



IMPACT OF MOTIVATIONAL FACTORS AND SELF-REGULATED LEARNING STRATEGIES AND MATHEMATICS ACHIEVEMENT OF SCHOOL STUDENTS

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ABSTRACT

Many psychologists believe that motivation plays an important role in learning. If that is the case, in institutes of higher education where students are expected to be self-directed in their learning, motivation becomes an essential element. Though aspects of motivation and learning have been studied quite extensively in the West, to date there is a dearth of research in this area in India. Therefore, this study can help students to regulate their learning behavior and to take responsibility for their own learning. Also they have to make decisions in such a way which will help them to accomplish their learning tasks. So the level of motivation may play an important role in the way they attend to these learning tasks. Also this study is important as it addresses educators, teachers and parents about improving students' achievement through fostering their patterns of factors and behaviors which subsequently improve their well-being. The sample for the present investigation included eight standard students in Tamilnadu. The study considered English medium schools and 300 students were included. Method of the study was descriptive survey. It recommends on a study that set out to understand the relationship between motivational factors and self-regulated learning strategies and academic achievement of school students.

KEYWORDS: motivational strategies, learning strategies and academic achievement.

INTRODUCTION

The scientific concept of motivation has a long have noted that some early theorists have traced the concept of motivation back to Plato and Aristotle who discuss "willingness". Nineteenth century scholars associated motivation with will, volition, or instinct, depending on how deterministic their worldview was. The theory that all behavior was instinctual lost popularity in the 1920's, when it could not stand up to scientific scrutiny. The concept of volition as a source of motivation concurs with many of today's views, but offers no insight into the process of motivation. Motivation is also one of the founding constructs of psychology. Freud discussed "trieb," which means moving force. At the time, the term was translated as instinct but closer in meaning to "drive" or "motivation". The Latin root of the word "motivation" means "to move"; hence, in this basic sense, the study of motivation is the study of action. Although there are many motivational theories, we examine some of these theories that have developed over the years and then focus on theories that are based on academic achievement in classroom setting.

The scope of motivational research today has grown and expanded greatly. The roots and foundations of motivation research are essentially tied up with research on learning. The much flaunted concept of "reinforcement" bears ample testimony to this. Current



theories provide a better understanding of the role of goals. Since they are based in cognitive psychology, they focus on purposeful rather than elicited behavior. In addition, since the theories are related to social cognitive and social constructivist theories, they place a greater emphasis on self-efficacy and social influences. Motivation in field of classroom learning is based on how learners think about the consequences of their behavior (motivational beliefs). Here, theory emphasizes learner goals, expectations and beliefs- in short cognition. A specific set of motivational beliefs pertains to the value students attach to a domain. Motivational beliefs also refer to the students' opinions of the efficacy or effectiveness of learning and teaching methods. Although there are so many theories about motivation, this study focuses on those that are based on these variables. Therefore, firstly the study explains self-efficacy theory (based on self-efficacy variable), then theories focused on intrinsic value (intrinsic and extrinsic theory and goal orientation theory) then theory that integrates expectancies or self-efficacy and value (expectancy-value theory).

In terms of self-regulated learning strategies (cognitive processes), we were mainly concerned with students' self-reported use of specific cognitive strategies and self-regulatory strategies. Cognitive strategies are defined as the thoughts in which students are engaged in while studying. However, they may also refer to specific behaviors in which students engage whilst trying to assimilate new knowledge.

Self-regulatory/ or meta-cognitive strategies can be defined as those strategies that help students focus on planning, monitoring, and controlling their cognition. Such strategies can take the form of self-testing, monitoring of one's understanding of course content or repairing one's understanding by re-reading or doing more problems.

Besides self-regulation of cognition and meta-cognition, students must be able to a) manage and regulate their time and their study environments, b) monitor their effort, c) learn from peers, and d) seek help and support from peers and instructors. These effort management strategies enable students to manage their environment and the available resources.

NEED OF THE STUDY

Why do some students excel academically while other students struggle to pass in a certain class? What drives some students to actually learn and appreciate the course material? Why do some students study and others do not? In short, what are the determinants of academic success? Indeed, the question is straight forward. The answer, however, is far from simple. In the domain of science, from the research on science instruction and schooling practices to the research on conceptual change, investigators have proffered numerous explanations to this exact question. While we do not deny the importance of such accounts, it is our contention that such explanations nevertheless ignores one crucial aspect of the learning process; that is, motivation. The question on how motivation facilitates learning and how it enhances performance has been important point of departure in research over the past decades. But, achievement outcomes have been regarded as a function of two characteristics, skill and will and these must be considered separately because possessing the will alone may not insure success if the skill is lacking. However, in spite of this large database of knowledge on the relationship between motivations, cognition and performance, many questions remain unanswered.

OBJECTIVES OF THE STUDY

- To find out whether significant relationships exist between motivational factors and self-regulated learning components of students.
- To find the whether significant relationships exist between motivational factors and self-regulated learning components of students and mathematics learning achievement.

HYPOTHESIS

- Motivational strategies and self-regulated strategies towards mathematics learning of the middle school students have strong and positive relationship

- There is no significant difference exists between motivational strategies and self- regulated learning strategies with regards to mathematic learning achievements.

RESEARCH METHODOLOGY

The method selected for this study was decided on the basis of the nature of the research problem. As stated in the statement of the problem, the researcher wanted to find out relationship between motivational factors and self- regulated learning strategies and academic achievement of middle school students. In other words, the research has the inherent need to have survey method of investigation. A review of the literature suggests that a survey method is especially useful when the sample sizes are large, when the inter relationships between the variables need to be examined and when the differences between samples in their response patterns have to be investigated.

The study was conducted among eighth standard students in secondary schools to obtain their regarding motivational beliefs and self-regulated learning strategies in mathematics. It enabled the researcher to get information and to find out the opinions of the school students at high school level. The use of this design enabled the researcher to evaluate and to compare responses of girls and boys students. The sample of this study consisted of 300 students (boys=150,girls=150) from middle schools in Tamilnadu. The students’ age ranged between 12 and 15 years. This study applied simple random sampling for selection of the sample. The data required for this study was collected by the use of one questionnaire; it was a standardized test for the students (MSLQ) was developed by Pintrich and DeGroot (1990). The items were scored on a 7-point Likert scale from 1 (not at all true of me) to 7 (very true of me). Learning achievements of the student is recorded from last class room exams. It includes two subscales like Motivational strategies and self-regulated learning strategies. Researcher used ANOVA, Independent sample T test and correlation for the study.

ANALYSIS AND INTERPRETATION OF DATA

Table 1: Inter correlation between motivational strategies and self-regulated learning strategies

Variables	Self-efficacy	Intrinsic value	Test anxiety	Cognitive strategy	Self-regulation
Self-efficacy	1	0.858**	0.880**	0.860**	0.904**
Intrinsic value		1	0.808**	0.882**	0.847**
Test anxiety			1	0.850**	0.905**
Cognitive strategy				1	0.859**
Self-regulation					1

** . Significant at the 0.01 level

Inter correlation shows that all motivational strategies and self-regulated strategies towards mathematics learning of the middle school students have strong and positive relationship at 1 percent significant level. Self-regulation of the students has highest significant relationship with factors like self-efficacy and test anxiety

Table: 2 Difference between motivational strategies and self-regulated learning strategies and mathematic learning achievements

Variables	F value	p value	Result
Self-efficacy	163.618	0.000**	H ₀ Rejected
Intrinsic value	165.540	0.000**	H ₀ Rejected
Test anxiety	153.898	0.000**	H ₀ Rejected

Cognitive strategy	154.459	0.000**	H ₀ Rejected
Self-regulation	168.175	0.000**	H ₀ Rejected

**Significant at the 0.01 level

Since p value is less than 0.01 for all motivational strategies and self-regulated learning strategies, hence null hypothesis is rejected and it concludes that there is significant difference exist between motivational strategies and self-regulated learning strategies with regards to mathematic learning achievements. Post hoc shows that highest academic scored students level of usage of motivational strategies and self-regulated learning strategies is greater than low academic scored students.

DISCUSSION AND CONCLUSION

This study was undertaken to examine if an association existed between motivation and learning strategies and if it influenced on academic achievement of students in India. The study found significant correlation between motivational components and self-regulated learning components of school students at 0.01 significant levels. This study therefore concluded that there was relationship between motivation factors and self-regulated learning strategies.

The findings from the next objective showed that there were significant differences between motivational strategies and self-regulated learning strategies and their academic achievement. Whenever students had higher motivational strategies and self-regulated learning strategies, their academic achievement was better too.

An implication arising from this finding is that teachers may need to adopt instructional and management practices that encourage and support the students' perceived efficacy as means to enhance self-regulatory capability and optimize learning outcomes. These practices could include encouraging cooperation and participation from all students, providing opportunities for positive interactions through teamwork and underlining the role of self in successful learning. It is important to facilitate strategy use. Instructors might consider modeling specific strategies or ways of thinking for learning mathematical in class, in addition to encouraging students to share their strategies for learning the course content.

Directing students' attention to the strategy aspects of a learning task can have positive effect on students' self-efficacy and their motivation. Strategy instruction is an instructional format designed to teach procedures for thinking about mathematical processes. When introducing a new task, teachers explain the strategies required for the task and state that they are learnable and can be used to advance mathematical achievement.

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