

A Study on Role of Parents and Teachers in Switching of Streams among Science Students at Undergraduate Level

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Abstract

The study investigated on “A Study on Role of Parents and Teachers in Switching of Streams among Science Students” using a quantitative method, sample were chosen purposely from Bhopal undergraduate colleges. The data were collected by means close ended questionnaire. Questionnaire was designed by the investigators. The results of the present study indicate that the role of parents played a vital role in switching of streams among science students at undergraduate level.

Key words: *Role of Parent and Teachers, Switching of Science, Undergraduate Students*

Introduction

Science is defined as applied knowledge. It is a subject that has an impact on our everyday activities. It is also defined as a tool that is important to both individuals and to the nation as a whole in order to survive and to meet the global economic requirements (Kibet, Mbugua, Muthaa & Nkonke, and 2012:87). This implies that science subjects continue to be of the most important subjects, as the world is currently at a stage where its wealth and economic development is highly dependent to the science workforce (Laugksch, 1999:86; Muzah, 2011:1; Kibet et al., 2012:87). The poor performance in science subjects and the low enrollment rate in the science stream at higher education. This observation calls for an investigation into factors that cause switching from science subject to non science subjects.

The current problem faced by the country and in most parts of the world is the critically decreasing number of students opting for the science stream in secondary schools and higher education

institutes, regardless of high academic performance in science. The decrease in the number of students in science streams provoked a new polemic in the field of education in India. Like any other developing country,

It was found that students refused to opt for the science stream due to factors such as lack of budget and technology, lack of guidance from adults who are knowledgeable and involved in the field of science-related careers, psychological restraints whereby students believe that the field of science is difficult lack of role models in the field of science, and the assumption that science is an uncreative endeavor.

Research Objectives

The main objective of the study was to investigate are factors for switching from science stream to non science streams at under graduate level in Bhopal District.

- To study the effect of economical status of parent on switching science stream.
- To study the effect of employment Sector of Parents on switching science stream.
- To study the effect of **Educational Background of the Parents** on switching science stream.
- To study the effect of science teacher on switching science stream.

Literature Review

Maria de Lourdes Mata et al.(2012) studied to understand how certain different but interrelated variables such as background, motivation, and social support could lead to an explanation of student attitudes towards math and to an understanding of the defining characteristics of these attitudes in the school environment. The results revealed that the students held positive attitudes towards mathematics and also highlighted the main effects of grade and math achievement on these attitudes. No gender effect was identified although the girls showed a continuous decline in attitudes the further they progressed in school. A hierarchical analysis using structural equation modeling showed that motivation-related variables are the main predictors of attitudes towards

mathematics and that teachers and the social support of peers are also highly significant in understanding these attitudes.

Helena Thuneberg et al (2017) studied the current science, technology, engineering, art, math education (STEAM) approach emphasizes combination of abstract science and mathematical ideas for concrete solutions by art. The main objective was to find out how experience of learning mathematics differed between the terms of school and an informal Math and Art Exhibition. The finding based on General Linear Modeling and Structural Equation Path Modeling underline the motivational effects. The lowest achieving group favored the exhibition alternative for math learning compared to learning math at school. The boys considered the exhibition to be more fruitful than the girls as it fostered their science and technology attitudes. However, for the girls, the attractiveness of the exhibition, the experienced situation motivation, was much more strongly connected to the attitudes on science and technology and the worthiness of mathematics.

Raja Bentaouet Kattan and Miguel Székely (2015) studied detailed analysis of upper secondary education dropout patterns in Mexico, exploring its consequences and possible causes. To perform the analysis we combine different databases and statistical methods ranging from the use of surveys with information on specific individuals to data aggregated at the municipal and state level. The main value added is the simultaneous analysis of the influence of individual-family, community, and macro aggregate factors, on school dropout in the country.

Kufakunesu Moses (2011) studied the main thrust of this article was to explore the causes of dropouts in high school Mathematics in Masvingo urban secondary schools. The researchers got primed to delve into such a research study after realizing that a significant proportion of high school pupils were dropping Mathematics when paradoxically a pass in high school Mathematics is mostly a precondition for admission into many tertiary institutions in Zimbabwe. The phenomenological research design was used with individual interviews and focus group discussions as data collection instruments. The researchers used a random sample of 35 respondents comprising 10 Mathematics teachers and 25 high school Mathematics dropouts. The teachers mostly laid the blame on the pupils' lack of career foresight and frivolous attitudes coupled with lack of parental guidance. The pupils pointed fingers at the teachers and the nature of Mathematics as a subject. The major reason for dropping high school Mathematics from the pupils' viewpoint was the general belief that

Mathematics is an exceptionally difficult and tedious subject. The researchers recommended that teachers have to intensify their efforts in giving high school pupils academic guidance regarding the importance of Mathematics as an academic discipline especially for tertiary training.

Research Methodology

The main aim was to describe the phenomena from more than one viewpoint. Quantitative methods research design was used for this study which includes quantitative data collection and analysis.

Researcher tool were used in this research were closed ended questionnaires which was made the researcher. Questionnaire was made on rating scale. This type of questionnaire is especially useful when conducting preliminary analysis. This research was done at five different department of BSSS College. A structured close ended questionnaire was selected by the researcher to gather information. It is easy to gather information from larger group. A close ended questionnaire is easy to understand and easy to analyze the results quantitatively.

Although there are many sampling methods, purposeful sampling was chosen for this research. The best part of purposive sampling is that participants who are relevant to the study are selected, hence reducing cost and saving time. This research applied sampling using the criteria of switching science results because research wanted to investigate the factors that caused for switching science stream after twelfth. This sampling method was chosen because it allowed the researcher to use a particular subject of respondents that gave information that was relevant to the topic. This was done by selecting the 100 students from the five department of BSSS college. The questionnaires were answered by the student after the class hours in the presence of researcher. The presence of researcher ensure that clarifies were given where needed and also ensured that all questionnaires were collected. The length of questionnaire was 20 minutes.

Data Analysis:

A questionnaire was given to the learners and was self-administered. Their responses were analyzed statistically and presented in a form of bar graphs or tables. For the tabling of the results the respondents were asked to respond with 'yes/no'. The results were presented using descriptive statistics..

Effect of economical status of parent on switching science stream:

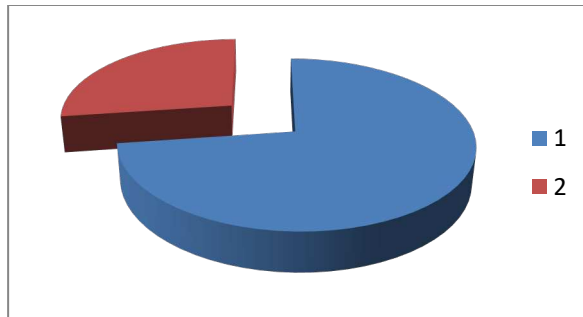
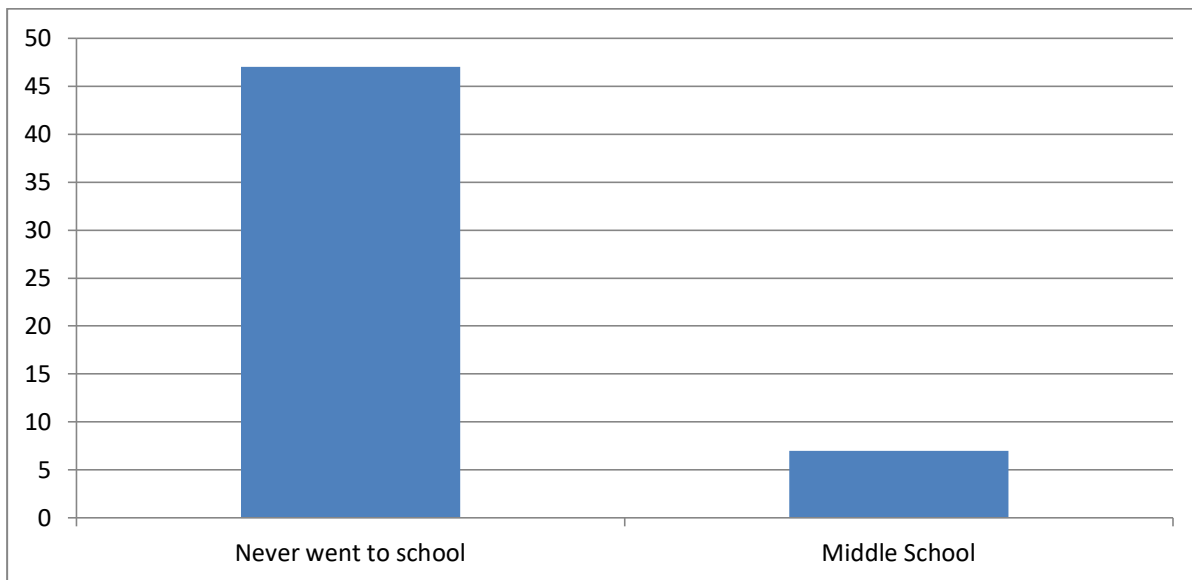


Figure 4.1

Figure 4.1 shows that 91 out of 125 learners stated that their parents were unemployed, and only 34 learners stated that their parents were employed. This implies that the majority of the learners come from poor families where there is no constant income. Poverty has been identified as a factor that contributes towards the poor academic performance of the learners in science stream. This also implies that since there is no constant income, the learners may struggle to afford science educational trips or extra study material.

Employment Sector of Parents

Figure 4.2



The feedback from the participants indicated that 14 of participants mentioned that their parents were employed by the government, 6 indicated that their parents were employed in the private sector, 5 replied that their parents were domestic workers and 9 mentioned that their parents were self-employed. This emphasizes that most of these parents did not have a formal or consistent income.

Educational Background of the Parents:

Figure 4.3

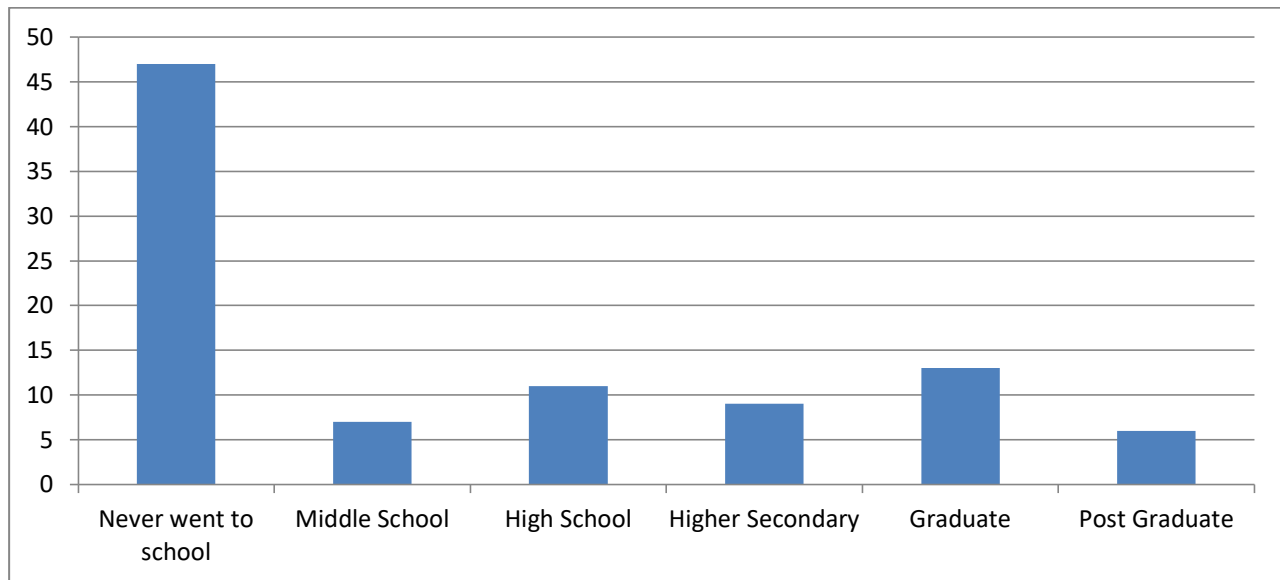


Figure 4.3 indicates that 93 out of 125 learners responded. From these responses 47 learners stated that their parents never went to school. The indicate that 7 parents partly completed middle school, 11 completed all their high school, 9 completed some secondary school, 13 completed graduation and 6 completed Post graduation. These findings suggest that the illiteracy level of parents was high. Hence they could not assist their children educationally, because they were either not knowledgeable of the syllabus or of the medium of instruction. Many Studies stated that this situation could affect the performance of a child.

Effect of science teachers

Table below shows how the science teacher teaches, from the learner's point of view. The learners had to indicate with a 'yes' where the teacher did what was investigated in the variable, or a 'no' where the teacher did not do what was investigated in the variable.

N	ITEMS	YES (%)	NO (%)
	Is your teacher punctual for the class?	89	11
	Would you say your teacher knows /her subject well?	73	27
	Does your teacher use different teaching strategies for different topics?	68	32
	Does your teacher make use of prior knowledge before every new chapter?	74	26
	Does your teacher explain the same thing in different ways to help you understand?	49	51
	Does your teacher ask you the same question in different ways?	58	42
	Does your teacher give your class tests?	82	18
	Does your teacher use the test results to give the learners extra help?	47	53
	Is your teacher approachable Does your teacher motivate you to learn?	56	44
	Does your teacher organize extra lessons for you?	39	61
	Does your teacher care if you understand the lesson or not?	36	64
	Does your teacher invite science teachers from other schools to teach your class?	20	80

The responses from learners indicate that their teachers are competent, dedicated and are able to use multiple teaching methods. These results differ from the findings by other studies were also said that the teachers make use of outdated methods. This then means that according to learner's perspectives these teachers meet the competency requirements which indicated that a science teacher should be competent and should be able to teach in multiple authentic ways.

Concluding remarks

This study explored factors resulting in switching science stream at undergraduate level. It sought to answer the question “What are factors for switching from science stream to non science streams at under graduate level?” The factors that were indicated to be the cause of the learners’ switching science in Bhopal were namely: the lack of resources, the lack of specialized subject content in educators, the medium of instruction, parental involvement, poverty and motivation. However, this does not mean that these are the only factors. There may be many other factors that may cause such switching science. The recommendations made in this study should be used in order to improve the learners’ motivation in the science subjects.

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