Research Article

A Study of the Motivation of Students towards Learning Science in South Bangalore Schools

Jose Cherian M[1], Manisha M Pereira[2]

[1]HOD, [2]School of Education, Christ University.

Correspondence to: Dr. Jose Cherian M, School of Education, Christ University.

E-mail Id: jose.cherian@christuniversity.in

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Abstract

The present study was conducted on 336 students enrolled in classes IX and X in high schools in South Bangalore. A Likert-type scale developed by Tuan, Chin and Shieh (2005) was used to examine the motivation levels of students towards science learning. Research findings revealed that the board (CBSE, ICSE or State Board) and the qualification of parents had an effect on students' motivation levels towards learning science. Gender and parents' occupation were not seen to play a significant role in affecting the level of motivation towards learning science.

Keywords: Motivation, Science learning, High school students, SMTSL, Science education.

Introduction

The main aim of science education at the school level is to encourage scientific literacy. This would help students in deepening their understanding of the nature and relevance of scientific concepts in daily life. It would also increase the possibility of willingly continuing science learning both in and beyond the school.[10]

High school science is seen to be important as it is determined by a number of factors which lay emphasis on the quality and process of learning.[15] In the past, researchers have used qualitative methods in order to classify motivation patterns of students towards learning science.

Tuan et al. (2005) identified self-efficacy, strategies of learning and perceptions of science learning values as the key domains to study the level of motivation towards learning science. These were thus incorporated into the Students Motivation towards Science Learning (SMTSL) Questionnaire developed by them.

Need for Study

Motivation is a key factor that aids the learning of a subject. Often we find that lack of motivation leads to a disinterest in the subject. A number of studies have been conducted using various motivation scales towards the learning of science.[13] In this context, the current study aims at determining the motivation of high school students in South Bangalore, Karnataka, India, according to a) Gender, b) Parental Education, c) Board of Education, and d) Parental Occupation.

A number of studies have shown the correlation between gender and parental education and its effects on science motivation. Considering that these two factors would not be the sole determinants of motivation, board of education and parental occupation have been taken as additional parameters to assess motivation towards learning science.

India being a country where students study in different boards of education, each following their own curriculum, it was felt that the type of board could also affect students' perceptions and behaviors towards science. Apart from this, the social status of parents in terms of their profession could be considered as another determining factor.

Assessing the levels of motivation assists in giving a clear idea of the perception students have about a particular subject. This knowledge would help in taking necessary measures to solve this issue by addressing specific areas which result in lack of motivation.

Methodology

Sample

The data was collected by means of administering the SMTSL questionnaire. The sample for the study comprised of high school students (enrolled in 9th and 10th std.) in seven different schools which are located in the Southern Region of Bangalore City, Karnataka, India. Out of these seven schools, two were from the ICSE Board, two from CBSE and three schools following the state syllabus were chosen. Students in the study were chosen randomly. A total of 336 students participated in the study.

Tool

The tool used for the study was the Students Motivation towards Science Learning (SMTSL) questionnaire which is a five-point Likert scale developed by Tuan et. al. (2005). The questionnaire comprised six factors including i). Active learning strategies, ii). Science learning value, iii). Self-efficacy, iv). Performance goal, v). achievement goal and vi). Learning environment stimulation. The scale consisted of 35 questions of which 9 were negative and 26 were positive.

Hypothesis

1. There is no significant difference between the mean scores of male and female students with respect to their level of motivation in science learning.
2. There is no significant difference between the mean scores of students with respect to the board of studies towards the level of motivation in science learning.
3. There is no significant difference between the mean scores of students' motivation towards science learning based on the educational qualification of their parents.
4. There is no significant difference between the mean scores of students' motivation towards science learning based on the occupation of the parents.

Findings and Interpretation

In the research presented in this article, students' motivation levels towards learning science were examined based on different variables. From data analysis, it can be observed that although the type of board the students studied in as well as the occupation of the parents seemed to have an effect on the level of motivation towards learning science, gender and parents' occupation did not seem to play a significant role in the same.

Further, studies on the board of education and the parts of specific science curriculum that make it motivating for students could be analyzed. This could pave ground for curriculum framers to adopt the principles of best practices in one curriculum in order to motivate students following other curriculums as well. The study could be extended to analyze if the level of motivation towards learning science in students was affecting their academic performance-the overall performance in general with specific emphasis on the students' performance in science.

In the current study, 87.5% of the students seemed to show low to moderate levels of motivation. Considering that this percentage is very high as compared to the 12.5% of students who showed high level of motivation, measures need to be taken towards enhancing students' level of motivation towards learning science; this lack of motivation in students should be a cause for concern, as science learning has been found to be an integral part of one's school education.

The teaching-learning process should cater to the needs of every individual with different learning and intelligence styles. With this in mind, innovation in science learning should be a constant area of research. Advancements in technology, especially in the form of simulations, could be used to advantage in building curiosity and interest in the minds of students and giving them near-real experiences which in turn would go a long way in motivating them towards learning a subject.

Activity-based learning such as field trips, classroom activities, and experimentation along with experiential learning strategies supplemented with real-life illustrations should be implemented in the curriculum in order to enhance the engagement of students in the science classrooms, which might further boost the motivation levels of students.

The current article has dealt only with the overall levels of motivation towards learning science. Individually dissecting and analyzing the various components of the tool-active learning strategies, performance goal, achievement goal, self-efficacy, science learning value and learning environment stimulation might give further insights on the specific areas that need to be focused

upon in order to enhance motivation levels in learning science.

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