A REMARK TO READINESS OF STUDENTS IN DOMAIN OF MATHEMATICS LITERACY AT THE UNIVERSITY STUDY

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Abstract: A level of mathematics knowledge at average graduates of the grammar (secondary) schools and applicants to economical and technical faculties is at the historical minimum. The extemporaneousness of candidates to the study itself is on the other hand at the historical maximum. Important is the fundamental alone, with which the students of grammar (secondary) schools flow into universities. We can observe here a long-time retrogressive level of the mathematical preparation at secondary schools.

Key words: Literacy, student, survey, diagram, mathematics

The literacy is defined as an ability of individual to recognize and comprehend different problems.
The mathematical literacy requires, to use mathematics, and to proceed with it by ways, which correspond to the life needs. The mathematics has an important place in the system of education. Insufficient mathematical base, which have students in economical and technical faculties, and insufficient experience with mathematical solution of problems decrease a presentation of analytical methods used in economy and technical subjects. Reduction of number of lessons for mathematical tuition leads to lowering of level in achieved knowledge, which is directly linked to tasks in study programs at different types of universities.

Considering the fact, that once a five year study at the university has been split into a tree years study at the first stage, namely a bachelor study, and subsequent second stage, as a master study, then for the mathematics education arises a cardinal problem, because the major part of the mathematics training is left in the first and the second year of bachelor study. The implementation of further mathematics education is then realized during the master study only in a voluntary subject framework.

Therefore, for the mathematics education one ought to be:

- *accurate at performing individual calculations.*
- *convinced about an effective application of mathematics*
- *capable to master at the sufficient level relevant concepts from mathematics*
- *able to make use of mathematics knowledge*
- *aware, which and where, to utilize a particular method*

From information, derived at interviews with students, who finished studies at the grammar (secondary) school, can be concluded, that the selection of university chosen by a particular student is also influenced by a request of the mathematics knowledge.

We have made a survey in this field, on a sample of 70 students at the university, where exist the faculties of economy and technology. The survey was performed in a form of answers to questions as follows:

1. I was influenced by my knowledge of mathematics at the selection of a particular university:
2. The mathematics was my subject:
3. I have graduated in a subject of Mathematics:
4. During my study at the university I have been using recommended mathematical references:
5. I was utilizing the Internet at the study:

And here are the answers:

Question 1: *Were you influenced by your knowledge of mathematics at the selection of a particular university? :*

 a) Yes   29,9 %

 b) No   21,3 %

 c) I did not consider it   48,7 %

Question 2: *The mathematics was my subject:*

 a) Unpopular   28,4 %

 b) Favorite   10,2 %

 c) I did not consider it   62,4 %

Question 3: *Have you graduated in a subject of Mathematics?:*

 a) Yes 12,5 %

 b) No 87,5 %

Question 4: *During my study at the university I have been using recommended mathematical references:*

 a) I made use of them to a collections of tasks 57,5 %

 b) We did not have any literature to our disposition 12,3 %

 c) I was actively working with literature 29,5 %

Question 5: *I was utilizing the Internet at the study:*

 a) Actively to the collections of tasks   56,8 %

 b) Because we did not have any course book 27,9 %

 c) I did not have opportunity to utilize the Internet 5,3 %

Based on monitored questions and evaluated answers from the survey implies, that a problem is to be solved, whether it is manageable to enforce at the training of mathematics such an operating atmosphere, together with common endeavor of all involved subjects - above all specialized university departments - which can motivate students to the deliberate preparation for future application of the mathematics knowledge. It is inevitable to persuade students, who frequently hear from different sources on uselessness of mathematics, that this opinion can not stand such ground at any university of the economic or technological nature.

Due to the fact, that when entering the university, more obligations increase for students, then for effective utilization of allocated time it is important and correct, to have a systematic and effective study, and to restrict in this way variations of their knowledge.

We have received a request from "The Institute of information and prognosis of education" to our Department of Mathematics of UPHV TnUAD in Trenčín, to fill in a questionnaire for the task: "The readiness of graduates from the grammar (secondary) schools in the university study".

We can select from the questionnaire:

Question: *How has changed understanding and readiness of graduates from grammar (secondary) schools, who decided to study in your faculty during the recent years?*

Answer: The graduates from gymnasium (secondary) school and graduates from vocational schools register regress, and lowering the level mathematics knowledge.

Question: *Characterize and supplement presumptions (abilities, qualities) which enable graduate of a grammar (secondary) school to study successfully in the university*

Answer: The contemporary graduates are lacking inner motivation to study successfully. To the contemporary graduates generally is not missing ability of searching and processing of information, and work with a personal computer.

Question: *What virtues in a readiness to the university study have the contemporary graduates when compared with graduates of 10 to 15 years before?*

Answer: None. The A level exam from mathematics is missing. The mathematics literacy is missing for technical faculties.

Question: *What is missing to the readiness of the contemporary graduates for the university study when compared with graduates of the 10 to 15 years before?*

Answer: The knowledge of students is superficial. They can utilize only little former information from the mathematics in consecutive study subjects at the university.

Question: *In what way (how) should middle schools (secondary) improve their work, as their graduates can better fulfill your visions in the readiness to study at your faculty, or respectively how a transition to the university study could be more smooth?*

Answer: A calculation technique of students is decreasing by every year, what can be observed in written tests.

Question: What has changed at the technologically oriented faculties?

Answer: At the faculty which is technologically oriented can be observed regular decrease of students (population, disinterest) by every year. Entry exams are not performed, only selective actions are done, what means lowering of knowledge in not only the graduates from the vocational schools. What is needed is to have a knowledge, and not to guess the correct answer when the students pass an examination.

And what has changed after the ten years time in the domain of mathematical literacy of students?

It can be concluded, that changes which are in the present process as far as the subject of *Mathematics* is concerned, put forward questions what to teach, and how to teach mathematics, and these problems are not solved, yet. They have to be treated in such a way, as to be satisfied with the level of knowledge and personal readiness of grammar (secondary) schools graduates at their transition from intermediate school to the university.

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