On the evaluation of students achievements and knowledge using modern technology

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Introduction

Education is a driving force for economic and social development of every country. The students' future depends on the applicability of knowledge and skills built up during the educational process. Significant state resources, not just financial, but from the entire community are invested in the improvement of education, and students preparation for the life challenges. Technological developments have a strong influence on evolving education paradigms toward a teaching enhanced with information and communication technology (ICT). Many factors are influencing successful implementation of software for solving particular problems and inconsistencies in education practice and teaching approach. Within the education system in Serbia, students are required to participate in the national testing at the beginning and at the end of the school year (standardized tests that assess students' knowledge level).

The goal of this paper is to present the education software tools for the evaluation and monitor of students' knowledge and achievement, at the national level by monitoring and analyzing initial and ending student's tests results. There will be emphases the model of such software, and highlighted roles of participants in the educational process. In particular the attention is directed towards defining analytical reports presenting statistical information about various factors of students' progress, classes and schools districts. Such testing would be indicating the good and bad teaching practices which can serve as a model for the new strategy of improving education.

The analysis of the results collected in these tests would be beneficial not only for students and teachers, but for the entire education system. Platform "Initial Testing of Knowledge" is being developing by doctoral student at the Faculty of Mathematics at Belgrade University and Faculty of Sciences at University Novi Sad.

Methods

Due to various factors that affect the performance of this type of testing, it was necessary to find a consensus about the division of corresponding content. The platform "Initial Testing of Knowledge" can be used to test student from fifth to eight grade (from 11 to 14 years old). The content of each grade is divided in 10 parts and two random tasks are taken from each part. Since the platform is interactive, the number of parts and tasks could be adjusted to needs and preferences of the authorities.

The beta version of the software is being tested in minimum four stages.

The first stage was conducted from September to November 2014. In five elementary schools were tested approximately 500 students.

The next stage is scheduled for June 2015. The authors are planning to test minimum 1000 students of same age group as in first stage from minimum 10 elementary schools.

The next two stages are scheduled for the September 2015 and June 2016.

Results and Discussion

The results of the first stage of testing are presented on the official page of the platform.

Conclusions

Using this type of platform allows reduction of costs and time of testing, enhances the safety of the testing process, reduces chances of errors and disables students' cheating. Obtained data can be analyzed by students, teachers and other participants in the education process.

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