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EDUCATION PROCESS DURING COVID-19 PANDEMIC – Case of the Republic of Serbia

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Abstract: The outbreak of corona virus in the beginning of 2020 has affected countries on all continents and distorted and reduced human activities to an unprecedented level in recent history. The COVID-19 pandemic has created the largest disruption of education systems in history, affecting nearly 1.6 billion learners in more than 190 countries on all continents. Closures of schools and other learning spaces have impacted 94 per cent of the world's student population up to 99 per cent in low and lower-middle income countries. Ensuring learning continuity during the time of school closures became a priority for governments around the world, many of which turned to ICT, requiring teachers to move to online delivery of lessons. Countries report that some modalities have been used more than others, depending on education level, with variability across regions. In the paper the educational process in the conditions of the COVID-19 pandemic in the Republic of Serbia will be analysed through the analysis of secondary sources and interviews with relevant actors. The aim of the analysis is to point out what worked well, but also to emphasize the mistakes, gaps and omissions in the organization of the educational process, primarily in order to adequately prepare for future crisis situations.

Key words: COVID-19, education process, emergency teaching, online teaching, Serbia

Introduction

Severe crises and disasters have very serious consequences on functioning of society and its vital functions, including education. This is also the case when it comes to a crisis related to human health such as global epidemics (e.g., SARS, Ebola and COVID-19). At the beginning of 2020, humanity faced the global pandemic COVID -19, which spread very quickly from the Chinese city of Wuhan throughout the world. The COVID-19 global pandemic has affected several billions of students worldwide and many schools closed down for months. The education systems of all countries have faced the challenge of how to continue to function in pandemic conditions.

Preparing a crisis plan and putting it into action is crucial for dealing with and adequately responding to any crisis. However, despite the fact that the global pandemic was predictable and recognized in the national risk register in many countries, it can be stated that, in general, countries[44] were unprepared for COVID-19 and that this crisis surprised all

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[44] For example, in the UK National Risk Registry pandemic influenza is topping the ranking, having in mind its relative impact and likelihood. See page 7. on https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/61934/national_risk_register.pdf The UK Department of Health has developed a contingency plan for dealing with SARS and this would provide the basis for dealing with any future outbreaks should

governments and found them unprepared in most areas of social life, including the sphere of education.

In response to this challenge, information and communication technologies have helped, thanks to which a significant part of the educational process has been moved from the physical to the virtual space. This crisis has forced the educational community to an instant adaptation, coming from teaching face-to-face to sharing the learning setting via online services and open educational practices. Suddenly, teachers are forced to prepare online learning materials and transfer their face-to-face teaching activities to online learning platforms (Burgos, Tlili, and Tabacco, 2021).

This has posed a lot of pressures and challenges not only to direct actors (teachers and students/pupils and educational institutions), but also to a number of stakeholders such as parents of school children, mass media, IT and communication experts, political actors etc. Students are facing many obstacles as many of them are not used to online learning mode. Educational institutions and governments are struggling to provide online platforms with enough capacity and bandwidth to accommodate massive online learners simultaneously. Teachers' professional training and support for mastering online teaching and learning competence is urgently needed. (Burgos, Tlili, and Tabacco, 2021)

In addition, the adaptation of the education system to pandemic circumstances is conditioned by the overall level of economic and social development of each country, the availability of information technology and information literacy of the population, the development of infrastructure and so on. Also, within each country there are significant differences between urban and rural communities, developed and underdeveloped parts of the country. Finally, a particular problem is the availability of education in pandemic circumstances for members of vulnerable social groups.

In addition to nation states, a significant contribution to the preparation of educational systems for functioning in the context of the COVID-19 pandemic was made by UNESCO. UNESCO is supporting countries in their efforts to mitigate the immediate impact of school closures, particularly for more vulnerable and disadvantaged communities, and to facilitate the continuity of education for all through remote learning. UNESCO launched the *Global Education Coalition* for collaboration and exchange to protect the right to education during this unprecedented disruption and beyond. It brings together more than 140 members from the UN family, civil society, academia and the private sector to ensure that #LearningNeverStops. Coalition members rally around three flagships, namely connectivity, teachers and gender, as well as support specific causes including the educational recovery following the deadly explosion in Beirut.[45]

In this paper, we will point out some of the problems and challenges related to the teaching process in the COVID-19 pandemic and we will analyse in more detail the way in which the education system of the Republic of Serbia has adapted to the pandemic circumstances.

the disease re-emerge. This builds on our generic responses to outbreaks of infectious diseases and the specific lessons learned during the SARS outbreak

[45] See more on https://en.unesco.org/covid19/educationresponse/globalcoalition

1. COVID-19 Pandemic – challenge for education systems

Even before the COVID-19 pandemic, the world was already facing formidable challenges in fulfilling the promise of education as a basic human right. Despite the near universal enrolment at early grades in most countries, an extraordinary number of children – more than 250 million – were out of school,[46] and nearly 800 million adults were illiterate.[47] Moreover, even for those in school, learning was far from being guaranteed. Some 387 million or 56 per cent of primary school age children worldwide were estimated to lack basic reading skills.[48] From a financing point of view, the challenge was already daunting before COVID-19. The early 2020 estimate of the financing gap to reach Sustainable Development Goal 4 – quality education – in low and lower-middle-income countries was a staggering $148 billion annually.[49](United Nations, 2020)

The outbreak of corona virus in the beginning of 2020 has affected countries on all continents and distorted and reduced human activities to an unprecedented level in recent history. In the situation where neither antiviral drugs nor vaccines were available to confront COVID-19, home isolation and social distancing were implemented almost worldwide to contain and mitigate the pandemic at different time points since January–May 2020. Six-week lockdowns of almost all businesses and services, including closing schools, universities, factories, shops, transports, etc., were imposed in most affected countries. (Soriano, Cardona and Corpas, 2021)

COVID-19 pandemic practically affected education systems in almost all countries in the world. The COVID-19 pandemic has created the largest disruption of education systems in history, affecting nearly 1.6 billion learners in more than 190 countries and all continents. Closures of schools and other learning spaces have impacted 94 per cent of the world's student population, up to 99 per cent in low and lower-middle income countries. (United Nations, 2020). UNESCO figures show that two thirds of an academic year was lost on average worldwide due to Covid-19 school closures. One year into the COVID-19 pandemic, over 800 million students, more than half the world's student population, still face significant disruptions to their education, ranging from full school closures in 31 countries to reduced or part-time academic schedules in another 48 countries, according to new data released on UNESCO's interactive monitoring map.

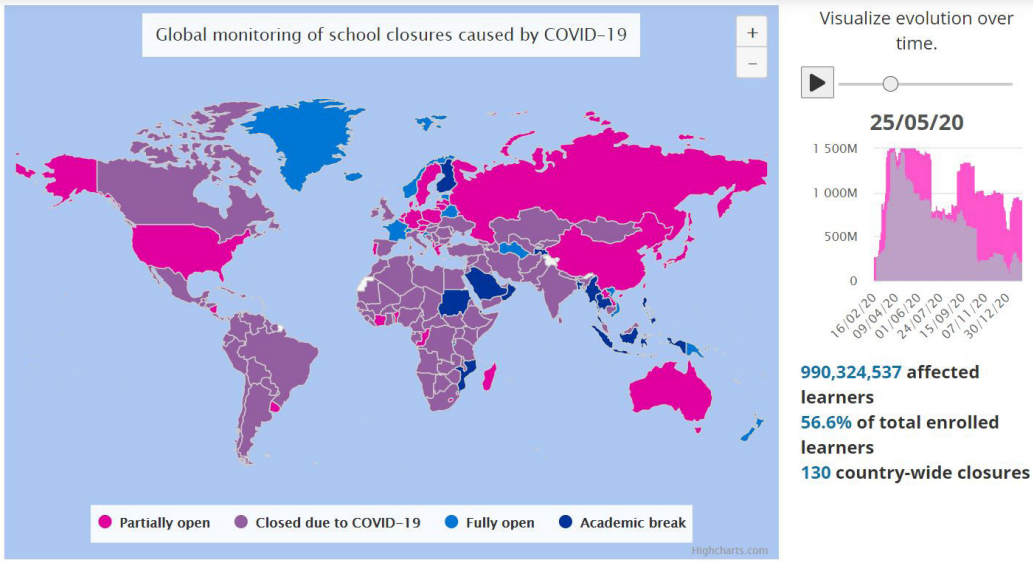
[46] 258 million in 2018, UNESCO Institute for Statistics (UIS), "Out-of-School Children and Youth", available at http://uis.unesco.org/en/topic/out-school-children-and-youth

[47] 773 million according to most recent UIS data: http://uis.unesco.org/en/topic/literacy

[48] UIS 2017 Fact Sheet, available at http://uis.unesco.org/sites/default/files/documents/fs46-more-than-half-children-not-learning-en-2017.pdf

[49] UNESCO (forthcoming): "The impact of Covid-19 on the cost of achieving SDG 4", GEM Report Policy Paper 42.

Figure 1. Duration of complete and partial school closures



Source: UNESCO https://en.unesco.org/news/unesco-figures-show-two-thirds-academic-year-lost-average-worldwide-due-covid-19-school

The map shows that globally, schools were fully closed for an average of 3.5 months (14 weeks) since the onset of the pandemic. This figure rises to 5.5 months (22 weeks) – equivalent to two-thirds of an academic year – when localized school closures are taken into account.

The duration of closures varies greatly by region, from as many as 5 months (20 weeks) of complete nation-wide closures on average in Latin America and the Caribbean countries, to 2.5 months (10 weeks) in Europe, and just one month in Oceania.

Similar regional variations are observed when accounting for localized closures: The duration of complete and localized closures exceeded seven months (29 weeks) on average in Latin America and the Caribbean compared to the global average of 5.5 months (22 weeks).

In the most fragile education systems, this interruption of the school year will have a disproportionately negative impact on the most vulnerable pupils, those for whom the conditions for ensuring continuity of learning at home are limited. Their presence at home can also complicate the economic situation of parents, who must find solutions to provide care or compensate for the loss of school meals. (United Nations, 2020)

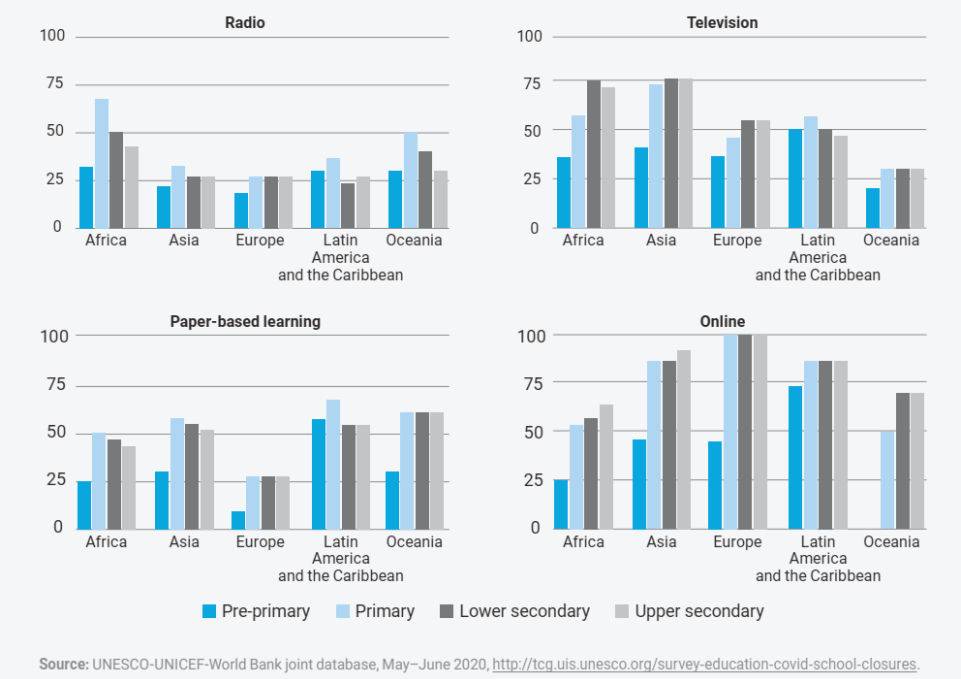
Governments have endeavoured to minimize country-wide closures – down from 190 countries at the peak in April 2020 to 30 countries now in the February 2021 –in favour of partial and/or local closures. Schools are now fully open in 101 countries. (https://en.unesco.org/news/unesco-figures-show-two-thirds-academic-year-lost-average-worldwide-due-covid-19-school)

Having in mind this numerous and serious consequences of interruption in education process governments around the world intensively sought the most adequate solutions to bridge this gap and to continue the educational process in the new conditions.

Ensuring learning continuity during the time of school closures became a priority for governments the world over, many of which turned to ICT, requiring teachers to move to online

delivery of lessons.[50] Countries report that some modalities have been used more than others, depending on education level, with variability across regions. In areas with limited connectivity, governments have used more traditional distance learning modalities, often a mix of educational television and radio programming, and the distribution of print materials. Relatively few countries are monitoring the effective reach and use of distance learning modalities. However, estimates indicate variable coverage: distance learning in high income countries covers about 80–85 per cent, while this drops to less than 50 per cent in low income countries. This shortfall can largely be attributed to the digital divide, with the disadvantaged having limited access to basic household services such as electricity, a lack of technology infrastructure, and low levels of digital literacy among students, parents, and teachers. School closures have necessitated changes in –and in some cases caused serious disruptions to – how students are evaluated. In most countries, exams have been postponed; in some countries, exams have been cancelled; and, in others, they have been replaced by continuous assessments or alternative modalities, such as online testing for final exams. Innovative continuous assessment methods have received a lot of attention. Student progress can be monitored with mobile phone surveys, tracking usage and performance statistics from learning platforms and apps, and implementing rapid learning assessments to identify learning gaps. Every solution has its own challenge, notably in terms of equity. (United Nations, 2020)

Figure 2: Country choice of distance learning during school closures was influenced by education level and region (percentage)



[50] Hodges et al. (2020)defined emergency teaching as "a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. It involves the use of fully online teaching solutions for instruction or education that would otherwise be delivered face-to-face or as blended or hybrid courses."

In many countries governments have decided to take the risk and shift directly to online teaching/learning.[51] However, this shift is full of challenges (just to mention existing infrastructure, pedagogical resources that suit online learning, capacity building of teachers and students' readiness for this movement) and opportunities on the micro and macro levels.

However, digital injustice came to the fore in this situation. As might be expected, the lack of preparedness to confront the educational disruption produced by COVID-19 has been more evident in developing countries, but also in educational institutions of Western countries with limited funding. (Soriano, Cardona and Corpas, 2021)

This instant shift has caused several challenges and obstacles for many teachers and students. Lacking ICT skills for teachers and inaccessibility to appropriate learning contents are very serious problems, especially for students with disabilities. On the other hand, since severe crisis is unlikely to disappear for a perceivable future, for education to be sustainable, how to ensure education can be continued without disruption under severe conditions, different forms of teaching and learning should be treated as a "new normal." Therefore, all stakeholders (e.g., teachers, students, institutions and policy makers) should be prepared for it. Similarly, several international organizations are now paying particular attention to the issue of "Education Response in Crises and Emergencies". As crisis may not be stopped from happening, the best strategy is to be prepared for it. (Burgos, Tlili, and Tabacco, 2021)

For certain sectors, distance learning came with distinct challenges. In the early-childhood sub-sector, some countries were able to put in place virtual kindergarten for children 3-6 years of age. Technical and vocational apprenticeship schemes and work-based learning centres were able to adapt in some countries. In many higher education institutions, the move to distance learning has been an opportunity to expand flexible learning modalities, setting the stage for a sustained shift towards more online learning in this sub-sector in the future. (United Nations, 2020).

Unlike disasters, crises are also opportunities. So, in COVID-19 pandemic new ideas and possibilities emerged for education process like self-learning and project-based learning; and, further, to elaborate on creative ways to communicate and share work, online assessment, virtual classrooms, e-Games, interactive planning and many other techniques and skills required to make the best out of this situation. (Burgos, Tlili, and Tabacco, 2021)

Soriano et al. have highlighted three major observations:

- The value of **a-synchronicity** in virtual education, as it provides the advantage of allowing a better flexibility of the personal time, and the ability to allocate hours for either teaching and/or learning at one's own convenience.
- Internet and **virtual resources** offer an untapped number of possibilities for accessing contents and information, representing a real treasure of knowledge available on demand.

[51] Actually, online learning and teaching is not new, at least in the Western world. In parallel to the birth of the World Wide Web, a few schools started leaning on online services to complement distant learning and to, step-to-step, offer an alternative way to remote learning, for all those people that could not move to different cities or countries (Burgos, 1997). However, here we have a case of "forced virtual education"(Soriano, Cardona and Corpas, 2021)

- The pressing need to having access to **good connectivity** and laptops or similar tools has become a critical issue. As result, inequity may easily surge for individuals or communities where connectivity is unstable and poor. (Soriano, Cardona and Corpas, 2021)

Saida Affouneh and Daniel Burgos suggest a 6-Key Action Plan for Education in Times of Crises. They start from the fact that educational leaders have to deal with all challenges and start planning for emergency education in uncertain conditions with no clear vision (Affouneh and Burgos, 2021).

2. Education process during COVID-19 in the Republic of Serbia

In the last ten years, Serbia has worked hard to improve access to education, where progress can be seen, starting with preschool education. International estimates, including the latest PISA scores, show that learning outcomes have been generally stable in recent years, with small improvements among students with the most success. However, progress has not been uniformed among all groups of students, so a large proportion of students in Serbia continue to complete their education without mastering the basic competencies needed for further education and life. (Ranković, 2020)

Public spending on education in Serbia has been low over the past ten years. The share of total public expenditure allocated to education at the national level also remained low and which did not change over the past decade (10% in 2007 and 9% in 2015). Teachers continue to use content-based and teacher-oriented approaches, which are not in line with expectations from the new curricula and standards of achievement. Material and social position of teachers is poor, and there is no motivation for self-improvement and career building. Serbia has made progress in enrolment, and international tests show that student achievement has been relatively stable in recent years, with some improvements among students with the highest achievement. This indicates an increase in inequality in education. Serbia needs to improve leadership in educational institutions, modernize the teaching profession and provide schools with the support they need to prepare their students for success in a society based on creativity and knowledge. This is essential for the country's economic development, social prosperity and European integration. Serbia is preparing its next medium-term strategy, which will determine the vision of education in the country until 2030. The competent Ministry should break down its ambitions in the field of education into a smaller set of priority goals that will help direct progress in classrooms, institutions and the education system as a whole. (Maghnouj et al., 2020)

During 2019, in partnership with the Organization for Economic Development and Cooperation (OECD) and UNICEF, and upon request and in close cooperation with the Ministry of Education, Science and Technological Development (MESTD) in Serbia, the OECD finished the Review in the field of evaluation and assessment in education. This review was conducted with the aim of serving the MESTD in developing a new national education strategy and should help Serbia implement promising public policies and practices as successfully as possible to support students in learning. The recommendations relate to improving student assessment, the final exam system, the school evaluation mechanism, strengthening school leadership, modernizing the teaching profession and providing the support schools need to prepare their students for success in an economy based on creativity and knowledge. The proposed courses

of action put teaching and learning at the forefront, so that student assessment, teacher evaluation, institution evaluation and system evaluation together contribute to the ultimate goal: to support students in learning in different ways. (Ranković, 2020)

Due to the epidemiological situation caused by COVID-19, a state of emergency was imposed in Serbia on March 15, 2020, and the Government of the Republic of Serbia passed a Decision to suspend teaching in higher education institutions, secondary and primary schools and regular work of preschool education institutions. Educational and direct teaching work in all primary and secondary schools, as well as in higher education institutions, was temporarily suspended. On March 17, 2020, MESTD organized distance learning, in order to ensure proper and uniform conduct of educational institutions, in accordance with the decisions of the Government. The Ministry has adopted an Operational Plan for the continuation of the work of schools in difficult teaching conditions (*Operativni plan za nastavak rada škola u otežanim uslovima izvođenja nastave)* (Ministarstvo prosvete, nauke i tehnološkog razvoja, 2020b). This plan included a large number of different programs and alternative digital ways of teaching and learning at all educational levels, of which the most important place belonged to the organization of distance learning. The plan foresaw that the priority in distance learning had the program contents of general education subjects and subjects with a larger number of classes, considering the diversity of teaching and learning programs in all grades of primary and secondary school. Schools were obliged to find alternative ways to provide learning support in situations when they were not able to establish communication with students using modern information technologies, with the obligation to take into account all recommendations for preventing the spread of coronavirus.

In an effort to define the quality standards of the work of educational institutions in the case when direct work with students is suspended, MESTD has created a Framework for assessing the capacity of primary and secondary schools to organize distance education in which a number of monitoring and evaluating indicators were defined, as well as recommendations for educational policies. This document treats the schooling comprehensively and describes the preferred practices of the key actors in a given situation. It is the basis for self-assessment of institutions' capacity and their development planning. The document integrates the Digital Competences Framework - Teacher for the Digital Age 2019 / *Okvir digitalnih kompetencija – Nastavnik za digitalno doba 2019*, which lists and defines the skills, goals and expected outcomes that make up the corpus of digital competencies of the teaching profession. Through a comprehensive approach, the Framework seeks to contribute to directing the efforts of schools to build capacities that will ensure the realization of the envisaged educational outcomes in an efficient and family-friendly manner. (Ministarstvo prosvete, nauke i tehnološkog razvoja, 2020a)

From the very beginning, the idea was not to reduce distance learning to watching TV, but to broadcast key teaching content on TV to reach the largest number of students who might not be able to engage in online teaching. According to the available data, this was a very good approach considering the level of internet coverage and the availability of IT devices. Teachers were encouraged to use all the materials available and to incorporate them into their digital classrooms where they interact with their students. (Ranković, 2020)

MESTD, in cooperation with the Radio Television of Serbia (RTS), organized the recording and broadcasting of educational content for distance learning via RTS 2, RTS 3 and RTS Planet. Already on March 17, 2020, only two days after the declaration of the state of

emergency in Serbia, the broadcasting of educational programs for primary and secondary school students on the programs of the Radio Television of Serbia began. Every day, starting at eight o'clock, specially prepared and adapted educational contents for primary and secondary school students were broadcast, with teaching units of selected general education subjects, and in accordance with the annual work plans. A number of teachers provided to the Ministry and the state the multimedia teaching materials that they already had prepared and used in regular classes, for organizing distance learning. At the same time, the preparation of teachers for recording educational materials at home was carried out.

The classes were broadcast on the second and third programs of the national television (RTS 2 and RTS 3), and according to the schedule of classes that was published the day before on the website of the Ministry (www.rasporednastave.gov.rs). School principals and homeroom teachers were obliged to inform students via SMS or social media (Viber, Facebook and others) about the schedule of classes on RTS programs, bearing in mind that the Internet is not available to all students. Also, schools were obliged to place banners on their websites with links and notifications related to the broadcasting of classes on RTS programs. The classes that were broadcasted on RTS programs were also available on the RTS website, as well as on the digital RTS Planet platform, where they could be watched several times later after the broadcast. Educational contents were also available by downloading the free application "RTS My School" for mobile phones and tablets (https://mojaskola.rtsplaneta.rs)

In a situation when, due to the COVID 19 virus pandemic, the educational process took place at a distance, the "Self-Assessment of Knowledge 2020" test was organized. It was the first online test on the Moodle platform "My Classroom" in the Republic of Serbia for the whole generation, which was realized in the period from April 22 to 24, 2020. For the first time, all students in one class had the opportunity to test their knowledge in completely new conditions. Self-assessment tests gave students the opportunity to test their knowledge two months before taking the final exam at the end of primary education by solving three tests (mother tongue, mathematics and combined test) from a total of seven subjects (mother tongue, mathematics, physics, chemistry, biology, history and geography). The tests were also translated into eight national minority languages.

When it comes to the university education, on March 16, 2020, MESTD, through the Conference of Serbian Universities and the Conference of Academies and Higher Schools of Serbia, sent recommendations to higher education institutions regarding the declaration of a state of emergency and the suspension of face-to-face classes. Higher education institutions that use their own online platforms for the implementation of teaching and distance learning, in accordance with these recommendations, have continued to use it. Those higher education institutions that did not have their own online platform used free Google tools for distance learning, which they could download on their own. As ways of distance education in emergency conditions, higher education institutions, in accordance with the possibilities, posted teaching materials on their websites or sent them directly to students via e-mail (Stojanović, 2020).

2.1 Education of children with special needs and members of national minorities

In order to achieve equal rights to education for all children, especially in a state of emergency, MESTD obliged teachers to prepare special learning materials and, in cooperation

with parents, make them available to students who need a structured individualized approach to work (Individualized Education Plan / Individualizovani obrazovni plan - IOP-1, 2 and 3).[52]

When it comes to the functioning of inclusive education during the pandemic, some data show that schools have performed relatively well during the last school year. A report prepared by the Institute of Psychology regarding monitoring the participation and learning process of students from vulnerable groups during the implementation of educational work by distance learning during the COVID-19 pandemic based on the results of distance learning implemented by MESTD and UNICEF in April 2020, showed that the largest number of students in Serbia was involved in the implementation of distance learning.

Slightly more than half of students from schools for students with disabilities are involved in teaching and learning through platforms, while less than two percent of students in primary and secondary schools received alternative forms of support (e.g. printed material where families were not able to engage in other ways). In schools for students with disabilities, 7% of students were not included in distance education. Distance learning in primary schools included 83% of students from Roma families who need additional support in education, and 56% of students watched TV or online lectures, 27 percent were involved in alternative forms of support, while 17 percent of students were not included in teaching in any way. In high schools, 91 percent of students from this vulnerable social group have been involved in distance learning. Of the total number of these students, almost 74 percent attended classes on TV or online and almost 17 percent participated in distance education through alternative forms of support, while 9 percent were not included.

For children from vulnerable groups, the situation was further complicated by the digital competence requirements, which were necessary to help children engage in distance learning. Families with several school children had additional challenges and needed good organization for all children to watch classes on TV, and in some families, children were not included in online classes because digital devices were not available. (Ranković, 2020)

The data from the Center for Investigative Reporting in Serbia / Centar za istraživačko novinarstvo Srbije (CINS) also indicate the existence of serious problems. During the state of emergency some schools did not organize classes for children with learning difficulties, claim the parents who were contacted by CINS, although they were obliged to do so. There were many problems in realizing so-called IOP classes - some teachers did not send assignments, children did not receive adequate materials, technical conditions were lacking to attend

[52] About 22,500 students are studying according to the IOP in Serbia, which is slightly less than 3% of all students in primary and secondary schools in the country. IOP can be implemented in regular schools, primary and secondary, but also in special schools, and the program is always adapted to the child. These are students who need additional support because they have learning difficulties, developmental disabilities, disabilities, live in difficult conditions, and few of them are advanced compared to the average student, so the program has been expanded for them. There are three levels of these programs:

- IOP1 is a regular curriculum that is adapted to the student so that he / she can follow it - for example, if a student has a vision problem, he / she should receive appropriate textbooks.
- IOP2 is a modified curriculum. In addition to other learning tools, the material itself is adapted to the student for one, more or all subjects.
- IOP3 is an enriched program for students with exceptional abilities

classes, and parents resented that the work of children with specialized professionals was not continued, at least online.

Examining how schools implemented distance learning with students working on one of the IOP programs, an anonymous questionnaire was published on the CINS website in April 2020, inviting parents and caregivers to share experiences and point out problems. In about two weeks, 100 people completed the questionnaire, of which 98 answers were valid. Parents of children from 71 primary and secondary schools in 34 cities came forward, most of them from Belgrade, Niš and Novi Sad. The questionnaire was completed by 45 parents whose children have been educated according to the IOP-1 program, 51 parents of children who have been educated according to the IOP-2 program and two whose children have been educated according to the IOP-3 program. Of the 98 parents and guardians who responded to the CINS questionnaire, one in seven stated that IOP classes were not conducted at all during the state of emergency. In all other schools, IOP classes were realized even during the state of emergency. However, 15 parents said that this did not go without problems either - the classes that were broadcast on TV were not adapted to children with special needs, and some did not get all the necessary materials. In addition, parents have borne the greatest burden to teach their children. Instead, some received materials for working with children or advice from associations, personal companions or special educators. Most schools that left children without IOPs, according to the respondents, did not give a clear explanation for that. 11 out of 98 parents said that the classes are being realized in part - only some teachers sent assignments to their children. Out of 73 parents whose children have continued their education according to a plan specially made for them, 57 of them believe that there have been problems in the realization of the program. Many did not receive adequate materials, could not match the time of work and the time needed for the child to master the material, and some children have not even had the technical conditions to attend classes. Children also lack work with professionals, as well as personal contact with their peers and teachers. One respondent stated that "practically everything is left to parents who should also be teachers, speech therapists and special educators." Although the MESTD stated that "a very important element of support in the new situation is psychological support for parents of children working on IOP, because these families are even more sensitive in times of crisis," most parents (71) who completed the CINS questionnaire states that this support is not provided (Ćurčić and Đorđević, 2020)

In addition, problems were recorded in the implementation of teaching in isolated classes in hard-to-reach and poor villages. Recalling the week of distance learning, Emina Redžović Čokić, a teacher from Prijepolje who works in a separate department of the elementary school "Svetozar Marković" in the village of Ivezići, said "I hope it will not happen again! I hope only that we remain healthy, and we will get through this." Her students have neither cell phones nor computers. Brodarevo is a mountainous area in south-western Serbia, and network disruptions are not uncommon - as soon as the stronger wind blows, the households lose electricity. In such situations, she talked to the students on the phone. "The director used to take his computer from home and take it to the children, but the worst thing is that these are places so far away on the border, so the Montenegrin and Serbian networks mix and again they don't do anything. That was a real problem," adds Čokić. "With the help of the school and colleagues, we managed to organize classes so that children do not lose classes, even though this is a poor environment," she added. Difficulties with the technology were further

complicated by the period of the year - spring and the beginning of summer, when parents do seasonal work and there is no one to help the children with tasks. The mobile signal bad, let alone the internet. In the school "Svetislav Mirković-Nenad" in Tovrljani, a village at an altitude of 600 meters on the mountain Sokolovica, there are five students - first, second and fourth grade. None of them have a smartphone or computer. They followed the classes via RTS and sent homework via parents' phones, but here also the phone signal is bad, and there is no access to the Internet. "Everything was difficult. It happened that there was no electricity and they did not follow classes that day" Online platforms are not applicable here, because there is not always internet. As a teacher of the most remote village school in the municipality of Prokuplje, Marko Čikarić disinfects the classroom every morning before classes, since there is no auxiliary worker. There are two students sharing a classroom of 50 square meters and wearing masks. In order to provide masks for the students, he found a sponsor - and each child received two cotton masks from the locals who sewed them. Whenever necessary, he took the students in his car. Their school in Tovrljan received a television set last year, the teacher proudly points out. (Andjelkovic, 2020)

For the sake of complete insight, positive experiences with teaching for advanced students should also be mentioned. Namely, the CINS questionnaire was filled out by two parents whose children are educated according to the IOP-3 program intended for advanced students. In their schools, classes were conducted during the state of emergency and there were no learning difficulties. (Ćurčić and Đorđević, 2020)

In the Republic of Serbia, more than 44,000 students attend the entire primary or secondary education in one of the eight languages of *national minorities.* In the extraordinary conditions of the COVID-19 corona virus pandemic, and in accordance with the "Millennium Development Goal 4", which implies achieving inclusive and quality education for all children, distance learning was organized in the languages of national minorities. Schedule of classes in the languages of national minorities, instructions, important links, as well as all other important information related to distance learning, could be found at the link:

"Distance education in the languages of national minorities" / "Obrazovanje na daljinu na jezicima nacionalnih manjina" https://www.rasporednastave.gov.rs/obrazovanje-manjine.php.

3. Analytical review of the functioning of the education system of Serbia in the conditions of the COVID19 pandemic

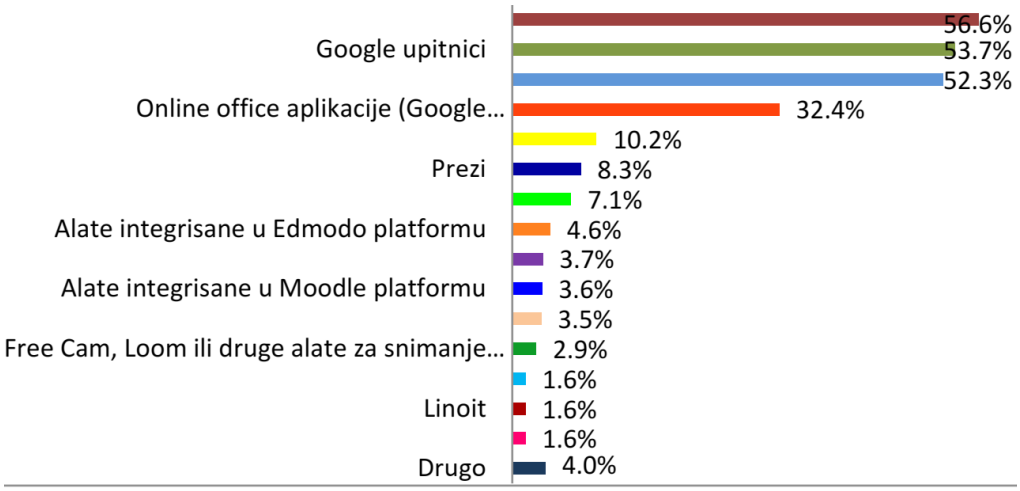
In May 2020, the Institute for Improvement of Education (Zavod za unapređivanje obrazovanja i vaspitanja) started a survey on the implementation of the educational process in Serbia through distance learning in specific epidemiological conditions. During the three-month activities of the Institute, a total of 14,715 respondents were interviewed (teachers, professional associates and principals of primary and secondary schools) with the goal to define new directions of development and organization of training of employees in educational institutions, in accordance with the real and practical needs of this system. (Zavod za unapređivanje obrazovanja i vaspitanja, 2020)

Based on the results of surveys, but also on practical experiences, common for the education system in Serbia and Europe, in the conditions of the COVID-19 pandemic, is the transition to some form of distance learning in almost all schools. From the available data

from surveys both in European countries and in Serbia, the dominant answers to the questions related to distance learning are largely identical, whether it is the current application of this type of education, its positive characteristics, main problems or application after a pandemic. (School Education Gateway, 2020)

In the European survey, over 60% of respondents felt that school practice would no longer be the same after the pandemic and that distance learning would be used more in the education system than before. In Serbia, this percentage in the survey was slightly lower (46.1%), but also dominant among respondents. Respondents in European countries, as well as in Serbia, stated in the survey that they were mostly positively surprised by the large selection of digital tools, flexibility and opportunities for free experimentation with teaching practice. The main problems in distance learning were identical: the availability of resources and technology to students and teachers, increased workload and stress when working from home, as well as insufficient digital competencies of teachers and students.

According to the results of the survey in Serbia, during the implementation of the educational process by distance learning, the respondents most often used Viber (37.5%), communication within the learning management system / Google Classroom, Edmodo ... / (33.4%), e-mail (13.8%), and the Google classroom platform (52.3%), while as many as 32.4% of respondents stated that they did not use learning platforms and systems and that they have no experience in working with them.



'zvor:https://zuov.gov.rs/rezultati-ankete-sta-15-000-prosvetnih-radnika-misli-o-ostvarivanju-obrazovno-vaspitnog-procesa-putem-ucenja-na-daljinu

The Educational Creative Centre (Obrazovno kreativni centar) conducted research on online teaching in the region of Southeast Europe (Serbia, Montenegro, Bosnia and Herzegovina, Croatia and North Macedonia) before and during the COVID-19 pandemic. In the total sample, the largest number of respondents were teachers from Serbia, 2371 (1674 primary school and 724 secondary school teachers). At the level of the entire sample and at the level of the sample from Serbia, 33% of teachers had experience, 12% of teachers had no experience with distance teaching, while 55% of teachers knew something, but not much. At the level of respondents from Serbia, 93% of teachers had the necessary equipment

for the implementation of online teaching - computer and internet. As many as 82% of teachers did not implement this type of teaching with their students before the state of emergency. This result is not surprising, because online teaching is a complete novelty, both in Serbian educational system and in the educational systems in the region. Online teaching is a product of the XXI century, and as such has not been included in formal teacher education programs. The only way to increase this percentage is professional development in this area. In addition to knowledge of the profession, didactic and methodological knowledge and skills, it is necessary to have a high level of digital competencies. In order to change this, more quality professional development programs in this area are needed. Only 8% of teachers answered that there was an organized system for online learning in their schools. The reason for such a small percentage lies in the fact that the organization of a learning system requires additional resources, staff and management. Funds related to server and domain leasing, setting up a learning platform (LMS) and engaging a team to implement such an endeavour should be provided. Then it is necessary to train teachers to use that platform in order to be able to realize online teaching. Only 15% of teachers used some of the LMS before the state of emergency. Two "online classrooms" stood out in the answers of the respondents in Serbia. As many as 75% of teachers answered that they used Google classroom (55%) and Viber (20%). Some of the listed web systems (Google Drive), applications (Viber) and tools (Microsoft teams) are not online classroom platforms, but communication services that can be used in the process of online teaching. When asked if they were familiar with the way online classrooms work, 47% of teachers answered that they were familiar, but only 27% of teachers said that the school organized and opted for a specific online classroom or learning system. Only 32% of teachers attended online classroom training before and during the state of emergency, whilst only 27% of teachers created digital teaching content for their students. Slightly more than two-thirds of teachers (68%) produce their own digital teaching materials. A certain percentage of teachers also rely on the materials of colleagues (27%), while only 7% of teachers use publishers' electronic textbooks. About one third of teachers (28%) answered that there is a team for organizing online classes in their schools. Other respondents answered that it does not exist (32%) or that they are not aware that the team exists (40%). The majority of teachers, as many as 80%, rated schools with grades 3.4, 5 or 5 for the organization of online teaching. Most teachers gave a grade of 3 (partially satisfied) and this indicator shows us that schools must work on the organization and development of online teaching. One third of the teachers worked overtime. Most teachers spent between 6 and 8 hours a day at the computer (27%). The approximate percentage is those who spent between 4 and 6 hours a day at the computer (26%). Only 11% of teachers stated that online teaching does not suit them at all and that they would not be able to use it in further work.

However, representatives of education unions have a rather critical attitude towards the way the Ministry has managed the educational process in this pandemic. According to the assessment of the professor Jasna Janković, the representative of the Union of Education Workers of Serbia, MESTD was not ready to face and cope with COVID-19 pandemic. The Ministry reacted to the new situation exclusively situationally, guided much more by the demands of the political leadership than by the interests of the participants in the educational process. Therefore, the reaction to the crisis situation was poor and the reaction to the problems that arose was slow. On the other hand, school principals, who have very little autonomy in decision-making and who are politically appointed, waited for MESTD to tell

them what to do. Communication between school principals and employees was also poor. The good moves of MESTD were that the classes were classes were interrupted in time in the context of epidemic danger, that the classes for broadcasting on RTS were quickly recorded, a number of tablets for students were procured and work was done on platforms that can be used. When determining the measures and guidelines for work in the conditions of the pandemic, MESTD did not consult educators and representative unions. There was no will and readiness to admit that there was a lack of necessary equipment for distance learning, passing the matriculation exam was organized without any technical conditions, which was a kind of fiasco. Teacher education and preparation for the use of appropriate platforms and online teaching was insufficient. There was no single platform for online teaching or clear technical and methodological instructions for the implementation of online teaching, and the technical readiness of schools to function in a pandemic is poor. Due to all these effects, i.e., achieving educational goals in a pandemic deserves a bad grade. As Janković states, "in a huge system such as education, it all comes down to the enthusiasm of teachers, rarely principals, teachers are left to themselves, and (with rare exceptions), schools are run by political eligible and obedient persons, not by capable managers (personal interview Janković) More or less, the opinion of d-r. Vesna Vojvodić-Mitrović the representative of the Branch Trade Union of Teachers of Serbia "Independence" is similar (personal interview Vojvodić-Mitrović),

Conclusion

The Republic of Serbia faced the COVID-19 pandemic without an appropriate plan in all areas of social life, including education. The Ministry of Education reacted situationally and established a system that was a combination of distance learning with the use of information and communication technologies and television, classical teaching to the extent that conditions allowed, and self-learning. Of course, there were mistakes and omissions in this reaction, but it can be concluded that, on the whole, a good job was done. It is certain, however, that pandemics are challenges that we will face in the future and that in this sense for these types of crisis situations a country should have a developing plan for distance education in the case when direct work with students is suspended and when practically this type of education becomes formal educational process organized through different media in the case when the teacher and the student do not share the same physical space. In that sense, the lessons learned so far are being analysed in the Ministry of Education and the competent institutions, with the focus of the analysis on three basic levels: pedagogical, technological and organizational. In addition to the development of national and school-based learning management systems used by all teachers and students, it is important that schools have a sufficient number of communication devices and stable internet access, that school development includes digital technologies and that teachers have support in using digital technologies. In the coming period, it is important that schools plan activities carefully, so that the weekly activity plan is adjusted to the age characteristics of students and that the time load of students is taken into account. Also, it should be borne in mind that children from vulnerable groups need greater support from schools, teachers, psychologists and pedagogues when it comes to learning and should use all the mechanisms and additional support that otherwise exists in the Serbian education system, only now in digital environment. It is certain that everything that was developed during the pandemic should be used and

additional resources should be developed that would form the basis of digital resources for schools as places where digital educational resources with open access will be stored. Here, users could find and download didactic materials in accordance with the curriculum, which can be used in a given form in the classroom, or modified and adapted to different contexts and needs (including distance learning). Such materials would support blended learning for students, because they could be used both in the classroom and at home. (Ranković, 2020)

There is no doubt that much more needs to be done to build teachers' digital competencies to ensure student-teacher interaction through group work in an online environment and to make the transition to "online mode" easier and more frequent, even in regular circumstances. However, the situation during the pandemic emphasized the importance of a stimulating environment and parental support for children to organize their time and learning, to alleviate the stress imposed by the new reality and the lack of interaction with society that is necessary.

Distance education will not and cannot completely replace classical education. However, after COVID-19, classical education will not be the same and it is quite certain that distance learning will be much more represented and that maximum efforts should be made to develop all aspects of this system in the coming period, to change laws and improve legislation. (Ranković, 2020)

Despite some reform attempts, the dominant teaching model in the Republic of Serbia is still the classic ex cathedra model where the teacher is the source and transmitter of knowledge and the students, mostly passive, are recipients of data and facts that are expected to reproduce them as accurately as possible. This is especially true for pre-university education levels. A number of students in Serbia continue to complete schooling without mastering basic competencies, and efforts to raise education to a higher level are being called into question due to limited institutional capacity and low public expenditure on education. A shift to distance teaching did not affect the ruling paradigm. Change of teaching methodology should not be confused with change of education model. The crisis was more of a technological challenge for the transmission of the existing model to new technological platforms than a trigger for work on changing the model, which is in line with the theoretical findings of crisis management that the crisis is rarely an opportunity for reform. (Boin et al., 2009)

However, we can reasonably assume that education systems will not continue the same way, since both learners and teachers have experienced a new approach of freedom that could not be taken from them. The great importance of digital competencies for the 21st century has become obvious. At the same time, some questions and dilemmas are open. Will technology replace teachers and professors in the future? Will the humanistic aspect of the teaching process be completely lost - a unique and invaluable relationship between a student and a professor who is equally educated, but also upbringing and which is extremely important in growing and maturing young people and their transformation from an individual to personality.

In terms of the above, a comprehensive interdisciplinary analysis of experiences from this crisis situation should be made and appropriate lessons and messages drawn. Extremes should be avoided: on one hand, a complete exit of teachers from the face-to-face educational process, and on another, the ignoring of the positive sides and possibilities in the use of new IC technologies in teaching.

References:

1. Anđelković, N. (2020) "Škola, učitelji i korona virus: Kako u zabačenim selima Srbije izgleda učenje na daljinu"/"School, teachers and the corona virus: What distance learning looks like in remote villages of Serbia", BBC, avaiable on https://www.bbc.com/serbian/lat/srbija-54376412

2. Affouneh, S. and Burgos, D. (2021). "A 6-Key Action Plan for Educationin Times of Crises" inBurgos, D., Tlili, A. and Tabacco, A. (Eds.). *Radical Solutions for Education in a CrisisContext -COVID-19 as an Opportunity for GlobalLearning*, Singapore:Springer, pp. 11-21.

3. Boin, A., Hart, P., Stern, E. and Sundelius, B. (2009). *The Politics of Crisis Management: Public Leadership under Pressure*, Cambridge University Press

4. Burgos, D. (1997). *3D Studio max práctico. Guía de Aprendizaje (3D Studio Max Practice. LearningGuide)*. Madrid: McGraw-Hill.

5. Burgos, D., Tlili, A. and Tabacco, A. (Eds.) (2021). *Radical Solutions for Education in a CrisisContext -COVID-19 as an Opportunity for GlobalLearning*, Singapore:Springer

6. Cabinet Office, (N/A), *National Risk Register*, available on https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/61934/national_risk_register.pdf , retrived on 02.02.2021.

7. Ćurčić, T., i Đorđević, D. (2020)."Pojedina deca sa poteškoćama u učenju ostala bez nastave tokom korone"/"Some children with learning difficulties were left without classes during the corona", CINS, available on https://www.cins.rs/pojedina-deca-sa-poteskocama-u-ucenju-ostala-bez-nastave-tokom-korone/

8. Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). "The difference between emergency remote teaching and online learning." *EDUCAUSE Review*, available on https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning accessed on 01.02.2021

9. Maghnouj, S., Sainas, D., Kitchen H., Guthrie, C., Bethell, G. and Fordham, E. (2020), *OECD Reviews of Evaluation and Assessment in Education: Serbia*, OECD Reviews of Evaluation and Assessment in Education, OECD Publishing, Paris

10. Ministarstvo prosvete, nauke i tehnološkog razvoja. (2020a). *Okvir za procenu kapaciteta osnovnih i srednjih škola za organizovanjeobrazovanja na daljinu u slučaju kada je obustavljen neposredni rad sa učenicima*.http://www.mpn.gov.rs/okvir-za-procenu-kapaciteta-osnovnih-i-srednjih-skola-za-organizovanje-nastave-na-daljinu-u-slucaju-kada-je-obustavljen-neposredni-rad-za-ucenicima/

11. Ministarstvo prosvete, nauke i tehnološkog razvoja. (2020b). *Operativni plan za nastavak rada škola u otežanim uslovima uz program učenja na daljinu za učenike osnovnih i srednjih škola*, available on http://www.mpn.gov.rs/operativni-plan-za-

nastavak-rada-skola-u-otezanim-uslovima-uz-program-ucenja-na-daljinu-za-ucenike-osnovnih-i-srednjih-skola/

12. Nikolić, N. i Milojević, Z. (2020). *Istraživanje – Trenutno stanje u onlajn nastavi u Srbiji i regionu/Research - Current situation in online teaching in Serbia and the region*, Obrazovno kreativni centar available on https://okc.rs/kakvo-je-trenutno-stanje-u-onlajn-nastavi-u-srbiji-i-regionu/

13. Personal interview Vojvodić-Mitrović Vesna, February 2021.

14. Personal interview Janković Jasna, February 2021.

15. Ranković, T. (2020) " Obrazovanje u vreme pandemije"/"Education during the pandemic"; National Geographic, avaiable on https://www.nationalgeographic.rs/vesti/15543-za-national-geographic-tanja-rankovic-unicef.html

16. School Education Gateway. (2020). *Survey on online and distance learning –Results*, available on https://www.schooleducationgateway.eu/en/pub/viewpoints/surveys/survey-on-online-teaching.htm

17. Soriano, V., Cardona, P. and Corpas, M. (2021). "A Key Action Plan for Education in a Global Crisis", in Burgos, D., Tlili, A. and Tabacco, A. (Eds.). *Radical Solutions for Education in a CrisisContext -COVID-19 as an Opportunity for GlobalLearning*, Singapore:Springer,pp. 263-272.

18. Stojanović, D. (2020). "Analiza realizacije učenja na daljinu u Srbiji za vreme pandemije virusa COVID 19" in Mijatović, P. and Marijanović, D. (Eds.). *Black swan in the world economy 2020*. Institut ekonomskih nauka, Beograd, pp. 121-140

19. UNESCO. (2020, March 10). Adverse consequences of school closures [blog post]. Retrieved from: https://en.unesco.org/covid19/educationresponse/consequences

20. United Nations, (2020), *Policy Brief: Education during COVID-19 and beyond*, available on https://unsdg.un.org/resources/policy-brief-education-during-covid-19-and-beyond retrived 08.02.2021.