale for Test taking Strategies*** measures the ability in using strategies for effective preparation of tests and test taking strategies. Lower scores on this scale indicate weaker test taking strategies.

The tools were group administered to the students in the classroom; common instructions were given to all the students. The approximate time taken for the completion of all the questionnaires was 60 minutes

ANALYSIS OF RESULTS AND DISCUSSION

The responses to the questionnaires were scored as per the instructions given by the test developers. The results obtained were then subjected to appropriate statistical measures to test the stated hypothesis.

Pearson's product moment correlations were computed to study the relationship between academic achievement and the different learning and study strategies and to prove hypothesis. The results are presented in the below table.

Table 1 Showing the product-moment correlation between the sub scales of LASSI and Academic achievement

Scale	Academic Achievement
Anxiety	0.10**
Attitude	0.15**
Concentration	0.15**
Information processing	0.05 ns
Motivation	0.06 ns
Self testing	0.05 ns
Selecting main ideas	0.10**
Study aids	0.01 ns
Time management	0.08**
Test strategies	0.10**

** $p < 0.01$; ns = non significant

The results presented in Table 1 reveal that the following sub scales of LASSI viz., anxiety, attitude, attention and concentration, selection of central ideas, effective time management and self test strategies are positively and significantly related to academic achievement. These results imply the following:

- Students who do not worry about their school and their performance in school do well in academics,
- Those who show an interest towards school and academic success do well in academics
- Those who have the capability to focus and sustain concentration on the learning task do better in their academics
- Those who can recognize the central idea of what is being learnt and segregate the essential from the non-essential – thus paying more attention to significant information do better in academics
- Those who show effective scheduling & appropriate time management skills accomplish better in academics
- Those who are adept at the application of strategies for test preparation and test taking strategies do well in academics
- Anzi & Owayed (2005) and Verma (1996) in their studies had also revealed that academic performance did correlate with the use of specific study strategies.

Implications

This study highlights the importance of the role of learning and study strategies in influencing academic achievement. This study adds to the existing knowledge hub that students who engage in effective study methods, such as time management, organization in the concepts or timetable, and active learning techniques, tend to perform better academically. Similar results were found in the study conducted by Zimmerman, (2002) and Dunlosky et al., (2013) where effective learning strategies will enhance the achievement of students in academics. This suggests that encouraging students to adopt these strategies could enhance their academic outcomes. Teachers, Mentors, and parents can use these findings to promote effective learning habits, which in turn can lead to better academic performance. Furthermore, schools could consider integrating and adapting to the study strategy workshops or programs into their curriculum to help students improve their learning techniques their enhancing their achievement levels (Agarwal et al., 2014).

Limitations

While the study provides new insights, it has a few limitations. One prominent limitation is that academic achievement is one factor which has numerous influencing aspects like socioeconomic status, family relationships, emotional well-being and others which can play a significant role in a student's success. The study's sample has been limited to one geographical area, which means the results may not fully represent all students in different regions. Furthermore, the study primarily focuses on traditional learning environments, and results might differ in more non-traditional or online learning contexts.

Suggestions for Further Research

Future studies can be performed on different types of study strategies across various subjects or age groups to asses if certain techniques work better for specific contexts. Researchers could also focus on investigating the role of external factors, such as family support or access to resources, IQ levels, cognitive abilities, and others as influencing factors for academic achievement. Additionally, investigating how study strategies interact with students' mental health and motivation can also provide a more comprehensive understanding of the factors that drive academic success.

CONCLUSION

The results of the research indicate that Academic achievement was significantly related to anxiety, concentration, attitude, selection of central ideas, self test strategies and effective time management. These results can give indicators as to what strategies should be taught in academic skills training, as these have an impact on academic achievement.

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Conflict of Interest
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