RESULTS OF IMPLEMENTING BOLOGNA PRINCIPLES OF STUDIES IN COMPUTING SCIENCE IN TECHNICAL COLLEGE OF VOCATIONAL STUDIES ČAČAK

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ABSTRACT
Bologna principles of studies have been introduced in Serbian college curriculums recently and the first results of its implementing are available. In Technical College for vocational studies in Čačak, these principles were first applied in 2004 in all the subjects of the curriculum, and in 2007 the College received the official certificate of the Republic Ministry of Education for teaching in the field of engineering.
A special segment in the whole system of implementation has been dedicated to the analysis of the teaching process and exam analysis. Application of contemporary information technologies in this field of work, enables a thorough analysis of the information and monitoring, and thus provokes corrective actions in the teaching process. In that way, quality of education at the College increases.
Comparing to the results in the years before the Bologna principles were introduced in our school system, the students enroled in 2007 actaully did better in both practical and theoretical work. In the years before Bologna, students used to attend classes and sit for the final exam at the end of the semester. But now, they can actually 'earn' the pass grade if they show enough computer skills and knowledge during the semester.
The newer curriculum motivated students to be more active and attentive during the classes, so they asked more questions and were deeply involved in the field of study. The analysis of the given statistics has showed some other interesting things, as well. According to the figures, students spent less time studying at home.
Keywords: Bologna principles, computer science, curriculum.

1. EDUCATION POLICY OF TECHNICAL COLLEGE FOR VOCATIONAL STUDIES

Technical College for Vocational Studies Čačak was founded in 1960 and it is one of the oldest colleges in our country. Since its foundation, the college has been developing continually. There were many successful periods in the work, but some less successful as well. However, more than 4000 engineers have graduated from the college since its beginnings.

Throughout its constant work in education, college management has given its best to implement new educational methods and stay in touch with all up-to-date requrements of a modern college. As the society has been changing its needs and requirements, Technical College for Vocational Studies has been changing curriculums and study programs. College staff have given their best to keep up with the latest European educational systems.

Traditional old-fashioned teaching has had many drawbacks and does not conform the requirements that everyday hi-tech life imposes. That is the reason why Technical College for Vocational Studies Čačak, before other colleges in the region, started with Bologna principles implementing in the curriculum in 2003.

2. BOLOGNA PRINCIPLES IMPLEMENTING IN THE CURRICULUM

Bologna principles allow colleges to make their studies more attractive. By accepting Bologna declaration we have acquired a system which provides a simple analysis and knowledge comparisons. Diploma supplement has been introduced so that opportunities for job prospects of citizens of Europe could be promoted in the overall international competition in the system of the European educational system. A new system has been adopted, which is based on two cycles, graduate and postgraduate studies (specialized studies), and it has a regular strategy of earning credits which allows students and teachers to participate in exchange programs. A special emphasis has been given to quality insurance which includes defining and introducing duties, responsibilities and rules of conduct of all the participants in the educational system, having accreditation and evaluation of the curriculum and interior/exterior quality control as well.

Bologna principles of studies have been introduced in Serbian college curriculums recently.

In Technical College for Vocational Studies in Čačak, these principles were first applied in 2004 in all the subjects of the curriculum, and in 2007 the College received the official certificate of the Republic Ministry of Education for teaching in the field of engineering. Since 2007/2008 our college has started using the system regularly and working according to its principles and the first results of its implementing are available.

3. FIRST RESULTS OF BOLOGNA IMPLEMENTING

One of the most important subjects in the program, Computer Science, has undergone many major changes in order to make the field of study more familiar to students and give better pass results in the final examination. The curriculum includes several computer programs such as Windows, MS Office and gives students broad knowledge in these basic programs.

The exam consists of two parts – practical work (done in three separate tests) on a computer and a more theorethical one – a written test in computer literacy. All students take one exam part at a time (one program – one test) and every successful task they do is awarded with a certain number of credits. Their work is constantly monitored the whole semester and even their presence on the actual classes can get them some bonuses.

Comparing to the results in the years before the Bologna principles were introduced in our school system, the students enroled in 2007 actually did better in both practical and theoretical work. In the years before Bologna, students used to attend classes and sit for the final exam at the end of the semester. But now, they can actually 'earn' the pass grade if they show enough computer skills and knowledge during the semester.

During the school year 2005/2006, all students have been sitting for the practical part of the exam as a whole. The number of students in a group on a practice class was 35. The number of freshmen in 2007 was slightly smaller than in 2006, but the percentage of those who passed the exam was higher – 15% higher than in 2006 (figure 1).
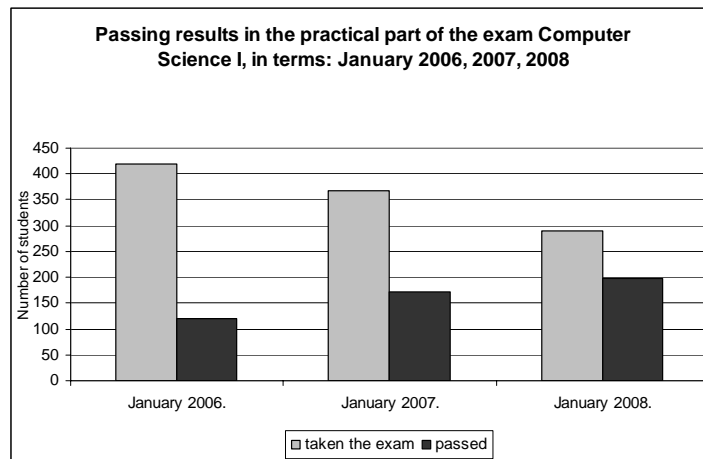
Passing results in the practical part of the exam Computer Science I, in terms: January 2006, 2007, 2008

Figure 1. Passing results in the practical part of the exam Computer Science I

Overal understanding of the application of the computer programs and computer science has increased for approximately 20%, proved on theorethical part of the exam. The newer curriculum motivated students to be more active and attentive during the classes, so they asked more questions and were deeply involved in the field of study.

The analysis of the given statistics has showed some other interesting things, as well. According to the figures, students spent less time studying at home. Boys had slightly better results and higher marks in the final exam.

Since 2006/2007, we have startes implementing Bologna principles in teaching methods. Number of students on a practical class has been cut to 30 per group. The practical part of the exam in Computing Science has been split into parts. It has three main parts: MS Windows, MS Word and Internet (Internet Explorer and Outlook Express). The passing rate on the practical part of the exam comparing to the previous year has increased for about 20 %.
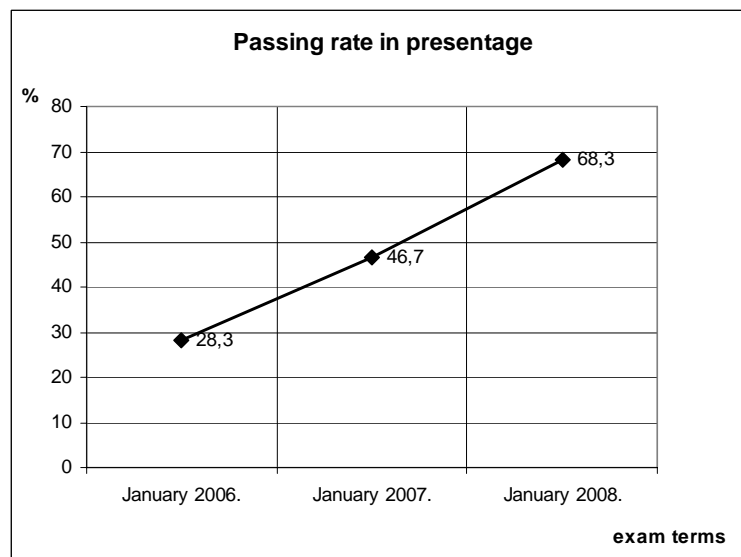
Passing rate in presentage

Figure 2. Passing rate in percentage during the last three exam terms (January)

In the year 2007/2008. we had the first generation of students which was officially studying according to Bologna principles. Number of students in the groups has decreased for 30 % comparing to to the previous year and it is 20 students per group. All this given, has a positive outcome for increasing the success of students studies. Number of students who passed the practical part of the exam in January 2008 is 68% of the total number. That is 20 % bigger success compared to the previous year, when the students were taking the practical part of the exam partially, but the gropus were bigger that the Bologna principles are imposing.

Taking all these results into account, we can conclude that, annually, the passing rate in the last two years has incresed, so we can predict that the overall passing rate in this year will be much bigger than earlier (figure 3).
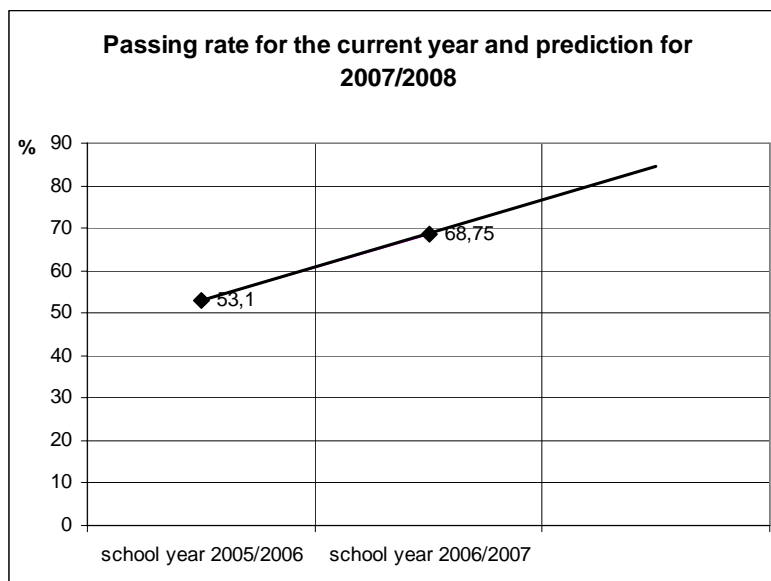
Passing rate for the current year and prediction for 2007/2008

Figure 3. Passing rate prediction for 2007/2008

4. CONCLUSION

Monitoring students' success in every examination term is one of the important signals in the analysis of the success in studying in the process of the quality control of the curriculums. The second signal is achieved success (average grade) during the studies, which can give additional information if the quality decreasing period has come, and after a thorough analysis is done certain corrective measures for establishing quality in certain subjects could be introduced. Evaluation of the study programs and quality management always goes along with the level of the achieved success, and the college management undertakes certain measures if the level is below the demanding one, so that the college can be in the constant process of the improving the educational system.

5. REFERENCES

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