

Self Directed Learning Attitude towards Mathematics and Cognitive Strategy of High School Students

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Abstract

In self- directed learning (SDL), the individual takes the initiative and the responsibility for what occurs, Individuals select, manage, and assess their own learning activities, which can be pursued at any time, in any place, through any means, at any age. In schools, teachers can work toward self- directed learning a stage at a time. Teaching emphasizes self- directed learning skills, process, and systems rather than content coverage and tests. For the individual, self -directed learning involves initiating personal challenge activities and developing the personal qualities to pursue them successfully. Attitude is a positive or negative reaction to a person, object or idea “An attitude is an organized and consistent of thinking, feeling and reacting with regard to people, groups, social issues or any event in one’s environment. It’s essential components are thoughts and beliefs, feelings and tendencies to react”.

KEYWORDS :self-directed learning, cognitive strategy, attitude

INTRODUCTION

SELF-DIRECTED LEARNING

In self directed learning (SDL), the individual takes the initiative and the responsibility for what occurs, Individuals select, manage, and assess their own learning activities, which can be pursued at any time, in any place, through any means, at any age. In schools, teachers can work toward self directed learning a stage at a time. Teaching emphasizes self directed learning skills, process, and systems rather than content coverage and tests. For the individual, self-directed learning involves initiating personal challenge activities and developing the personal qualities to pursue them successfully.

ATTITUDE

Attitude is a positive or negative reaction to a person, object or idea “An attitude is an organized and consistent of thinking, feeling and reacting with regard to people, groups, social issues or any event in one’s environment. It’s essential components are thoughts and beliefs, feelings and tendencies to react”.

COGNITIVE STRATEGY

Cognitive strategy instruction, which is sometimes referred to as general strategy instruction may be described as a way of supporting students to direct their actions to meet learning goals. Simply put, “a strategy is a tool, plan, or method used for accomplishing atask” it tends to concentrate and enhance effort. A cognitive strategy is “a strategy or group of strategies or procedures that the learner uses to perform academic

tasks”. Strategy instruction typically includes “teaching students about strategies, teaching them how and when to use strategies, helping students identify personally effective.

REVIEW OF RELEATED LITERATURE

Carr,et,all,(2011)Combined Fluency and Cognitive Strategies Instruction Improves Mathematics Achievement in Early Elementary School

One hundred and seventy-eight second grade students from two states (Georgia and Massachusetts) participated in an experiment in which they were randomly assigned to either

- (1) A computer program designed to increase fluency in addition and subtraction,
 - (2) A program designed to improve cognitive strategy use for addition and subtraction,
 - (3) A program that combined the fluency and cognitive strategy instruction programs or
 - (4) A control condition. The intervention consisted of 40 half-hour sessions per week for
- Prior to the intervention, and immediately following the intervention, the participants were tested on fluency, cognitive strategy use, and mathematics achievement. ANCOVAs indicated that children in the combined fluency and cognitive strategy use condition significantly improved their mathematics achievement in comparison to the control group. When we examined the impact of the intervention as a function of gender, boys appeared to benefit from the intervention, but girls did not.

Douglass,et,all,(2014)Student Perspectives on Self-Directed Learning

Undergraduate student perspectives regarding specific factors associated with self-directed learning were collected through eight focus groups. A total of 80 upperclassmen provided input revealing three emergent themes in the focus groups responses: (1) Student-Controlled, (2) Faculty-Controlled, and (3) Administration-Controlled Facilitators and Barriers to promoting self-directed learning. Students acknowledged much of their learning was within their control. However, they did note that faculty and administrators have a significant impact on their desire and ability to learn. In an effort to empower students to direct their own learning processes the results of this study have been integrated into campus assessment initiatives including the development of a student organization to provide a consistent, student-led forum for students to voice their opinions and concerns about their learning processes and assessment.

Farooq,et,all,(2008) Students attitude towards mathematics

2008 students success in mathematics depends upon attitude towards mathematics. It also influences the participation rate of learners. This study was based on a survey of high school students about their attitudes towards mathematics. Students of both the gender constitute the population of this study was 685 students (male=379 female=306) of 10th grade selected conveniently from 10 private and public sector schools. A questionnaire ($\alpha=0.7452$) was used to examine the attitudes of male and female students towards mathematics at secondary school level descriptive statistics and t-test with $p < 0,05$ level of significance were used for data used for data analysis.

Gray,et,all,(2012) Self-directed leaning.

To help increase the effectiveness of self directed teams, this paper studies the attitude and behavior of self directed team members during the course of computer simulated marketing strategy game. Self directed teams are used widely throughout organization yet receive little scrutiny when they undertake a task which is subject to conditions of multi-period complexity and uncertainty. To explore the issues involved 42 teams of final year undergraduate marketing students completed online self – report questionnaires during the completion of a competitive marketing strategy simulation game. The research finding reveal team performance as a dynamic construct that is predicted by prior period performance and team resilience, but not emotional intelligence which is negatively related to team performance. It is hoped that future examinations of this model will highlight the need for management to be cognizant of these outcomes when designing training and intervention programmer to enable them to cope better with complex tasks and uncertainty.

SCOPE OF THE STUDY

Aim to find to assess the self directed learning attitude towards mathematics to cognitive strategy and to evaluate the possible association between self directed learning attitude towards mathematics and cognitive strategy among high school students.

Useful for the student’s administration, to know the self directed learning attitude towards mathematics and Cognitive strategy of high school students to students learning experiences.

The purpose, the aim and drive of these schools is to equip the students with the most excellent technological proficiency so that the student may function with clarity and efficiency in the modern world. A far more important purpose than this is to create the right climate and environment so that the children may develop fully as complete human beings.

Cognitive strategies are useful tools in assisting students with learning problems. The term "cognitive strategies" in its simplest form is the use of the mind (cognition) to solve a problem or complete a task.

STATEMENT OF THE PROBLEM

The Statement of the problem is entitled as“**SELF DIRECTED LEARNING ATTITUDE TOWARDS MATHEMATICS AND COGNITIVE STRATEGY OF HIGH SCHOOL STUDENTS**”

OPERATIONAL DEFINITION FOR THE TERMS

Self directed learning

“SDL is any increase in Knowledge, skill, accomplishment, or personal development that an individual selects and brings by his or her own efforts using any method in any circumstances at any time”

Attitude

Attitude is a positive or negative reaction to a person, object or idea “An attitude is an organized and consistent of thinking, feeling and reacting with regard to people, groups, social issues or any event in one’s environment. It’s essential components are thoughts and beliefs, feelings (or emotions) and tendencies to react”.

Mathematics

Mathematics is the science of numbers and their operations, interrelations, combinations, generalization and abstraction and of space configurations and their structure, measurement, transformation and generalizations,

Cognitivestrategy

A cognitive strategy is a mental process or procedure for accomplishing a particular cognitive goal. Cognitive strategies are the specific methods that people use to solve problems, including all sorts of reasoning, planning, arithmetic etc. Importantly , a cognitive strategy need not be all “ in the head “, but will almost always interact with various aspects of what might be called the “execution context”.

High school students

In this study high school students of different boards of education, from different medium of instruction, in Salem district were taken as samples for the study.

OBJECTIVES OF THE STUDY

- To find out the self directed learning attitude towards mathematics among high school students.
- To identify cognitive strategy among high school students.
- To compare the self directed learning attitude towards mathematics and cognitive strategy among high school students

HYPOTHESES OF THE STDUDY

- Students do not differ in their self directed learning attitude towards mathematics among high school students based on the select sub samples gender, birth order, locality, types of schools, type of family, medium of instruction.
- Students do not differ in their cognitive strategy among high school students based on the select sub samples gender, birth order, locality, types of schools, type of family, medium of instruction.
- There is no interaction between self directed learning attitude towards mathematics and cognitive strategy of high school students.

LIMITATION

The limitation of the study are as follows :

1. This study was confined only to the high school students in salem district
2. In addition to the self directed learning attitude towards mathematics only the cognitive strategy of the students is considered in this study

Despite these delimitation this study assumes importance because it assess the important self directed learning attitude towards mathematics and its relationship with cognitive strategy.

SAMPLE

Sample is a small proposition of population selected for observation and analysis. By observing the characteristics of the sample one can make certain inference of the population from which it is drawn.

The sample for the study consists of 310 high school students; the sample was taken from Government, Government aided, and Matric schools.

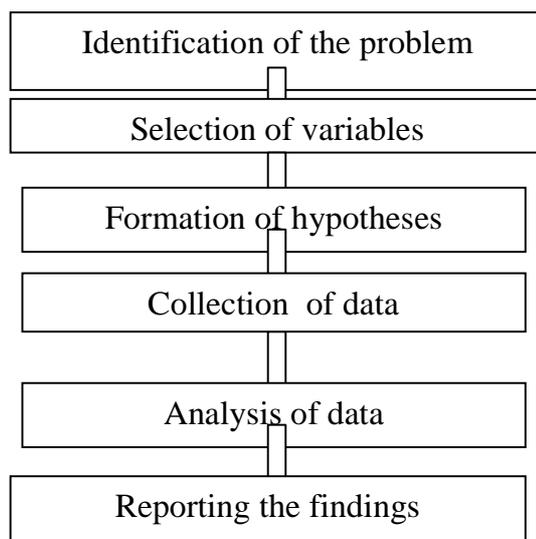
TOOL USED

Administration of the tool

The tool was given to higher secondary students studying in government, aided, private schools. Totally 57 items were given to each and every individual to give his/her own responses in the allotted time.

RESEARCH DESIGN

Steps involved in research design,



STATISTICAL TECHNIQUES USED

Descriptive and Inferential statistical techniques were used for the present study.

FINDINGS OF THE STUDY

1. Male and Female high school students do not differ in their Self directed learning attitude towards mathematics.
2. Male and Female high school students do not differ in their Cognitive strategy
3. High school students of different types of birth order do not differ in their Self directed learning attitude towards mathematics.

4. High school students of different types of birth order do not differ in their Cognitive strategy.
5. Rural and Urban high school students do not differ in their Self directed learning attitude towards mathematics.
6. Rural and urban high school students differ in their cognitive strategy with the dimension Learning inspection.
7. Joint and Nuclear high school students differ in their cognitive strategy with the dimension Recognizing self concept of mathematics
8. Joint and Nuclear high school students do not differ in their Cognitive strategy
9. High school students of different types of schools do not differ in their Self directed learning attitude towards mathematics.
10. High school students of different types of schools do not differ in their Cognitive strategy.
11. Tamil and English high school students differ in their Self directed learning attitude towards mathematics with the dimension paying attention.
12. Tamil and English high school students do not differ in their Cognitive strategy
13. There is low negative correlation between self directed learning attitude towards mathematics and cognitive strategy.

DISCUSSION

There is an increasing concern that the curricula of many schools put too heavy an emphasis on memorization of facts and little stress on problem solving or self-directed study skills necessary for the study of mathematics. Problem-based, self-directed learning is a teaching-learning method specifically designed to emphasize these skills and to increase the retention of facts and their recall in the field of education.

In the case of self-directed learning and cognitive strategy, attitude towards Mathematics was found that students in Tamil and English differ significantly in the present study.

The present study reveals with the high school students have great difficulty in self-directed learning

IMPLICATIONS OF THE STUDY

Students should develop their learning skills and clarify their doubts when they are unable to understand any aspects. For their progress, in life students should understand the mental ability and go for various learning materials. Students should not be dependent on teacher or others, so that their creativity and mental ability related to mathematics gets elevated.

For many students self-directed learning traditionally thought to be difficult and dull, is often considered inaccessible, generating a negative attitude towards it. In order to encourage a positive attitude towards mathematics, we propose class practices that, through research activities, will lead the students to experiment a similar path to the one that has given, as enhance their self-efficacy, gives a correct vision of the discipline and stimulate positive emotions.

School teacher must be aware that there are certain aspects of students learning in mathematics needed to be improved. In particular, students should be given more opportunities to work on self-directed learning in mathematics problems. So as to maximize their higher order thinking skills and value the intrinsic essence of mathematics. Mathematics should not be limited to the representation of rigid processing, routine manipulation and theoretical operation. In this sense, self-directed learning should be demonstrated in a more authentic way, by which students can spontaneously associate mathematics knowledge with their every day environment. We believe that in doing so, the engagement and exposure will result in student better understanding of cognitive strategy and their mathematics learning, which in turn to help students to develop more positive attitude towards the subject and therefore further promote their learning ability.

SUGGESTIONS FOR THE FURTHER

Students should develop the critical and creative thinking in self directed learning. Students be intouch with the seniors and elder people cognitive strategy. One should go through the updated math magazines to develop the study skills, mental ability skills, creative skills etc.

This research was conducted high school level and can be conducted at higher secondary level and college level. This study was conducted in salem district and can be conducted in other districts in future for future study.

CONCLUSION

The study suggests that self directed learning and cognitive if accompanied by positive attitude may procedure very good mathematics skill in individual even in his early stage of education. Students get more opportunities to exhibit learning task. In educating students, emphasis is to be given on creative thinking and solving mathematics problems So, the task of teaching mathematics at the schools must be well planned and organized to inculcate the practices of develops positive attitude in mathematics.

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