

A STUDY ON SELECTION OF SCIENCE STREAM IN ADVANCED LEVEL BY THE STUDENTS IN THE BATTICALOA EDUCATIONAL ZONE

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ABSTRACT

A research study was carried out on selection of Science stream in advanced level by the students in the Batticaloa Educational Zone. Study was confined to Batticaloa Educational Zone and simple random sampling technique was used to select three schools possess advanced level in this educational zone, namely Bt/ Kallady Vivekananda Girls Maha Vidyalaya, Bt/ Vincent Girls High School and Bt/ Shivananda Vidyalaya (National school). Thirty students from each school (Fifteen students from science stream and another fifteen from non science stream) were randomly selected to make the total sample size as ninety respondents. Primary objective of this research was to study the selection of science stream in advanced level by the ordinary level passed students in the schools of Batticaloa Educational zone. Specific objectives were to find out the reasons for not selecting the Science stream in their advanced level by the students, to find out the factors influencing the selection of study stream in the advanced level and to find out the relationship between socio-economic characteristics of the students and the selection of study stream in their advanced level. Primary data required for the study gathered from the selected students and staff. Structured Questionnaires were used for this purpose. Secondary data required for this study were gathered from relevant departments. Data collected were analysed by using SPSS 13.0

Results of the study indicated that, correlation between selection of study stream in the advanced level and the family education index is significant at the 0.05 level. Number of female students selecting science stream in their advanced level is in an increasing rate. There is no correlation between family income and selection of stream in advanced level. Factors like, good IQ skills, good English knowledge, and need more library references are highly influencing the selection of non science stream in the advanced level. Further studies which include other educational zones also needed to get more accurate results.

Key words : Advanced Level, Science Stream, Study Stream

INTRODUCTION

A better life for man is possible and it is contingent on man himself. This has been the core of the philosophical right through the ages, although, they had much differ as to the structure of the world, nature of the reality, nature of knowledge or the concept of knowledge and the concept of values (Anas, 1996). Education has always aimed at the development of the human personality. Generally at the start of a very young age, children learn to develop and use their mental, moral and physical powers, which they acquire through various types of education. Education is commonly referred to as the process of learning and obtaining knowledge at school in a form of formal education. However, the process of education does not only start when a child first attends school. Education begins at home. One does not only acquire knowledge from a

teacher, one can learn and receive knowledge from a parent, family members and even an acquaintance. In almost all societies attending school and receiving an education is extremely vital and necessary if one wants to achieve success. (Ahluwalia and Edward, 2003)

Sri Lanka's population is highly educated with a literacy rate of 92%, higher than expected for a third world country. Sri Lanka has one of the highest literacy rates of South Asia. This can mainly be attributed to the free education system in Sri Lanka (NIE, 1986). Today primary education lasts five years (grade 1-5). After primary education there is Junior Secondary education (sometimes referred to as middle school) which lasts for four years (grade 6-9), after which pupils have to sit government examination namely G.C.E. Ordinary level (G. C. E O/L) to qualify for Senior Secondary education which last another two years (grade 11-12). After the

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successful completion of the G.C.E O/Ls students have to choose their study stream in their advanced level. This is last for 2 years grade 12-13, after which students have to sit for G.C.E A/L examination. This is mainly a selection exam for University admission. Studies are mainly in Bio Science stream, physical science stream, Arts stream, and commerce Stream. (Chandamohan and Karunanithy, 1992).

Research problem

After the successful completion of the G.C.E ordinary level, students have to choose their study stream in their advanced level. In the study area, Batticaloa district, the number of students who choose the Science stream, which includes Biological Science and Physical Science is in a very low number compared to the number of students choose Arts and Commerce streams. Majority of the students are not willing to study Biological Science or Physical Science in their advance level due to several reasons.

Objectives

The overall objective was to study the selection of science stream in advanced level by the ordinary level passed students in the schools of Batticaloa Educational zone. Specific objectives were to find out the reasons for not selecting the Science stream in their advanced level by the students, to find out the factors influencing the selection of study stream in the advanced level and to find out the relationship between socio-economic characteristics of the students and the selection of study stream in their advanced level.

METHODOLOGY

A well structured Questionnaire covering all the primary and secondary objectives of the study was prepared to obtained relevant data. Interview method was also used to get the necessary data. Batticaloa Educational Zone was selected for this study. Among the schools under the Batticaloa Educational zone, three schools posses advanced level were randomly selected for this study. Selected schools were, Bt/ Shivananda Vidyalaya (National School), Bt/ Kallady Vivekananda Maha Vidyalaya, Bt/ Vincent Girls High School. Simple Random Sampling technique was used in this study.

From each selected schools, thirty (30) respondents (15 students from Science stream and another 15 students from Non-Science stream) were randomly

selected. Altogether 90 respondents were used for this study. Among the thirty samples from a particular school, 15 students were selected from Science stream and another 15 from Non-Science stream. Teachers who are teaching advanced level subjects (Science and Non-Science stream) were interviewed to get the necessary data. Data collected by using the structured Questionnaire were analyzed by using SPSS (Statistical Package for Social Sciences) 13.0 version.

RESULTS

A survey was undertaken among the advanced level Science and Non Science students from three selected schools in the Batticaloa educational zone. The results of the analysed data are discussed here.

Sex of the students

Among the Science students 33.3% were Male students and 66.7% were female students. Among the Non Science students surveyed, 44.4% were male and rests were female students.

Number of family members

When considering the number of family members, 68.9% of the Science students consist of 2 – 5 members in their family and 31.1% of the Science students with 6 – 8 members. Regarding the Non Science students, 57.8% consists of 2 – 5 members and 42.2% with 6 – 8 members in their family.

Family education index

Family Index was calculated by using the following formula for each student surveyed.

$$\text{Family Education Index} = \frac{\text{Total Educational Score}}{\text{No. of family members}}$$

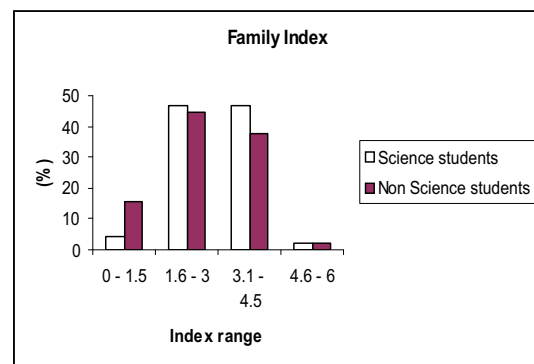


Figure 1: Family education index

4.4% of the Science students and 15.6% of the Non Science students have 0 – 1.5 family education index. 46.7% of the Science students and 44.4% of the Non Science students with 1.6 – 3 family education index range. And 46.7% of the Science students and 37.8% of the Non Science students have the family education index range of 3.1 – 4.5. And only 2.2% of the Science and Non Science students consist of 4.6 – 6 family education index range.

Family income

Majority of the Science student’s (86.6%) and Non Science student’s (84.4%) family income ranges between 0 – 20, 000 /=. Rests of the Science and Non Science student’s family income ranges between 20,001/= - 40,000/=.

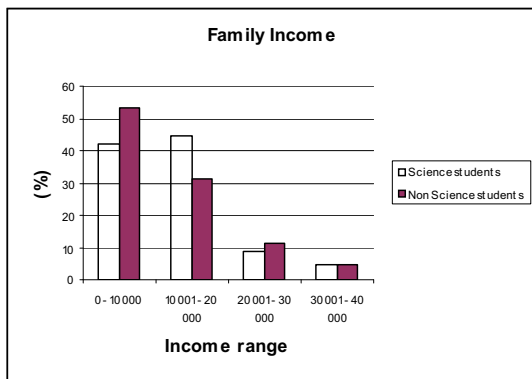


Figure 2: Family income

Studying the ordinary level and advanced level in the same school

Majority of the Science (75.6%) and Non Science (77.8%) students study their Ordinary Level and the Advanced Level in the same school. Rests of the students (24.4% in the Science stream and 22.2% in the Non Science stream) study their Ordinary Level and the Advance Level in two different schools.

Ordinary level Maths subject results:

Among the students used in this study, 44.4% of the Science students got ‘A’ grade in their Ordinary Level. 46.7%, 8.9% of the students got ‘B’ & ‘C’ grade respectively in their Ordinary Level. Likewise, only 11.1% of the Non Science students got ‘A’ grade in their Ordinary Level. 35.6%, 26.7% & 26.7% of the Non Science students got ‘B’, ‘C’ & ‘F’ grade respectively in their Ordinary Level.

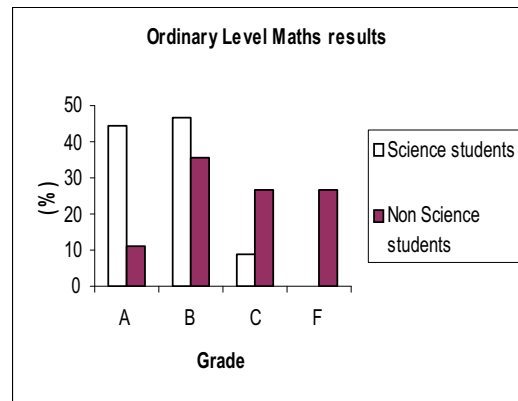


Figure 3 : Ordinary level Maths results

Science results in the ordinary level:

Approximately half of the Science students (57.8%) got ‘A’ grade in Science subject in their Ordinary Level. And 22.2%, 20.0% of the Science students got ‘B’ & ‘C’ grade in the Science subject in their Ordinary Level. Likewise, 22.2%, 31.1%, 33.3% and 13.3% of the Non Science students surveyed got ‘A’, ‘B’, ‘C’, and ‘F’ grade respectively in Science subject in their Ordinary Level.

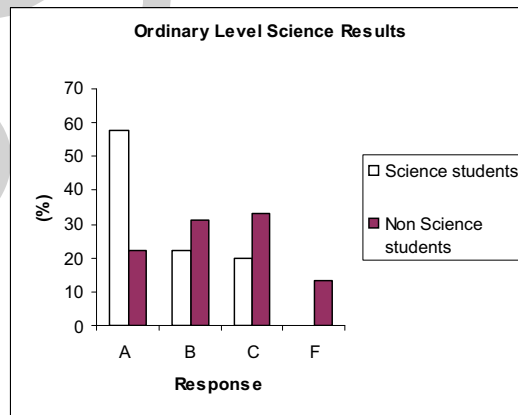


Figure 4: Ordinary level Science results

Family member studied science in their advanced level

Only 42.2% of the Science students responded that their family members studied Science in their Advanced Level and 55.6% responded that their family members did not studied Science in their Advanced Level. 2.2% of the population were not responded anything. When considering the Non Science students, 40% of the population responded that their family members studied Science in their Advanced Level and 60% of the Non Science students responded that their family members did not studied Science in their Advanced Level.

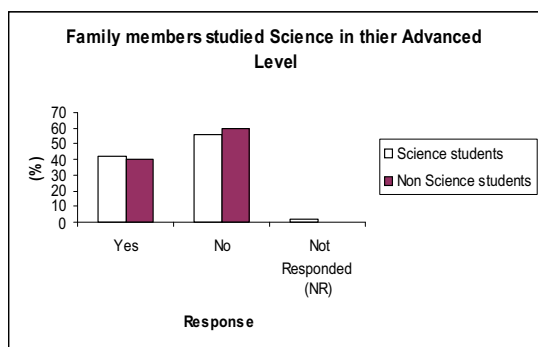


Figure 5: Family member studied Science in A/L

Students need good IQ skills to study science in their advanced level

Majority of the students in the Science (60%) and Non Science (71.1%) stream responded as strongly agree and agree to this statement and 15.5% of the Non science students were responded as disagree and strongly disagree to this statement. 20% of the Science students and 13.3% of the Non Science students were responded as uncertain to this statement. And the balance was not responded.

Science students need to have good English knowledge

Majority of the Science students (84.5%) were in accordance with the statement. 62.2% of the Non Science students also agreed with the statement. 20% of the Non Science students were not accepted this statement. And the balance was not responded.

Science students have to spend more time in the library

Around half of the surveyed population (60% of the Science students and 51.1% of the Non Science students) was agreed with the statement. 20% of the Science students and 31.1% of the Non Science students were uncertain in this statement. Rests of the students were not responded to this statement.

Science students need more knowledge in ordinary Level Science subject

Majority of the respondents (91.1% of the Science students and 80.0% of the Non Science students) were agreed with this state

DISCUSSION

In the past years literacy rate of female students was low compare to the literacy rate of male students. But, at present, the number of females engaged in learning and teaching in an increasing rate. The number of male

students entering the medical faculty by selecting the Science stream was high during the past years. But, at present the number of female selecting the Science stream and entering the medical faculty are higher in number than males. The results of this research indicated that not only in the Science stream but also in the non science streams, the number of female students engaged in learning are higher than the male students. Continuous learning in the family which has high number of family members is less than the continuous learning in the family with low family income.

A common perception is that, students from high income family select Science steam in their advanced level and low income family select non science stream in their advance level. But, the results of this research in somewhat different from this perception. Students from the family with 0 – 10, 000/= family income mostly select non science stream in their Advance level. But, same number of students from the family with 30, 001/= - 40, 000/= family income are selecting science and non science stream in their advance level. Students from family income with 10, 001/= - 20, 000/= family income are mostly selecting science stream in their advanced level. And students from 20, 001/= - 30, 000/= family income are selecting non science stream in their advanced level. But, the difference is not that much significant. Therefore, it can be concluded that there is no correlation between the family income and the selection of stream in the advanced level.

Both in the Science and non science stream, the number of students having their ordinary level and advance level in the same school are high in number. In general, there is an expectation that students selecting Science stream in their advanced level should posses good results in ordinary level Mathematics and Science subjects.

There is a common perception that, most of the family members and parents of the science stream students probably studies science in their advanced level. But, according to the results of the research, there is no correlation between parents' or family members' advanced level studied stream and the students' selection of Science stream in their advanced level. Relatively higher percentage of parents and family members of the students from non science stream was studied science stream in their advance level.

When considering the source from which students got idea to select science in their advance level, majority of the students responded that they have selected the science stream based on their teacher's advice and wish.

Students from non science stream argued that to study science stream in the advanced level, students should have good IQ skills. But, students from science stream have not accepted it. With good IQ skills one also should have hard work for their success.

Both students from Science and non science stream accepted the following. Students who study science stream should have good English knowledge. Most of the text books related science subject are published in English medium. Also they have to spend most of the time in the Library. They have to search and study more related to their field. In addition to that, they should have a good knowledge in ordinary level science subjects. Because, it gives a basic understanding about science to study science stream in the advanced level.

CONCLUSION

A research study was undertaken to find out the selection of science stream in advanced level by the students in the Batticaloa educational zone. According to the results obtained it can be concluded that, the correlation between selection of study stream in the advanced level and family education index is significant at the 0.05 level. The number of female students selecting the science stream in their advanced level is in an increasing rate. Not only in the science stream, in

the non science stream also the number of female students engaged in higher rate. There is no correlation between family income and selection of science stream in the advanced level. Also there is no correlation between parent's or family member's stream of study in the advanced level and students' selection of stream in their advanced level. Results from the non science stream indicated that, certain factors influencing the students in the selection of non science subjects in the advanced level. They are good IQ skills, good English knowledge and need more library references.

Further future studies have to be carried out for more understanding regarding the selection of stream by the advanced level students. This research study was only confined to Batticaloa Educational Zone with only three schools. This is because of the short project duration. Expansion of this study to other educational zone with more time duration is recommended.

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