UNIVERSITY OF NOVI SAD
TECHNICAL FACULTY
"MIHAJLO PUPIN"
ZRENJANIN

ITROCONFERENCE 11
INFORMATION TECHNOLOGY AND EDUCATION DEVELOPMENT

PROCEEDINGS

ZRENJANIN, Oktobar 2020

UNIVERSITY OF NOVI SAD
TECHNICAL FACULTY "MIHAJLO PUPIN"
ZRENJANIN
REPUBLIC OF SERBIA

XI INTERNATIONAL CONFERENCE OF

INFORMATION TECHNOLOGY AND DEVELOPMENT OF EDUCATION ITRO 2020

PROCEEDINGS OF PAPERS

XI MEĐUNARODNA KONFERENCIJA

INFORMACIONE TEHNOLOGIJE I RAZVOJ OBRAZOVANJA ITRO 2020

ZBORNIK RADOVA

ZRENJANIN, OCTOBER 2020

Publisher and Organiser of the Conference:
University of Novi Sad, Technical faculty „Mihajlo Pupin", Zrenjanin, Republic of Serbia

For publisher:
Dragica Radosav, Ph. D, Professor,
Dean of the Technical faculty „Mihajlo Pupin", Zrenjanin, Republic of Serbia

Editor in Cheaf - President of OC ITRO 2020:
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Circulation: **50**

ISBN: 978-86-7672-341-6

CIP - Каталогизација у публикацији
Библиотеке Матице српске, Нови Сад

37.01:004(082)
37.02(082)

INTERNATIONAL Conference of Information Technology and Development of Education ITRO (11 ; 2020 ; Zrenjanin)

Proceedings of papers [Elektronski izvor] / XI International Conference of Information Technology and Development of Education ITRO 2020 = Zbornik radova / XI međunarodna konferencija Informacione tehnologije i razvoj obrazovanja ITRO 2020, Zrenjanin, October 2020. - Zrenjanin : Technical Faculty "Mihajlo Pupin", 2020. - 1 elektronski optički disk (CDROM) : tekst, graf. prikazi ; 12 cm

Sistemski zahtevi: Nisu navedeni. - Nasl. sa naslovnog ekrana. - Elektronska publikacija u formatu pdf opsega 265 str. - Bibliografija uz svaki rad.

ISBN 978-86-7672-341-6

а) Информационе технологије -- Образовање -- Зборници б) Образовна технологија – Зборници

COBISS.SR-ID 26470409

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With this publication, the CD with all papers from the International Conference on Information Technology and Development of Education, ITRO 2020 is also published.

Switching to Online Education, Experiences from Hungary and Serbia

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Abstract - This study examines the impact that the Covid-19 pandemic had on education systems in 2020, with particular reference to Hungary and Serbia. It examines technical possibilities and solutions, and covers methodological principles as well. The study outlines all this in the light of the available statistical and official reports.

I. INTRODUCTION

As a result of the Covid-19 pandemic, social conditions around the world have changed radically in a short time. In addition to social conditions, education has also been significantly affected by this global pandemic. A large number of educational institutions have been closed, and the only option for continuing education became (online) distance learning. According to visualized UNESCO (https://en.unesco.org/covid19/educationresponse) reports, April 2nd saw one of the highest amounts of school closures, when 84.8% of the total enrolled learners' institutions had been closed either partially or completely. At this time, this process has affected 1,484,712,787 learners and 172 country-wide closures from 210 countries.

In this situation, due to the circumstances, the transition to distance learning was not a result of pedagogical innovation but rather an emergency response. Nonetheless, some institutions have handled the situation successfully, and in many cases, even created a more efficient, interactive and learner-centered educational environment. In many cases, however, these emergency solutions have not been founded on well-thought-out strategies. Our view is that the teacher's explanation should not be left out of any education system, so that the effectiveness of the tasks sent via e-mail doesn't fall short of the expected efficiency and interactivity.

II. PUBLIC EDUCATION

In Serbia, a state of emergency was imposed on the 15th of March, 2020, which lasted until the 6th

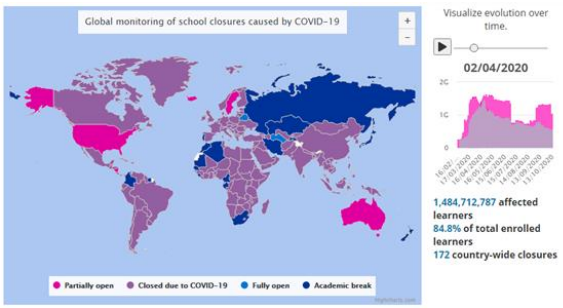

Figure 1.: The number of children and youth not attending school because of closures mandated by governments in an attempt to slow the spread of COVID-19 on April 2nd (source: UNESCO)

of May (Службени гласник РС", бр. 29/2020, Службени гласник РС", бр. 65/2020). Starting from the 17th of March, education has been organized in the form of distance learning and traditional education was completely discontinued. The Ministry of Education, Science and Technological Development has adopted an operational plan that includes a large number of different programs and alternative digital ways of teaching and learning in preschool institutions, and in all grades of primary and secondary school. The focus is on organized distance learning that contributes to the implementation of programming with contents of general education subjects and professional subjects with the largest amount of classes (source: http://www.mpn.gov.rs/).

Educational contents are broadcast on the TV channels RTS2 and RTS3, and are also available for downloading through the free application for mobile phones and tablets via "RTS Moja škola" ("RTS My School"), on the RTS website and the multimedia platform "RTS Planeta" (https://mojaskola.rtsplaneta) . A national platform for online learning has been established on the "Moja škola" website available at

www.mojaskola.gov.rs, which supports the broadcasting of classes on RTS. The website available at www.rasporednastave.gov.rs was also established, where the broadcast schedule of the RTS classes is available, along with a link to the platform "Moja škola" www.mojaskola.gov.rs. During the crisis period, Microsoft provided the use of the Office 365 platform for free, within which a version of the "Teams" application, adapted for education, is available. The "Zoom" application is intended for online meetings and is available in a free version with certain limitations in functionality. Due to the fact that some schools use it for remote teaching, for those who do not have Internet access at home, free access to the application was provided through the mobile networks MTS Telekom and Telenor. Upgrading and expanding the functionality for formative monitoring and evaluation of students is done through "esDnevnik" – starting on the 2nd of April, 2020, parents have been enabled to follow all the formative grades of students through the portal's parent module (https://moj.esdnevnik.rs/). For eighth grade students who did not have the conditions to attend distance learning and access the online final exam, Internet access and/or technical devices (tablets and mobile phones) were provided from donations thanks to the Huawei Serbia Office and companies donated 100 tablets. In addition, Comtrade provided 300 phones, Telekom provided 800 Internet cards and 800 phones, VIP donated 800 Internet cards and 400 phones, while Telenor donated 800 Internet cards and 400 phones, which totals at 4,400 devices and cards (source: http://www.mpn.gov.rs/) (Gy. Molnár et al., 2020).

The largest number of students in the Republic of Serbia, according to school reports, is included in the implementation of distance learning - in both primary and secondary schools this is true for 99% of students, while in schools for the education of students with disabilities the coverage is 93%. This applies to both watching TV classes and using the online learning platforms, as well as the use of alternative forms of distance learning (source: http://www.mpn.gov.rs/).

In Serbia, these reports of The Ministry of Education, Science and Technological Development are based on the reports of the individual institutions.

At the end of 2019, the new coronavirus (SARS-CoV-2), which poses an unprecedented threat, has begun spreading worldwide, causing a disease called COVID-19. The Hungarian Government introduced a new digital work schedule in public education and vocational training institutions. (A Magyar Kormány 1102/2020. (III. 14.) számú határozata a köznevelési és szakképzési intézményekben új munkarend bevezetéséről.) This order was in effect from March 16th, 2020, until the end of the respective school year. During this period, online communication between teachers and students, and social platforms played a prominent role in education. The Hungarian Educational Authority formulated methodological recommendations: "The teacher's role in education is complex. On the one hand, the educator is at the disposal of the students as a source of information, the transferor of knowledge, and the developer of various competencies; on the other hand, the educator also has the role of motivating, guiding, and tutoring the students' independent learning. In a situation where the educator does not have the opportunity to maintain direct personal contact with the students, the role of the latter becomes more pronounced: the students' independent learning, information retrieval and processing must be supported."

During this extraordinary period, education in Hungarian schools was organized in a digital work schedule and not in the classroom. In practice, this meant the introduction of online, digital distance learning. In this forced move, online communication technologies and digital media interfaces did not expand the field of education, according to digital pedagogy methodology; however, they did replace the traditional classroom as an interactive platform. Based on the fragmented experience so far, we can say that using the methodology of digital pedagogy in distance learning without physical presence is sufficient if the minimum technological conditions are met. Without it, education is not possible. Even in distance education, it is essential to maintain the classic timetable and the order of lessons as a vital organizing principle. The use of a single learning management system (LMS) reduces uncertainty, as it does not burden students with using multiple different platforms and reduces the possibility of ignoring specific tasks. Asynchronous communication channels (i.e. e-mail, websites) must dominate the course of learning and access to the curriculum, while at the same time, the teacher's instructions must take place on synchronous platforms (video or written chat). The learning management system must archive the chat, video conference, or video stream and make it available to the class community regardless of space and time. During education, it is essential that students receive clear, concise and unambiguous instructions, and that teachers maintain the flow of communication, while also setting time frames for it. Special consideration should be given to avoiding a reduction in the amount of curriculum as well, as it is not possible to transfer the same amount of knowledge in the online environment as in the classroom.

It is also essential to check the reliability of the technology used in distance learning in order to know its possibilities, abilities, and limitations in educational practice. For example, it is not possible to invite an entire class to a video conference; the students must be divided into smaller groups. As long as nonverbal communication in the classroom allows for effective teaching, these communication components are not present in the environment of secondary oral and written language. If a form of technology does not work properly, the stress factor related to learning will be high. Let's suppose there is no personal interaction with the teacher who can handle these kinds of situations as a facilitator, in that case, there is a risk that the mistakes made while using the technology, will create so much distraction that the student will not be able to participate in the learning process. Similar distractions occur when education is not conducted on a single platform, or instructions are not clear. The platform chosen should serve pedagogical purposes and be based on a logic-based platform familiar to both the teacher and the students.

While the classroom curriculum and its extension consist of the knowledge defined by the standard curricula, the teacher is inevitably forced to make significant choices during distance learning. Therefore, it is necessary to restructure the curriculum, and self-checkpoints need to be included in the knowledge transfer system. The advantage of distance learning is that digital technology is based on interactivity and multimedia. However, the length of educational videos also must be adapted to the context in question. Among the frontal forms of work during distance learning, well-composed video presentations should remain within the 15-20 minute scope and cover several topics. The online context supports group work and collaboration, so it is possible to organize a larger number of group project work for students, using cloud-based platforms. However, students need to develop media awareness as well, due to the high amount of fake news and false information available online.

Because online educational frameworks are far from students' everyday media consumption routines, teachers need to display a curriculum in a format that the students are already familiar with. It is not enough to move frontal education into the world of digital devices, but the possibility of teamwork and the experience of secondary literacy has to be taken into account as well. Based on a representative sample conducted between April 28th and May 10th, 2020, our research seeks to learn about the views, attitudes, thinking, and conceptual web of the pedagogical target group, supporting the possibility of modeling in the field. In the course of the research, we asked which online communication channels and digital platforms the teachers said to have proved to be the most efficient in terms of learning effectiveness in the distance learning that was ordered as a result of the COVID-19 emergency. We incorporated our results and conclusions into a unified theoretical framework.

According to the respondents, the most effective tools for expanding the classroom in distant learning regarding educational effectiveness are teacher-made tutorial videos, and real-time written and video-based chat. Some of the less effective tools include blogs, discussion forums, and free-to-write online platforms that support collaboration. Augmented and virtual reality spaces, bulletin boards, digital storytelling, and podcasts are considered to be the least effective. The greatest uncertainty surrounds our educational blogs, augmented and virtual reality learning spaces, discussion forums, online collaboration platforms, digital storytelling, podcasts, and bulletin boards, which also means that teachers have not tried these tools in practice.

Clearly, the digital transformation of lectures, as well as explanations is the most successful. The illustration is also effective in augmenting the classroom, which is not surprising since computers initially served as an illustration in education before their change in function. Student presentations are much more difficult to replace because, for the time being, it is difficult to filter out frauds. Facing technical difficulties can also negatively affect student participation, while having debates is irreplaceable, according to respondents. If we call on communication theory, we can say that the dynamics of communication processes present in and mediated by technology also differ in how effectively the moderator is able to do their work. In the online environment, a significant increase in workload accompanies the teacher's moderating activity. It is also difficult to replace project work; this result correlates with what we have obtained in judging the effectiveness of collaboration platforms. Similarly, the responses received for the simulation were also divided. The proportion of respondents who said pedagogical communication can be extended to online platforms is surprisingly high.

A survey conducted in Hungary using another methodology (Czirfusz, Misley, Horváth, 2020) showed that based on the answers of the responding teachers (N = 1248), 81.29% of the students managed to be involved in the online education process. The same survey showed that the most commonly used solution for the most commonly used online platforms is e-Crete (e-Kréta), which participated as an official platform in the digital agenda for communication, as well as administration. Based on the responses, this interface

was used by 76% of respondents (Czirfusz, Misley, Horváth, 2020).

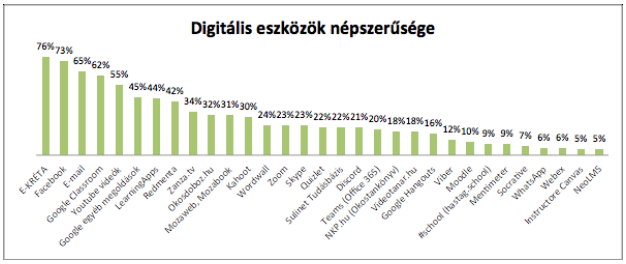

Figure 2.: The popularity of each digital device in Hungary during COVID-19 (Czirfusz, Misley, Horváth, 2020)

In Hungary, at least one third of the students from the group of socially disadvantaged students could not take part in online education (Rosa Parks Alapítvány, Motiváció Egyesület, Partners Hungary - Rosa Parks Foundation, Motivation Association, Partners Hungary, 2020). In most cases, there is a lack of distance learning equipment (laptop, tablet, Internet access) which most schools are unable to help with, as well as a lack of adequate space for learning, and in addition, many such households do not have electricity either. Parents are unable to help interpret tasks and in many cases lack the appropriate digital competencies. The situation is similar for disabled children, but it is likely that the interpretation of tasks and the lack of digital competencies are a problem here (Gy. Molnár et al., 2020).

In Serbia, the Ministry of Education, Science and Technological Development in cooperation with UNICEF and the Institute for Psychology assessed and published a report named: Tracking the ways of participation and learning processes of students from vulnerable groups during education through distance learning (Praćenje načina učešća i procesa učenja učenika iz osetljivih grupa tokom ostvarivanja obrazovno-vaspitnog rada učenjem na daljinu). In primary schools, distance learning covers 83% of students who are members of the Roma national minority who need additional support in education, with 56% of these students watching TV or online classes and 27% receiving alternative forms of support, while 17% of students are not included in learning in any way. In secondary schools, 91% of students from this vulnerable social group are covered by distance learning. Of the total number of these students, almost 74% watch TV or online teaching, and almost 17% participate in distance education through alternative forms of support, while 9% is not included at all (source: http://www.mpn.gov.rs/).

When it comes to students with disabilities, 96% of these students in primary schools are covered by distance learning. About 76% of these students follow TV or online classes, and for about 20% of them alternative forms of support are provided, while the remaining 4% are not included in distance learning. In secondary schools, distance learning covers 97% of students with developmental disabilities and disability. About 87% of students watch TV or online classes, while 10% are included in alternative forms of support, and the other 3% are not included in any form of teaching (source: http://www.mpn.gov.rs/).

When it comes to students from other vulnerable groups, such as students from families of low socioeconomic status, refugees, migrants and others, 94% of those attending primary schools are involved in some form of distance learning. Of the total of these students, about 82% watch TV or online classes, about 12% are covered by alternative forms of support, and 6% are not included in any way. In secondary schools, 67% of students in this category are enrolled in classes via distance learning. Among all these students, 60% watch TV or online classes, about 7% are covered by alternative forms of teaching, and 33% are not included at all (source: http://www.mpn.gov.rs/).

The other area from which most requests for help came was the scope of activities associated with music. Here, fluctuations in Internet bandwidth can result in serious outages and it is difficult to monitor the process, while playing music together online can also be a huge challenge both organizationally and technically (Gy. Molnár et al., 2020).

III. PRESCHOOL EDUCATION

During the state of emergency, kindergarten education also stopped and switched to online. In this regard, the priority tasks of the system of preschool education in this period include the following groups of activities:

1. activities related to the preservation of human health and safety in accordance with the measures prescribed by the Government of the Republic of Serbia, Government decisions, recommendations and instructions;

2. activities that support families with preschool children on how to provide proper conditions for the normal functioning, learning and development of children during the state of emergency and home isolation;

3. activities that support professional networking, networking and exchange of experiences of practitioners in the field of research, joint learning

and competence development (Gy. Molnár et al., 2020).

According to the results of the Questionnaire (whose preliminary analysis was prepared by the UNICEF team), which was completed by 168 public preschool institutions in the Republic of Serbia, in the segment related to activities to support children and their families, the most commonly used media of communication with families were "Viber" and "WhatsApp" services (71%); in second place, in terms of frequency of use, preschool institution employees used social networks for communication with families. Most educators and parents agreed on the optimal way, frequency and terms of communication (84%). Parents, in accordance with their abilities and rhythm of life, were involved in the communication with educators, which is stated by 76% of preschool institutions (source: http://www.mpn.gov.rs/).

IV. PRESCHOOL EDUCATION

Universities and university faculties have independently defined methods and platforms for online education. For example, the University of Novi Sad used a MOODLE-based customized platform, "SOVA" (https://sova.uns.ac.rs/). In contrast to public education, higher education has been re-launched and admission, as well as some laboratory exercises and measurements have been maintained in the traditional way, while also respecting the rules of social distancing and hygiene (Gy. Molnár et al., 2020).

The Serbian Law on Higher Education does not allow online examinations, only on the basis of study programs that have been accredited as a distance learning program. ("The exam is taken at the seat of the higher education institution, ie at the facilities listed in the work permit."). This makes online education and examination significantly more difficult.

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