Online self-assesment as preparation for final exam in primary schools – experience from COVID19 crisis

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Abstract – In this paper we discuss online self-assessment of students in final grade of primary school, implemented during COVID-19 crisis in Serbia. Results and statistics of online self-assessment are explained and discussed.

I. INTRODUCTION.

As the number of COVID-19 cases in the world increased and virus began to spread, there were announcements that it will be difficult to finish current school year and teaching process. It became obvious that it will be not possible to carry out all activities and finish the school year in regular conditions.

Ministry of Education, Science and Technological Development of the Republic of Serbia, and thus the entire education system in the country, had to react very fast, especially after the *Decision of the Government of the Republic of Serbia on the suspension of teaching in higher education institutions, secondary and primary schools and the regular work of preschool education institutions ("Official Gazette of RS"*, No. 30/2020*)*, which was adopted in accordance with the *Decision on declaring a state of emergency ("Official Gazette of RS"*, No. 29/2020*)* and the *Decree on measures during a state of emergency ("Official Gazette of RS"*, No. 31/2020*)*. Due to the epidemiological situation in the country, caused by COVID-19 virus, and aiming to ensure uniform acts and treatment in educational institutions, distance learning (Imel, 1998) was organized. Direct work with children in preschool institutions, teaching in all primary and secondary schools, as well as institutions of higher education, has been temporarily suspended. A complex set of activities, that consists of a large number of different programs and digital ways of teaching and learning

in preschool, primary and secondary schools was adopted. The focus was on organized distance learning (Moore, et al. 2011), which should contribute to the implementation of the program contents in general education subjects and professional subjects with largest number of classes (Mandic, et al. 2013).

Already on beginning of crisis, a important decision regarding recording of classes and teaching contents has been announced. By this decision, recordings of classes, which would be broadcasted on the national television channels, has been made. Quick reaction of educational system was distinct, but also courage of some teachers, who dared to appear on television, talking to the audience of million, and started very important work for the future of our children and future of our nation. Although distance learning is not our invention and it was known in the world for last several decades, some footage from state television will go down in history and stay in the annals of our educational system[1].

In Section II. we present and discuss online test for self-assessment, that is used in Serbia, during COVID19 crisis.In Section III. we discuss some results and facts, obtained from self-assessment process. Conclusions are given in Secton IV.

II. ONLINE TEST FOR SELF-ASSESMENT

During COVID19 crisis, Ministry offered [2] to eighth graders (about 68,000 students in generation[3]) one opportunity to test their knowledge, in order to prepare better for final exam at the end of

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[1] https://www.oecd.org/education/Supporting-the-continuation-of-teaching-and-learning-during-the-COVID-19-pandemic.pdf
[2] https://www.oecd.org/south-east-europe/COVID-19-Crisis-in-Serbia.pdf
[3] https://www.stat.gov.rs/sr-Latn/oblasti/obrazovanje/osnovno-obrazovanje

Figure 1.   Portal "My Classroom"[9]

primary school. In accordance with situation, but also towards tendencies for digitalization and use of new technologies in education, an online test was only suitable solution. Online self-assessment of knowledge, so called "trial final exam", was organized in April. Ministry of Education, Science and Technological Development, Institute for Evaluation of Quality of Education, Governmental office for IT and Electronic Administration and Comtrade Company joined efforts, created standardized tests and made it available to eight graders in suitable online environment "MyClassroom" (Fig.1), established and managed by Comtrade, Belgrade.[4]

Online self-assesment, as a tool for teting the sutdnets knowledge is already well-known and used in previous period. There are a lot of webpages, webportals, designed for his purpose[56] and a lot of scientific papers and other texts on internet[78].

This self-assessment of knowledge was the first and only online test in Republic of Serbia that has been implemented on whole generation, with more than 68000 students.[10] For the first time in the history of Serbian education, all students in one grade had opportunity to test their knowledge in completely changed conditions, in online environment, and with same items. We can expect that this form of support could be usual educational practice in near future.

Tests for self-assessment of knowledge are designed so that students have opportunity to test their knowledge (Barak A. 2011). Two months before official final exam at the end of primary education. They tried to do three tests (Fig.2), that include a total of seven subjects (mother language, mathematics, physics, geography, history, chemistry and biology). So, we decided to develop self-regulated learning and self-assessment of current student's knowledge level. The self-assessment of knowledge in digital environment was designed with the intention of giving eighth grade students the opportunity to test their own knowledge and, based on those results, to plan further learning.
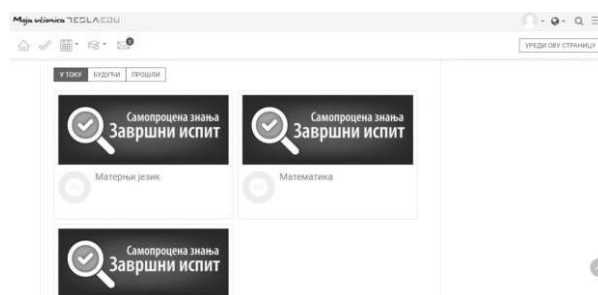

Figure 2. Online enviroment with three tests

Additionally, students had the opportunity to develop and improve their digital competencies.

Institute for Evaluation of Quality of Education prepared items and tasks (mother language, mathematics, chemistry, physics, history, geography and biology) and adapted them for self-assessment in digital environment.

Internet platform "MyClassroom" is based on moodle.[11] Digital environment itself is localized in Serbian language, cyrillic and latin alphabets, as well as in 8 languages of national minorities (Albanian, Bosnian, Bulgarian, Hungarian, Romanian, Ruthenian, Slovak and Croatian).

Eighth grade students took the tests during three days, in period from 8h to 20h. They had a chance to solve each test once, lasting 60 minutes (mother language and combined test) or 90 minutes (mathematics).

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[4] https://www.rasporednastave.gov.rs/lat/alati-uputstva.php

[5] https://www.questionmark.com

[6] https://www.testportal.net

[7] https://elearningindustry.com/qualitative-elearning-assessment-methods-track-online-learners-progress

[8] https://www.onlineassessmenttool.com/knowledge-center/assessment-knowledge-center/assessment-methods-and-strategies/item10643

[9] https://www.mojaucionica.gov.rs

[10] https://www.srbija.gov.rs/vest/en/154782/online-testing-for-eighth-grade-students.php

[11] https://www.mojaucionica.gov.rs/mod/page/view.php?id=1

Figure 3. Numbers and facts - after online self-assesment (see [6])

III. RESULTS

Out of a total of 68504 eighth grade students in Serbia, 63215 solved mother language test, 62220 mathematics and 62863 combined test (five sciences). Based on these data, we can be sure that each test was done by more than 91 percent (!!!) of students. So, most of the students approached self-assessment with big responsibility, and there is a reason to believe that they solved tasks independently.

Average number of points was: 13.68 points (mother language), 13.56 points (mathematics) and 14.63 points (combined test)[12]. Everything is shown on following chart, that is obtained from *Comtrade*'s portal (Fig.3, see reference [7])

The results of this online test cannot be compared with the results of the final exams in previous period, having in mind the differences between tests, as well as their purpose. There are good reasons to believe that large percent of students solved tests without someone's help and they used this test properly, for self-assessment of their own knowledge. However, it is interesting how new technologies and portals of this type provide various statistical views and a lot of interesting data, after testing. The following figures shows some statistics, for each subject, for each test separately, for each

individual item, all in relation to the language in which the candidate took the test.

After this online self-assessment, all items and results from the all previous final exams, from period 2011 to 2019, were uploaded on portal *www.mojaucionica.gov.rs* sand they are still available to all candidates. Completely in spirit of this distance learning period, eight graders are additionally supported by broadcasting detailed analysis of all items from self-assessment, over national television.

IV. CONCLUSIONS

In this paper, we considered online self-assessment of knowledge of final grade students of primary schools in Serbia. Results and statistics of online self-assessment, are discussed. Based on this consideration, we have several conclusions.

Online self-assessment of eighth grade students was first online testing in our education system, which was conducted comprehensively, on the whole generation of students, at the same time, with the same items and under same conditions - for these reasons, this is a large step forward for the educational system of Republic of Serbia. This model needs to be refined and explored and used.

Using of portal *https://www.mojaucionica.gov.rs* (see [6]) for online self-assessment is a pioneer attempt in our Serbian education and also wider, in region. Despite the fact that existing hardware resources and existing professional support were not

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[12] http://www.mpn.gov.rs/analiza-onlajn-testova-za-samoprocenu-znanja-za-zavrsni-ispit-i-postavljanje-testova-i-rezultata-sa-prethodnih-zavrsnih-ispita/

enough to lead to absolutely successful implementation, despite the problems during this process, entire online assessment was successfully completed. Any other subsequent testing, aimed to be performed in similar manner, should be planned more carefully, with additional hardware resources and with slightly better planning.

Expectations about digital abilities of eight graders were significantly lower and such a high percentage of responses to online self-assessment was not expected. As over 91% of eighth graders[13] managed to access the portal and to take online tests, means that most primary school students are digitally literate, that they have some kind of access to internet and that they have appropriate devices (computers, tablets, smartphones) to do test online. However, the goal of our education system for future should be 100% response of students to any digital challenge.

Test results and the number of points that students scored on the online self-assessment, are very similar with earlier final exams or even better. However, they are not relevant for comparison, due to a different environment, different testing conditions as well as a lack of any control. Further work on raising the awareness of students and parents about the importance of online testing without any "cheating" would lead to online testing results that are relevant and usable.

All results are obtained from official webpage of Minsitry of Education or directly from http://tesla.edu.rs and company Comtrade, that is managing portal "My Classroom". There is a very powerfull analysing tool, https://app.powerbi.com that produces various usefull reports, including the one on Fig.3.

Statistics after online self-assessment, as well as all other relevant data on testing, were obtained shortly after completion of tests. They offer us a whole new approach in research work in education,

because they go much beyond methods of data processing, that we are using now.

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