

THE ROLE OF MATHEMATICS IN CHOOSING A COURSE: A CASE STUDY OF STUDENTS IN EDO STATE INSTITUTE OF TECHNOLOGY & MANAGEMENT.

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ABSTRACT

Mathematics teaches patience, discipline, and step-by-step problem-solving skills. For those with a substantial background in mathematics, an unlimited number of career opportunities are available. In spite of the tremendous possibility of mathematics or mathematicians many people especially young people do not like mathematics as a subject. In this research, questionnaires were administered to respondents' i.e. students of Edo State Institute of Technology and Management to actually investigate the influence of mathematics on students choice of their present course of study. The study shows that mathematics plays a very important part in the students' decision concerning the choice of their present course of study at the school (ESITM).

Keywords: Mathematics; Questionnaires; Respondents; ESITM

INTRODUCTION

Mathematics is an excellent foundation for, and is usually a prerequisite to, study in all areas of science and engineering. Students in such areas as anthropology, sociology, and psychology, as well as law, business, and medicine, also benefit from a solid background in mathematics and statistics. It will help you to better understand science and technology and their effects on our world (www.maa.org, www.awm-math.org and www.amte.net). Demographic statistics show that 40% of University of Technology Sydney (UTS) female engineering student population attended a single-gender secondary school, indicating a potential influence of school type (single-gender) on engineering enrolment patterns. Female students were primarily motivated to pursue a post

secondary engineering path because of a self-belief that they are good at mathematics (Tull and Jacobs, 2010). Mathematics teaches patience, discipline, and step-by-step problem-solving skills. For those with a substantial background in mathematics, an unlimited number of career opportunities are available. According to Jobs Rated Almanac, a 1990 publication of World Almanac Books of New York, NY, careers that require a very strong background in mathematics were listed as the five "best" jobs. Almost all of the top fifty jobs in this "best" jobs list involved mathematical reasoning and knowledge. This list was the result of the comparison of two hundred fifty jobs classified according to:

- income
- future outlook
- physical demands
- job security
- stress
- work environment

THE IMPORTANCE OF MATHEMATICS

The everyday use of arithmetic and the display of information by means of graphs are an everyday commonplace. These are the elementary aspects of mathematics. Advanced mathematics is widely used, but often in an unseen and unadvertised way. These applications have often developed from the study of general ideas for their own sake: numbers, symmetry, area and volume, rate of change, shape, dimension, randomness and many others. Mathematics makes an especial contribution to the study of these ideas, namely the methods of

- precise definitions;
- careful and rigorous argument; representation of ideas by many methods, including symbols and formulae, pictures and graphics;
- means of calculation;
- and the obtaining of precise solutions to clearly stated problems, or clear statements of the limits of knowledge.

These features allow mathematics to provide a solid foundation to many aspects of daily life, and to give a comprehension of the complexities inherent in apparently quite simple situations.

For these reasons, mathematics and calculation have been associated from earliest times. In modern times, the need to perform rapid mathematical calculations in war time, particularly in ballistics, and in decoding, was a strong stimulus to the development of the electronic computer. The existence of high speed computers has now helped mathematicians to calculate and to make situations visual as never before. Also this calculation has developed from numerical calculation, to symbolic calculation, and currently to calculation with the mathematical structures themselves. This last is very recent, and is likely to lead to a major transformation. These capacities change, not the nature of mathematics, but the power of the mathematician, which increases perhaps a million fold the possibility to comprehend, to argue, to explore. In spite of the tremendous possibility of mathematics or mathematicians many people especially young people do not like mathematics as a subject and this work is to determine the relationship between mathematics and the decision of students to study a particular course using Edo State Institute of Technology and Management, Usen (ESITM). ESITM is coeducational institution located in Edo South senatorial area of Edo State. It is an institution that has a student population of about two thousand five hundred (2,500).

METHODOLOGY

According to Osamwota, et al 1996 and Idiata, 2006 two methods are basically used for any research investigation or study to source for data or information namely primary and secondary data sources.

Primary sources: This data or information classified, as primary data are those collected by the researcher first hand in other words the data is collected for that very purpose.

It involves using well-structured, closed ended type of simple questions personally administered to the respondent by the researcher in form of questionnaires or directly carrying out experiments to that end.

Secondary Sources: this type of data is not or was not administered by the researcher to the respondent. It involves lifting of information from other previously conducted research topics via textbooks, journals, newsletters, newspapers, electronic media, websites etc.

In this research, a total of 150 questionnaires were administered to the students across the four schools or faculties i.e. students of Edo State Institute of Technology and Management.

RESULTS / ANALYSIS

As stated above a total of 150 questionnaires were administered to the students out of which 100 was filled and returned. This gives a response of approximately 67%. The analysis of the questions are tabulated as shown

Question one

Do you like mathematics as a subject?

Table 1: Showing Students' Response to Question One

Response	Number	Percentage of returned
Yes	64	64
No	27	27
Cannot tell	9	9

Question two

Was mathematics instrumental to choosing your present course of study?

Table 2: Showing Students' Response to Question Two

Response	Number	Percentage of returned
Yes	70	70
No	17	17
Cannot tell	13	13

Question three

If you were good in mathematics would you change your present course of study?

Table 3: Showing Students' Response to Question Three

Response	Number	Percentage of returned
Yes	67	67
No	22	22
Cannot tell	11	11

DISCUSSION

Considering question number one whether the students like mathematics table 1 show that 64 students answered in the affirmative representing 64% of the returned questionnaires and 27 students response was no representing 27% of the returned questionnaires while 9 said they cannot tell representing 9% of returned questionnaires. Table 2 shows that mathematics played a very important part in the students' decision concerning the choice of their present course of study at the school (ESITM). The table shows that 70 students said mathematics was instrumental to their present course of study representing 70% of returned questionnaires, and 17 students said no to the question i.e. mathematics did not influence their present course of study representing 17% of the returned questionnaires while 13 students said they cannot tell whether or no, this represents 13% of the returned questionnaires. Table 3 further proves that mathematics is a big influence in the career of the students' choice of course. In table 3 shows that 67 students said if they were good in mathematics they will not read or study their present course which represents 67% of the returned questionnaires and 22 students said that it will not have affected the choice representing 22% of the returned questionnaires while 11 said they cannot tell representing 11% of the returned questionnaires.

CONCLUSION

With respect to the results, tables and the discussion above it is very obvious that mathematics is a major player in influencing the decisions on the type of course to study by students in ESITM, Usen and by implication Nigeria. The consideration thus for the students is whether a particular course is completely mathematically based or if it has some mathematical component that can be endured or no mathematics base i.e. rigorous mathematics.

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www.maa.org The Mathematical Association of America

www.awm-math.org Association for Women in Mathematics

www.amte.net Association of Mathematics Teacher Educators

Reference to this paper should be made as follows: Obazele, Lucky. E., et al (2017) The Role of Mathematics in Choosing a Course: A Case Study of Students in Edo State Institute of Technology & Management. *J. of Education and Leadership Development* Vol. 9, No.2, Pp. 35-40
