
THE TEACHING AND LEARNING OF MATHEMATICS FOR ECONOMICS AND BUSINESS AT UNIVERSITY LEVEL

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Abstract: The course of mathematics becomes even more crucial for students of economics and business since its application is inevitable in many other courses of the curricula and practice as well. The instructor is required to raise the awareness of students and encourage them to develop mathematics study routine. Thus, the quality of teaching and learning mathematics is of major challenge for instructors, since a number of students face with mathematics learning difficulties. Thereby the purpose of this research is to examine the students' attitudes towards mathematics and to identify the reasons that influence the learning obscurity by providing a feedback from the students from three universities from North Macedonia. The research methodology consists on a quantitative research strategy. The survey was conducted through a structured self completion questionnaire using a systematic sampling technique.

Keywords: Teaching, learning, mathematics, attitudes

1. INTRODUCTION

The course of mathematics is a compulsory course in all departments of economics and business in North Macedonia. It becomes even more indispensable since its application in economics and business is inevitable in many other courses and in practice as well. Thus, the quality of teaching and learning mathematics is of major challenge for instructors, since a number of students face with mathematics learning difficulties. Finding alternative methods of teaching mathematics that will improve learning is crucial. Nowadays the technology is advanced so much, so its usage is in teachers and student's throwaway, however the technology could never replace the classical way of teaching mathematics, much less the teacher; yet it should be a great mixture in the teaching and learning of the subject matters (Budinski and Takaci, 2013).

Mathematics has a vital role in the classroom not only because of direct application of the syllabus material but because of the reasoning processes the student can develop (Taylor, 2006). Taba (1966) claims, "Appropriate teaching strategy can lead the students to master the abstract and symbolic forms of thought much earlier and more systematically". This means that if the student has not gained the necessary knowledge earlier in primary and secondary school the learning of mathematics in university is much more difficult. Some students develop fear towards Mathematics due to their misunderstanding, non-understanding and failure during previous lessons (Glenn, 1977). Maand Kishor (1997) stated that mathematical anxiety is developed as a result of having a phobia of mathematics due to general lack of calm. According to Goodrum, D., Hackling, M., and Rennie, L (2001), as cited in (Pia, 2015) teachers are the most important factors to improve students' learning; therefore, teachers may be the main protagonist in helping their students' understanding mathematics. The teacher is required to pay more attention to students' awareness of developing learning skills and study habits, recognizing and analyzing problems and predicting solutions to them. Thereby gathering data and feedback from the students who have mathematics in their study programs is very important, in order to recommend adequate measures that policymakers should undertake in the education system from early stages

1.1 Research questions

1. What are the perceptions of the students on teaching and learning of mathematics for economics and business at university level?
2. What are the student's attitudes towards mathematics?

Research Methodology

The research strategy of this study consists of quantitative research design using the deductive reasoning. The survey was conducted with the students of the first year studying at the faculty of economy from three universities (two universities are dislocated in Pollog region and one in Skopje region in North Macedonia) by means of a probability sampling technique by applying a systematic sampling procedure. The sample includes 100 students from which 60

were female and 40 male, due to the higher number of female students in the respective faculties of economy. The instrument of the data collection was through a self-completion questionnaire that involves 20 closed pre-coded choice questions. The survey occurred during the classes of mathematics for economics and business by a supervised survey. The advantages of closed questions compare to open ended questions include better response rate and less missing data as well as easy to process and to compare answers. However since the survey is only conducted in just three universities out of 19 in North Macedonia the results cannot be generalized for the entire population, meaning that the external validity of the study is questionable.

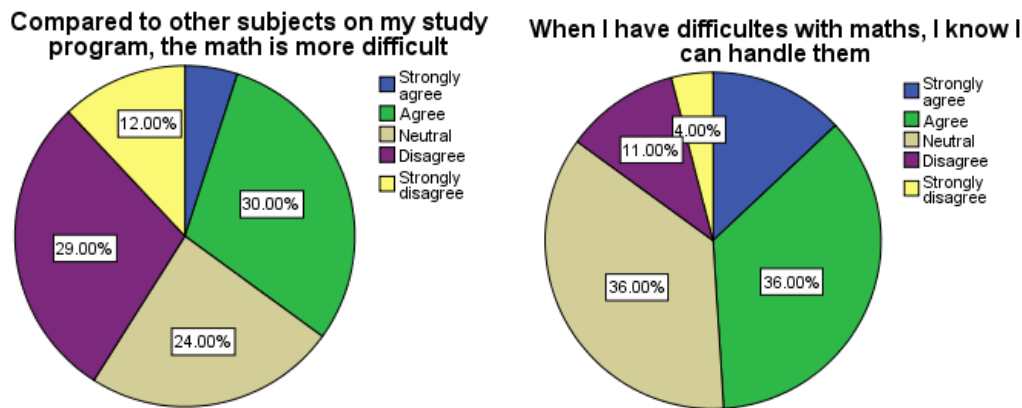
The factors in teaching and learning mathematics, are divided into three sub categories: demographic factors (gender, age), instructional factors (teacher competency, instructional strategies and techniques, curriculum), and individual factors (self-directed learning, arithmetic ability and attitudes towards mathematics).

RESULTS AND DISCUSSION

In this section, the results obtained from the survey are presented and discussed. Descriptive statistics is used to display the results of the survey. The reasons for gathering student feedback are many and various. These can be viewed from several perspectives: the student, the institution and the nation. The percentage of female students is higher compare to male students in the faculty of economy. Therefore 60% of surveyed students were female and 40 % male. The mean age of the students is 19.62 years old with a standard deviation of 1.099.

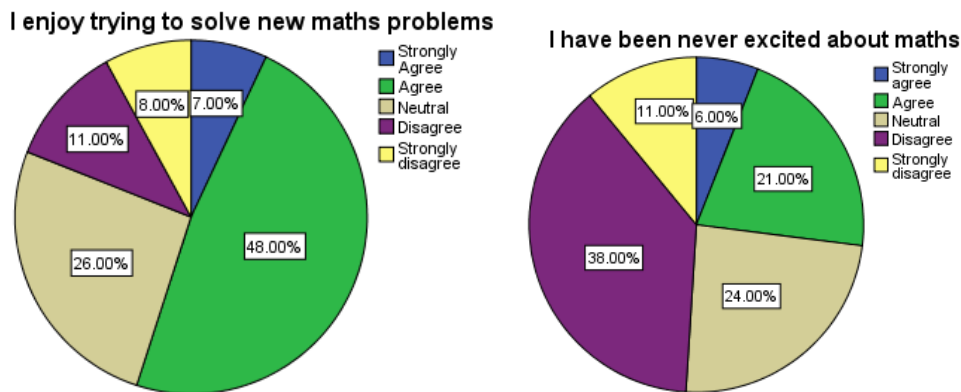
In the first question the students answered if mathematics is more difficult compare to other subjects in the curricula (see Chart 1 below). Based on the results 30% of the students agree that mathematics is more difficult in their study program compare to other subjects, whereas 29% disagree, 24% are neutral and 12% strongly disagree. If we take into consideration those that strongly agree and agree, for more then one third of the student’s mathematics is still among the most difficult subjects.

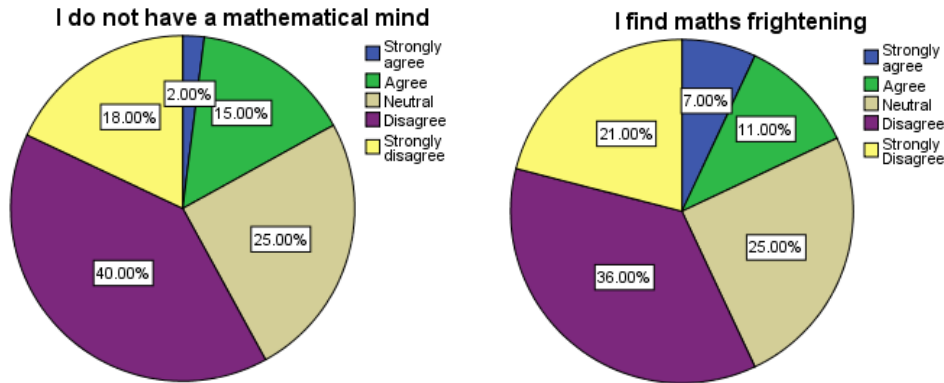
Chart 1. Student’s opinion on the difficultness of the course of mathematics



Concerning the question of solving new math’s problems 48% agree, 26% are neutral, 11% disagree and 8% strongly disagree. Whereas about the question on excitedness 21% agree that have never been excited about maths and 38% answered that disagree, meaning that mathematics is an interesting course for them.

Chart 2. Students’ attitudes towards mathematics

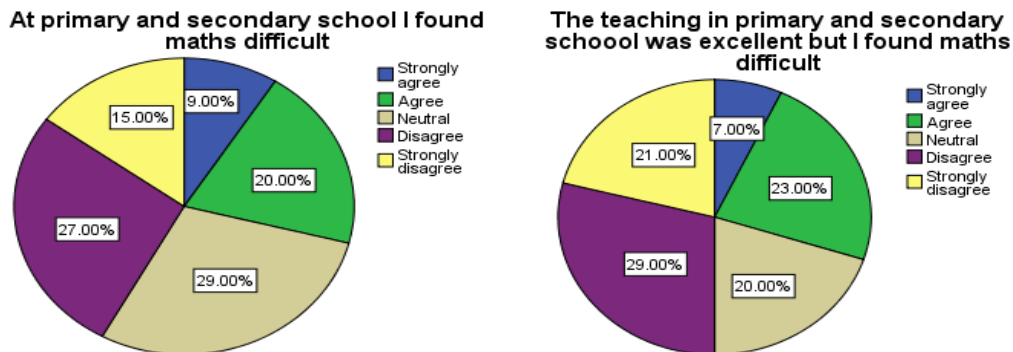




The following two questions are regarding student’s perception towards mathematics at primary and secondary school. For 29% of the students, mathematics has been difficult since the primary and secondary school, from which 9% strongly disagree and 20% agree. Also 29% are neutral concerning this question, 27% disagree and 15% strongly disagree. The next question is about the quality of teaching in primary and secondary school, for which 29% of the students disagree that the teaching was excellent and 21% strongly disagree. These answers are of concern as half of the students were not satisfied with the quality of teaching and learning.

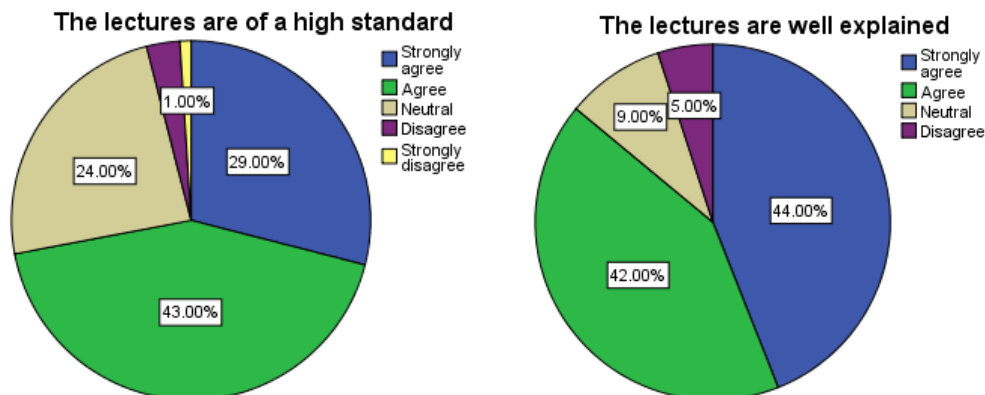
The results indicate that many students believe that mathematics and its learning is for distinct set of students. Furthermore, mathematical abstraction usually discourages students from learning mathematics and creates misconception about mathematics that has no relationship with the social well-being of people.

Chart 3. Mathematics at primary and secondary school



As far as mathematics at university level 43 % and 29% of the students agree and strongly agree, respectively that the lectures are of high standard. The used teaching methods and resources have influenced to better understanding of the subject. Also the students value the well explained lectures since 42% and 44% agree and strongly agree, respectively (see Chart 3 below). Only a small percentage disagree and strongly disagree for these two questions. These answers serve as a motivation for the instructors to continue with the outstanding teaching practices.

Chart 3. Teaching at the university level.



CONCLUSIONS

The intention of this research was to investigate the student's attitudes towards mathematics at university level at economics and business departments. For that purpose, a survey with 100 students was conducted from three universities in North Macedonia. In the survey 60% of the respondents were female and 40% were male. The data were gathered through a self-completion questionnaire during the classes of mathematics. Based on the results the course of mathematics is still among the most difficult subjects in the curricula for about one third of the students. It was found that the lack of knowledge spring from primary and secondary school, implying those students to have learning difficulties at the university. The students evaluate very well the lectures at university level and these good practices should continue and further be improved in the future.

REFERENCES

- Budinski, N., Takaci, (2013) Using computers and context in the modelling-based teaching of logarithms, *Computers in the School*, 30 (1-2), 30–47.
- Gezahegn, Y. B. (2007). Barriers to teaching and learning mathematics in grade four, Unpublished Masters of Philosophy, University of Oslo, Norway.
- Glenn, J. A. (Ed.). (1977). *Teaching Primary Mathematics Strategy and Evaluation*, London WC2E 7PN, England, Harper and Row Ltd.
- KanizFatema Pia, (2015). "Barriers in Teaching Learning Process of Mathematics at Secondary Level: A Quest for Quality Improvement." *American Journal of Educational Research*, vol. 3, no. 7: 822831. doi: 10.12691/education-3-7-5
- Ma, X. and Kishor, N. (1997). Assessing the relationship between attitude towards mathematics and achievement in mathematics: A meta-analysis. *Journal for Research in Mathematics Education*, 28(1), 26-47.
- Sarkar, M. A. and Gomes, J. J. (2010), Science teachers' conceptions of nature of science: The case of Bangladesh. *AsiaPacific Forum on Science Learning and Teaching*, 11(1), 1.
- Taba, H. (1966). *Teaching strategy and their cognitive functioning in elementary school children*, San Francisco state college.
- Taylor, P. (2006). Challenging mathematics and its role in the learning process. *Lecturas Matemáticas*. Vol special, 349-359. Retrieved on 20 June from www.scm.org.co/Articulos/867.pdf.