Assessment on the Quality of E-Learning and Blended Learning in Elementary and Secondary Education (and TVET) in Bosnia and Herzegovina During the COVID-19

Banja Luka & Sarajevo, November 2021

This document presents one of two studies conducted for the project "Reimagining education for margnalized girls and boys during and post COVID-19 jointly implemented by UNICEF, UNESCO, ILO and UN Volunteers in Bosnia and Herzegovina. The second complementary study "Assessment on the needs of teachers in e-learning and blended learning in primary and secondary (and SiTO) education in Bosnia and Herzegovina during COVID-19" is also the result of a multidisciplinary team of researchers from Bosnia and Herzegovina. The primary and secondary research was conducted in the period from September 9 to October 22, 2021.

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Acronyms

BD	Brčko District
BiH	Bosnia and Herzegovina
COVID-19	Coronavirus pandemic
EU	European Union
FBiH	Federation of Bosnia and Herzegovina
ILO	International Labour Organization
ICT	Information and Communications Technology
OER	Open Education Resourses
RS	Republic of Srpska
SiTO	Vocational and technical schools
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund

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1. Introduction and purpose

A study on the quality of e-learning and blended learning in primary and secondary education (and SiTO) including technical and vocational secondary education) in Bosnia and Herzegovina during COVID-19 was conducted as a part of the United Nations (UN) socio-economic plan for Bosnia and Herzegovina BiH); The United Nations Children's Fund (UNICEF), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Labor Organization (ILO) and UN Volunteers have developed the project Reimagining education for marginalized girls and boys during and post COVID-19 in Bosnia and Herzegovina. The project is implemented in three pilot BiH administrative units to combat the effects of the coronavirus pandemic, in order to strengthen the capacity of education authorities in charge for education from pre-school to higher education. The project covers educational sectors from pre-school to higher education with the purpose of providing quality and inclusive e-learning and teaching processes that include blended learning models. At the time of this study, there is an obvious lack of data on the application of e-learning at primary and secondary education, given that in addition to the UNESCO Study "Review of the quality of e-learning in higher education in Bosnia and Herzegovina during the COVID-19 pandemic" and the Agency for higher education in the Republic of Srpska "Thematic analysis of the process of e-learning during the extraordinary circumstances caused by the appearance of the COVID-19" and the lack of research focused on the quality of education in these extraordinary conditions. Also, the study found that there is an interest in understanding the impact of emergencies on education, which is evident through several analyzes. Therefore, the lack of data on the application of e-learning at the level of primary and secondary education is the main motivation for this research.

In order to combat the spread of coronavirus infection, since mid-March 2020, as part of preventive measures, 1,719 regular primary schools (parent and independent with regional schools) and 45 schools for children with disabilities in BiH were closed, which directly affected learning process 147,690 students of IV grade, 120,369 students of VI-IX grades enrolled in the academic year 2019/2020. year as well as 24,548 teachers. Also, this applies to high school education in which the school year 2019/2020. 112,796 students were enrolled in 315 secondary schools in BiH in 2006, and 12,716 teachers were involved in the teaching process (Appendix 1). Based on data collected through the "Rapid Assessment of the Situation and Needs - Education in Bosnia and Herzegovina - Phase II", conducted jointly by UNICEF and UNESCO from June to August 2020, all primary and secondary schools introduced e-learning on an ad hoc basis to ensure continuity of learning for their students. However, the quality of e-learning at this stage could not be fully assessed due to the lack of necessary data from institutions dealing with primary and secondary education.

The purpose of the study is to assess in detail the quality, shortcomings and challenges of primary and secondary schools for e-learning and to support and strengthen the capacity of education authorities and institutions to systematically design solutions to future crises, but also to be more adequately involved in global trends. In this regard, UNICEF has approached the development of this study, which offers an assessment of the quality of distance learning at the level of primary and secondary education in BiH.

In order to assess quality of e-learning and blended learning in elementary and secondary education in BiH the study identified the following components:

▪ EU and regional frameworks on the application of guidelines on e-learning and blended learning in primary and secondary schools,

▪ Legal, financial and administrative framework for the establishment and implementation of e-learning and the combined teaching process with a focus on the organization of tools and platforms for e-learning, as well as regulatory opportunities and obstacles,

▪ Types of tools and platforms used in primary, secondary and (including SiTO), their main characteristics and methods of use,

▪ Impact on the quality implementation of curricula, including different approaches to e-learning and blended learning in relation to modern didactic approaches and conducting practical classes,

▪ An overview of strategic gaps and options that can be addressed, accompanied by policy recommendations for the future collection and implementation of related information.

After the research units were defined, the basic factors (which represent logical and theoretical assumptions) from these units were taken into consideration, which indicate that quality teaching takes place in elementary and secondary schools in BiH. The model states that quality e-learning should be supported by digital technologies and new didactic approaches both during normal conditions and in the period after COVID-19. Finally, the final model is visualized as the theory of change in Figure 1, which takes into account key aspects of the UNESCO philosophy of distance education as well as the principles advocated by the European Union (EU). The purpose of the developed model is twofold:

1. Model can be used as a strategic working model for enhancing the quality of e-learning in elementary and secondary education in BiH;
2. Model was used as a referal framework while creating instrument for assessing quality of e-learning and its contributing factors.

Photo 1 *Applied model of change theory for e-learning quality study*
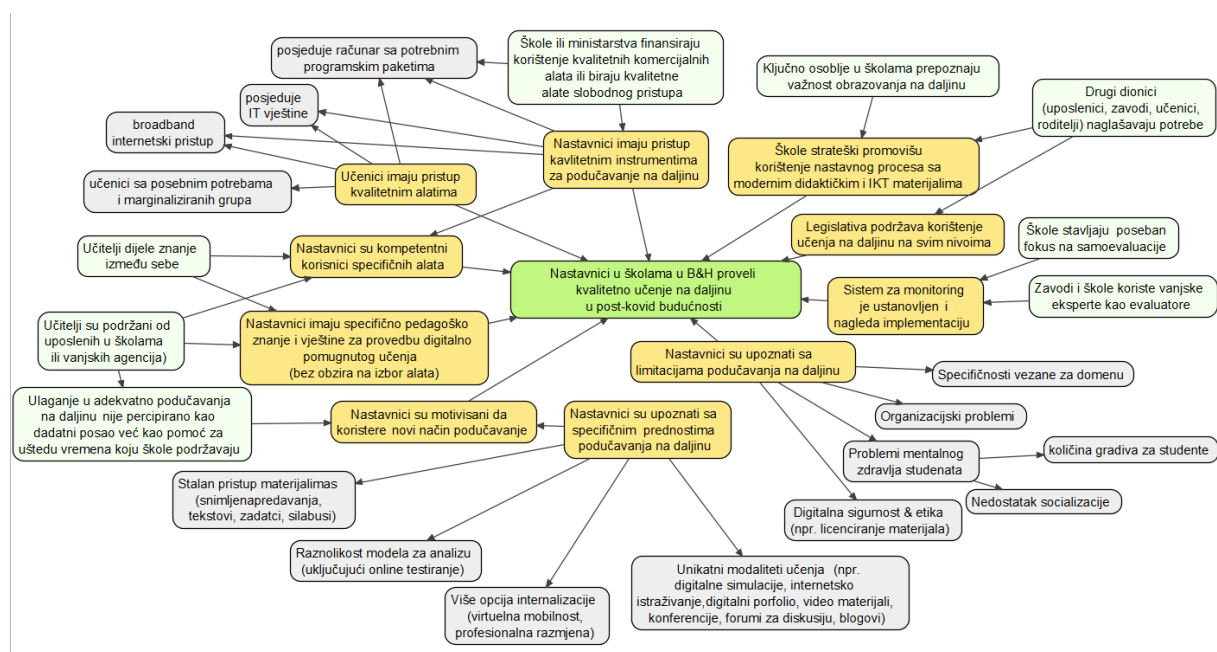
Conditions of the pandemic have caused extraordinary circumstances in education and clearly indicated the structural shortcomings and vulnerabilities of existing education systems as well as the need to develop digital and information literacy. These circumstances also represent an opportunity for greater digitalization of education, and offer an opportunity for this form of teaching to become an integral part of education even after the coronavirus pandemic. The current situation resulted in an evaluation of the role of school institutions in providing quality education, teaching methods, access to education, as well as the importance of lifelong learning for teachers, and provides an opportunity for teachers and decision makers to improve education in BiH.

Both in BiH and in the EU and the region were required to find solutions for the education system as a reactio to the new circumstances. However, unlike BiH, EU member states have more easily amortized the circumstances, given that the EU is in a constant effort to monitor and address the challenges posed by the expansion of electronic communications and digitalization of society. The EU is in the ongoing process of developing new policies and strategies to ensure equal access to all segments of society, including the education sector, in the skills and systems necessary for the digital transformation of society. Through various communications, recommendations, reports, declarations and resolutions, the EU enables and directs its members and countries in the accession process to move in the direction that ensures the digital competencies of individuals and society.

Responding to the challenges of the pandemic in primary and secondary schools takes place within an institutional framework of education that is set up to reflect the administrative arrangement of BiH. Taking into account all the above, the first part of the study describes in detail the methodology and limitations of the research. Latter, it offers findings that resulted from primary and secondary data collection. Based on the findings, the conclusions determined by the research team are derived. Finally, recommendations are offered for the improvement of e-learning and blended learning in primary and secondary schools in BiH.

2. Methodology

The methodology for assessing the quality of e-learning in primary and secondary schools in BiH is designed to ensure systematic and effective data collection and triangulation of information through various methods and sources, given the pandemic circumstances and deadlines for writing reports. Triangulation - obtaining information from different sources - was necessary given that the construct of quality itself is complex and directly depends on the perception of different participants or beneficiaries in the educational process. In particular, what is taken into account when assessing the quality of education is largely determined by subjective context and needs, ie quality is differently evaluated by independent experts (eg in accreditation bodies), competent education authorities, administrative staff, students, teachers and employers.

For this study to assess the quality of e-learning and blended learning in primary and secondary education in BiH during the coronavirus pandemic, a combination of qualitative and quantitative methods (mixed methods approach) was used to collect data, including:
- secondary research of relevant documentation and data (desk analysis / literature review),
- semi-structured interviews with key persons at relevant institutions associated with elementary and secondary education; semi-structured interviews with civil society organizations; semi-structured interviews with employers' representatives
- separate surveys for teachers, students (from IV to V grade, from VII to IX grade, and high school students – II to IV grade), professional staff in schools.

Secondary research used available resources which referred to e-learning in elementary and secondary education in BiH, including existing guidelines, studies, reports, analyses, assessments, and legal documents, statutes and strategies. In comparative purposes, we used recent reports resulting from international studies and recommendations which referred to relevant organizations in domain of elementary and secodary education as a reaction to the newly emerged situation. Primary research was conducted through semi-structured interviews with key relevant persons and through surveying (separate surveys) students, teachers, and professional staff in education institutions.

Purposive sample was used in interviews through which representation in the administrative composition of BiH was ensured, as well as previous experiences with e-learning. Interviews were mostly conducted via electronic communication platforms, with a smaller portion conducted live. A total of 22 persons (12 representatives of institutions and 10 experts and representatives of the NGO sector) were interviewed using interview protocols (separate protocols for representatives of educational institutions, civil society representatives, and employers' representatives) containing inquiries related to key issues from the study. The protocol for the interview was piloted (one representative of the primary school and one civil servant - employee of one of the BiH ministries). The operational (target) population for the interviews consisted of persons with previous experience with e-learning, taking into account the administrative structure of BiH. In order to ensure the participation of the interlocutors, the UNICEF Office in Sarajevo prepared a cover letter which was sent to all potential interlocutors as part of an email with clear instructions and the purpose of the interview.

Questionnaires were created with the aim of obtaining key information on the degree of satisfaction of various aspects of quality e-learning, aspects identified in the previously mentioned theory of change. Given the pandemic conditions and the efficiency of data collection, it was decided to conduct the survey online. As mentioned, three different target groups were identified: school management (principals and professional staff) who had a direct insight into the implementation of teaching, teaching staff who taught in schools, and students in selected classes and schools.

Separate measuring instruments (survey questionnaires) were created for each target group. For some aspects, it was possible to request identical information from several perspectives and thus check their compliance (eg whether technical conditions were provided for quality distance learning in terms of software tools, internet flow speed, technical support for students and lecturers), while for some aspects information was requested from only one target group, which was assessed as relevant (eg students assessed the motivation of teachers to adapt to online teaching, professional staff pointed out possible legislative obstacles faced by schools).

A special measuring instrument - a questionnaire - was constructed for each target (sub) group. When it comes to students, the research was conducted with three different survey questionnaires for three groups of students: lower and upper elementary school students and high school students. Between these three groups of students there are differences in each segment of development (cognitive, socio-emotional, physical) which is one of the reasons for creating special questionnaires for each group. In addition, in the previous year and a half, there were some differences between primary and secondary school students when it comes to teaching, which is also one of the factors that required a different approach to data collection. The method for collecting data during the research is defined by the survey technique and the questionnaire instrument, which is distributed to the target population in the form of a questionnaire via an online link that will be accessible to students, teachers, principals and professional services (target population). All measuring instruments were piloted (pilot research in one (1) school based on the first level of stratification). After the pilot, all instruments were reviewed and finalized. Data collection was conducted completely anonymously in order to reduce the possibility of assumptions of identity disclosure that could affect the sincerity of the responses of target groups. Only those demographic indicators are defined that are related to basic information, such as age and scientific and professional field of the teaching staff. The sampling process is defined as a stratified multi-phase random sample that defines the schools to which the survey questionnaire will be distributed.

Multi-phase stratification in this study involved three levels of stratification, first according to the administrative and political system of BiH on three strata of the Federation of Bosnia and Herzegovina (FBiH), Republika Srpska (RS) and Brčko District (BD), then within each stratum (BD). - one (1) region) stratification is performed on the basis of regions: RS (three regions - West (Banja Luka), South (Trebinje) and Northeast (Bijeljina), FBiH (10 cantons: Una-Sana Canton, Posavina Canton, Tuzla Canton, Zenica-Doboj Canton, Bosnia-Podrinje Canton, Central Bosnia Canton, Herzegovina-Neretva Canton, West Herzegovina Canton, Sarajevo Canton, Canton 10). The third stratification was performed based on the urban-rural categorization of schools that can be selected according to the available data in BiH, we have a total of 8,134 classes in secondary education with 110,404 students, which is 13.5 students per class. On primary education we have a total of 14,848 classes attended by 268,059 students, which is 18 students

per class. Based on all the above, 79 primary and secondary schools were selected by random sampling, of which 52 primary schools and 27 secondary schools.

In the first step, the UNICEF Office in Sarajevo sent an application for participation in the research together with a cover letter to the relevant e-mail addresses of the competent ministries of education. After that, all schools involved in the research were sent an email with clear instructions, a link to each of the surveys and a short text that could be forwarded to all respondents. Based on the feedback, the schools were contacted again if necessary. Some competent ministries of education did not submit the consent for conducting the research in a timely manner, which significantly prolonged the duration of field work. The survey questionnaires were posted (opened) on the online platform SurveyMonkey on September 30, 2021 and closed on October 28, 2021. After the databases were closed, answers were received (complete and incomplete) from 3,936 students, 730 teachers, and 131 school representatives (professional staff). The level of completion of questionnaires (complete answers - completion rate) as planned ranged between 54-55%, observed in particular students in secondary schools 55%, students in primary schools 7-9 grade 57%, students in primary schools 4- 5th grade 52%, teachers 59%, and principals and professional staff 50%. After forming the database and cleaning it (all answers that were not completed at least 75% were eliminated, all answers that did not pass the test questions were eliminated) we got the final sample which included: students 2,524 (OS = 1,575; SS = 949); teaching staff 477, and principals and professional staff 72 respondents. Based on the obtained sample, we can conclude that the sample in relation to the target groups with 95% probability or 5% risk (confidence interval ± 2.46) is representative of students, while the collected sample of teachers with 95% probability (5% risk; interval reliability ± 4.46) also representative. When it comes to principals and professional staff, ie school administrations, there is no official data on the target population (total number of employees in primary and secondary schools), so this part of the target population can be treated exclusively for information. Also, it should be noted the great heterogeneity of the nature of primary and secondary education and teaching conditions, but also the possible biased response of respondents (see section Restrictions), the quantitative part of the study is primarily descriptive as findings and recommendations can vary significantly from context, school, class attended etc.). The analysis of the collected quantitative indicators (descriptive statistics) was performed in the statistical programming tool SPSS (Statistical Package for Social Sciences), graphical processing of the obtained data was performed through the software platform Numbers.

Research limitations

In the process of designing research, developing tools and collecting data, several limiting circumstances were taken into account, which somewhat reduce the strength of the offered findings:

- Data were collected during COVID-19. Epidemiological situation had an impact on responses coming from school representatives.
- There are a number of schools that did not respond to the request to complete the questionnaire even after multiple contacts. Of the schools that responded, 14 of them had a low turnout (30 or less), and for 12 schools there was a low turnout (10 or less). It was not possible to further influence the motivation for the surveys to be filled in by teachers and students, nor could it be included in internal communication within schools that forwarded the invitation text with links to their employees and students. In addition, it is possible to assume that the lower response of some schools may have been influenced by the fact that they recognized their own weaknesses in conducting e-learning, and were not motivated to share this information with third parties.
- The focus of this report is on the quality of teaching. Quality is difficult to measure objectively without direct external evaluation led by experts from various scientific and professional fields. Unfortunately, when it comes to the work of schools, there are no such quality measures for the pre-pandemic period. It was impossible to include the views of potential employers and labor market experts because the real results of the "forced switch" to e-learning will only be visible in the distant future.
- In addition to the quality of teaching, the focus of the research was the assessment of teachers' digital competencies. It is also not possible to make this assessment in an objective way, with the help of a survey, because the survey itself allows the respondents to be subjective, and to give socially desirable answers.
- Due to the fact that teachers and students were overwhelmed by numerous online surveys during the pandemic, it was methodologically necessary to create relatively short survey instruments that could be completed "in one sitting". This is clearly emphasized in the body of the invitation email and the introduction of surveys in order to maintain the motivation of potential respondents and thus lead to a satisfactory response. At the same time, this meant that certain interesting details had to be left out.

3. Research findings

3.1. Review of the available EU and other European and / or regional frameworks on the application of guidelines on e-learning and blended learning in primary and secondary schools

Through interviews and secondary research, it was determined that *ad hoc* **measures, for the purpose of conducting the teaching process in primary and secondary schools, were introduced and applied in EU countries and countries in the region, as well as in BiH**. Precisely speaking, in terms of strategic responses to pandemic conditions, the crisis has hit all education systems in Europe almost equally. All education systems found themselves in extraordinary circumstances. Both in BiH and the surrounding countries, as well as in the EU zone, the initial reactions and measures were ad hoc. However, EU Member States have a deeper level of structural and financial frameworks and systems to amortize, prepare faster and more flexibly, as the EU is constantly striving to monitor and address the challenges posed by the expansion of electronic communications and the digitalisation of society (Appendix 2).

Unlike BiH, the EU is in the ongoing process of developing new policies and strategies to ensure equal access to all segments of society, including the education sector, in the skills and systems necessary for the digital transformation of society. Through various communications, recommendations, reports, declarations and resolutions, primarily related to media and information literacy, the EU enables and directs its members and countries in the accession process to move in a direction that ensures the digital competences of individuals and society.

Secondary research suggests that if communications on official websites are taken into account, each country's **priority has been to ensure the continuity of the educational process rather than to ensure the quality of education in the process**. Available information on the official websites of the relevant ministries points to the crisis communication whose main goal is the continuity of teaching in primary and secondary schools. Consequently, as in any crisis situation, the essence is always a secondary priority.

3.2. Legal, financial and administrative framework for the implementation and delivery of e-learning and blended learning with a focus on the organization of tools and platforms for distance learning, as well as regulatory opportunities and obstacles

Most respondents state that there are **currently no legal, financial or administrative barriers to further improving this form of teaching.** Several respondents state that this does not necessarily mean that this area will be adequately regulated as it gives the impression that it is waiting for extraordinary circumstances to pass in order to return to the usual way of teaching.

A review of the laws of the competent ministries in the field of primary and secondary education in the field of e-learning reveals serious shortcomings in the laws that should enable the implementation of this form of teaching (Appendix 3). Primary and secondary research indicates that not **all legal frameworks within BiH had legal bases to regulate teaching** in this way at the beginning of the COVID-19. The shortcoming is in the clear legal bases for regulating this type of education through different articles and positions within the law. This applies to all laws on primary and secondary education in BiH. Some administrative units have

regulated e-learning through Urebi rather than making the necessary amendments to existing laws through the usual procedures. Eg Through the "Decree with legal force on amendments to the law on primary education", the RS has removed legal obstacles for this type of teaching students.[1]

In particular, **e-learning is not essentially addressed within the law**. Eg most laws do not have clear and precise instructions on the specifics of e-learning (conditions for distance learning, rules for teaching, organization of practical classes, the procedure of testing and assessment, implementation of the curriculum, etc.). The education authorities have approached solving problems related to e-learning by resorting to the free interpretation of existing articles and positions in laws rather than drafting and adopting new legal solutions that would essentially regulate this type of teaching. Thus, for example, almost all laws (Appendix 3) allow e-learning through the article on 'Experimental school' where it is stated that "a derogation from the provisions of this law on the application of the teaching norm, daily and weekly workload of students, evaluation and assessment of students' knowledge, class education and application of the curriculum".

According to the respondents' perception from interviews, the legal framework did not prescribe restrictions on e-learning, but they also stated that they were aware that the laws were deficient. In the interviews, the respondents pointed out that there are no restrictions in the legal framework, but that e-learning is not precisely defined. Qualitative analysis established the existence of inconsistencies between laws and bylaws, and the **lack of regulations on monitoring and assessment of students in e-learning.**

Secondary research has shown that **all administrative units in BiH have made, or are in the process of drafting, legal solutions that more fully regulate e-learning**.

Data from the primary research show that representatives of school management were divided when it comes to the legal framework and the ways in which it allows e-learning. 50% of respondents from school management stated that the legal framework allows them to deliver e-learning, while 40.3% of them stated that the legal framework does not allow e-learning. The others were undecided.

Financial expenditures are insufficient for equipping schools with technical equipment, adequate software for e-learning, and adequate internet connection. Qualitative analysis determined that the financial resources allocated for equipping schools with technical equipment, educational platforms were not enough to equip schools after the pandemic, but also later, with adequate equipment, in order to conduct e-learning in a quality way. In addition, insufficient funds were planned to train teachers to use educational platforms in an adequate way.

Respondents, who are familiar with the way of working within schools, state that, as far as internal decisions, acts and regulations within schools are concerned, **there are no legal or administrative obstacles to conducting e-learning** in this type of education. It was also

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[1] For more information about RS „The Decree with the force of law on amendments to the Law on Primary Education" and the manner of regulating teaching can be further viewed at: https://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mpk/PAO/Pages/Osnovno_obrazovanje.aspx

emphasized that schools have yet to provide optimal legal and administrative conditions for this type of teaching.

It is also stated that the **competent ministries have enabled teaching to be established relatively quickly when it comes to the legal-administrative aspect**. Most obstacles have been promptly removed largely thanks to the rapid interventions of relevant ministries and governments to ensure continuity of education.

Respondents state that it is **legally and administratively necessary to provide some kind of e-learning standard** in terms of defining minimum criteria and specifications for internet connection equipment and quality and minimum teacher capacity.

During the pandemic, funding for educational institutions was generally reduced as all BiH governments rebalanced the 2020 budget to respond to COVID-19. Budgets were rebalanced and adopted to mitigate the effects of extraordinary circumstances where all levels of government tried to strike a balance by strengthening projected expenditures and finding new revenues, ie rebalancing the budget. Budget cuts were mainly made on budget items that were not used during the suspension of classes in schools, such as transportation costs, overheads, procurement of small inventory, contract services, renovation and investment in infrastructure, etc.

3.2.1. Prerequisites for schools to use tools for self-evaluation (SELFIE, as one of the available European tools)

Quantitative and qualitative research indicate that none of the respondents was familiar with or used the European tool for self-evaluation SELFIE.

In the education systems in BiH, there are no tools for self-evaluation of e-learning and blended learning. Respondents interviewed pointed out that, as there are no clear guidelines for e-learning and blended learning, there are no tools to monitor the quality of this teaching. A review of the law established that there are prerequisites for schools for self-evaluation because all current laws prescribe different ways and forms of self-evaluation, external evaluation and planning of educational work. Here, as in the case of other additions and changes, it is necessary to find essential solutions that would regulate the aspect of distance learning.

3.2.2. Assessments of the available legislation enabling e-learning and blended learning by the education authorities of all administrative units

E-learning is regulated in the regulations as an "experimental form of teaching". The majority of respondents stated in interviews that the laws generally did not recognize this type of teaching. In order to circumvent legal shortcomings, it was initially stated that e-learning is an "experimental form of teaching". In some parts of BiH, the stronghold for e-learning was the rulebook on the organization of schools in hospital conditions. Schools acted in accordance with the requests, orders and decisions of the competent ministries of education. The ministries found their support in the decisions of the entity governments on declaring an accident caused by the COVID-19, and in the Decision of the Council of Ministers of BiH on declaring a natural or other disaster on the territory of BiH. Later, the ministries issued and gave more detailed instructions on more specific aspects of teaching: the use of platforms, the database of student assessment papers, how to end the school year, etc.

Most administrative units **made amendments to the law** this year to further regulate e-learning (Appendix 3). However, although progress has been made with this additional regulation, **distance education is not essentially addressed within the law but is still only declaratively mentioned.** Also, the analysis of the law can show, in most cases, that the amendments for the purpose of overcoming extraordinary circumstances are rather than genuine attempts to enable quality distance education. Some examples state, for example, "if there is an emergency situation in the area of the local self-government unit, work in the area of the local self-government unit is suspended while the emergency situation lasts", or the Minister may approve, depending on climate or other conditions , postponement of the beginning of classes in the first and second semester and extension of winter vacation, so that during the school year the annual fund of teaching hours provided by the curriculum is realized and all program contents are realized ", as well as "exceptionally, the Minister may reasons, for all or for a particular school, to make a different decision on the organization of classes and student holidays (religious holidays, weather conditions, epidemics, etc.).

A very small share of amendments to the laws that essentially regulate this type of teaching has been identified. Even with the amendments, very few laws explicitly recognize this type of education and contain in the law, for example, the article "educational work can be realized as e-learning." Advanced amendments are even rarer, such as that "digital and other content, prepared in accordance with the criteria for the evaluation of digital and other educational content, adopted by the Minister, may be used in the implementation of online teaching." This supplement actually talks about open educational resources, which are recognized as one of the backbones of distance education. It should also be borne in mind that many current shortcomings of e-learning can be compensated through the school's internal acts, but ultimately laws must regulate this type of teaching. Also, few administrative units recognize the value of this method of teaching and are ready to use and improve it in the post-pandemic period by providing in the law members who regulate it, such as "during the school year in the regular teaching process at school, the school is obliged in the annual work program, plan four weeks of online classes, two in each semester, in accordance with the established schedule of classes and the schedule for regular classes ".

„We have adjusted the laws, and passed the accompanying bylaws, and thus created the legal framework for organizing and implementing e-learning."

„The existing legal framework should be further adjusted in the areas of: teaching modality implementation, program content, student assessment, etc. Bylaws should be regulated, it is necessary to standardize online teaching and ICT equipment."

„It is necessary to plan new regulations for online teaching, as well as means for implementation. Circumstances for the education of talented people, athletes who travel a lot, the sick, etc. should also be regulated."

„Through various decrees, regulations and orders, the education authorities (governments and ministries) have given guidelines for the implementation of teaching. To a large extent, educational institutions are enabled to decide for themselves how distance learning will take place (Viber, Skype, etc.)."

3.2.3. Estimates of available financial tools and ways to adjust funding, which would facilitate e-learning and blended learning during the coronavirus pandemic by the education authorities of all administrative units

Secondary and primary research indicates that **funding for education during the coronavirus pandemic has been revised.** All administrative units in BiH have rebalanced the budget for 2020 in order to respond to emergency conditions. Research indicates that all budgets have been revised and all adopted to mitigate the effects of contingencies. The rebalance was in most cases done in such a way that certain funds that were not so current during the closing of schools (eg transport, overheads, small inventory) were relocated to other purposes, educational or other. In addition to this almost standard practice, we also record examples of intervention measures aimed at increasing funding, for example, the RS Ministry of Education and Culture has allocated an additional three million KM for education. The 2020 UN report "Reducing the Impact of the COVID-19 Pandemic on the Learning of Children and Youth in Bosnia and Herzegovina" states that "out of 14 education authorities, only four stated that the education sector in their administrative units will not be subject to budget revision, while two stated that the budget rebalance plan in their administrative unit has yet to be adopted. " The report further states that it is planned that the education sector in eight administrative units will be the subject of a rebalance, and it is estimated that the cumulative amount of budget cuts in 2020 may amount to a total of 14,775,853 KM. It further states:

> "Budget cuts were mainly made on budget items that were not used during the suspension of classes in schools, such as transportation costs, overheads, procurement of small inventory, contract services, renovation and investment in infrastructure, etc. Respondents from Sarajevo Canton stated that budget cuts for contract services, adopted as part of the first budget revision in May 2020, jeopardize the implementation of the regular school process as it prevents the financing of some of the necessary preparatory activities (eg annual health examinations of teachers and school staff, accounting services, competition for teaching staff for the new school year, etc.). Consequently, in the second budget revision adopted in July 2020, the government was tasked with reimbursing the education sector in the amount of about 600,000 KM in order to provide funds for basic spending in preparation for the start of the new school year.."[2]

Photo 2. Budget cuts for education per administrative unit (KM)
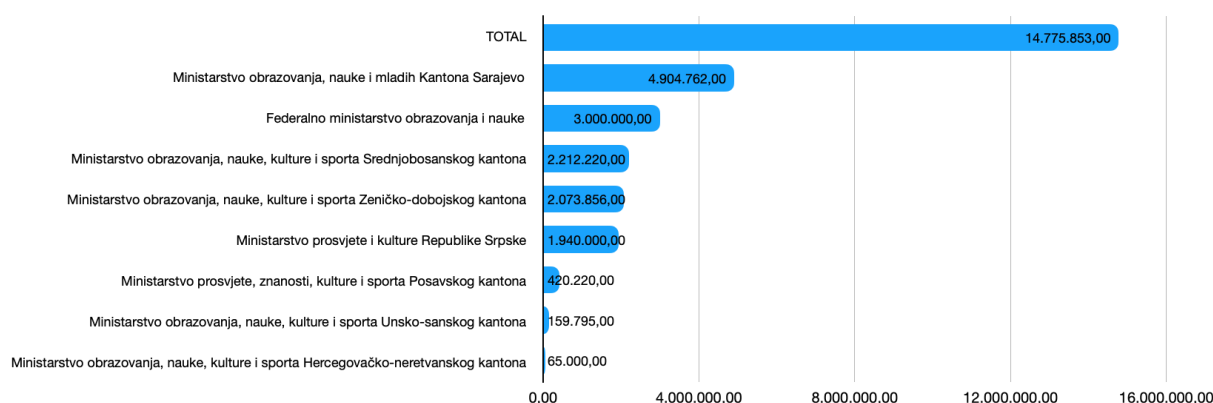
Source: United Nations, "Reducing the impact of the COVID-19 pandemic on the learning of children and youth in Bosnia and Herzegovina", p.21.

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[2] *Ibid.*

Representatives of school management mostly (76.4%) believe that the existing financial framework does not meet the needs of the school for e-learning and blended learning. 13.9% of them believe that this financial framework is adequate.

According to the interviewed representatives of the ministries, although the situation differs from school to school, **there were no problems in conducting public procurement**. The problem was the lack of ICT equipment on the market, which was difficult to procure, so tenders were known to fail.

„Additional funds have been approved by the Bosnian-Podrinje Canton Government for the procurement of school equipment. Funds were provided for the purchase of equipment, for the development of revised implementation plans and programs for primary and secondary schools in which unnecessary content was removed. IT teachers were paid to create and deliver training for other teachers."

"Una-Sana Canton government has to some extent procured ICT equipment for low-income students."

Representatives of school management were more skeptical and divided about the public procurement process. Asked if they had difficulties in conducting public procurement, representatives of school management (21%) said no, and 37.1% said they had problems, while 41.9% said they did not know.

3.2.4. Assessments of available administrative possibilities of adaptation by the educational authorities of all administrative

Qualitative research has identified various activities undertaken by the education authorities in adapting to the new situation by declaring a coronavirus pandemic. It is necessary to make a difference between the two school years, 2019/2020. and 2020/2021, because 2019/2020 all education systems in BiH were taken aback and completely unprepared to respond adequately. After schools closed, authorities in education systems began to address the issue of continuing the teaching process. In some educational systems, the educational authorities examined the capacities of ICT equipment among teachers and students, and after receiving information that more students and teachers who are not able to monitor and conduct e-learning with the help of ICT, **decided to record classes and broadcast via TV stations.** Thus, primary school students listened to short lectures on the subjects scheduled every day, and the schedule of lectures was prepared in advance. In other educational systems, classes were conducted in real time, according to a schedule that existed before COVID-19.

In order to train as many teachers as possible to use ICT for distance teaching, **representatives of education authorities and school management relied on IT teachers,** who they considered to be solidly trained and as such, with their IT competencies, can support their colleagues. Their education was the first education of teachers in the field of technical competencies for conducting e-learning.

In the next school year 2020/2021 various adaptations were made in the implementation of teaching, all with the aim of gaining in quality and the gradual return of students and teachers to schools. In some education systems, teaching continued to be conducted exclusively at a distance in real time (due to the poor epidemiological situation and the advice of crisis staffs),

while other education systems returned students to school, but with various modifications to teaching as follows:

- Classes were divided in smaller groups and lectures lasted 20-30 minutes and were delivered in schools.
- Classes were divided in smaller groups and lectures lasted about 45 minutes, but students spend one week school and one week online. Groups rotated.
- In some municipalities selective closure of schools took place in accordance to the epidemiological situation. In those cases, lectures were taken place solely online.

3.3. Analysis of tools, platforms used in e-learning in elementary and secondary schools

Representatives of school management believe that the basic capacities of schools for conducting e-learning were good, while representatives of the competent ministries and pedagogical institutes believe that they were insufficient. 39.4% of surveyed management workers assessed the equipment of schools with computers and the quality of internet connection as good, 22.5% believe that they had very good capacities, while 5.6% believe that at the beginning of the pandemic their schools were well equipped for distance teaching. Representatives of the competent ministries and pedagogical institutes are of the opinion that it is necessary to equip schools and students with ICT equipment, and better internet connection.

Respondents interviewed (competent education authorities, experts and the NGO sector) believe that at the beginning of the pandemic, the technical capacity of schools was very weak, only to be strengthened over time. The situation was gradually improving, ICT equipment was procured through donations and through the Ministry. Internet networks in schools were generally not strong enough to support complete teaching. Interviewees believe that the situation was not good even during the total closure when teachers worked from home. Many teachers, as well as students, did not have the technical resources to conduct online classes. That is why ministries and schools gave individuals technical equipment on the reverse. During the interview with the representatives of ProMente and Step by step, one of the results of their research was pointed out, which shows that about 30% of the teaching staff did not have a quality connection. The situation with the internet was even worse in rural areas. Numerous mentioned problems were tried to be overcome by organizing classes that were broadcast on various television services.

„At the time of the pandemic, the biggest problems were the lack of ICT equipment for teachers whose work was for a period exclusively from home. The schools had the equipment, but it was "lock down" and the Ministry reacted by giving computers to teachers and students from low-income families for use on the reverse. "

" When it started in the spring, the situation was really bad with the Internet. At the beginning of the pandemic, the people were scared and went from the city to the countryside, to weekend houses, to relatives. This has further burdened the already poor connection in these peripheral parts. "

"In general, the technical capacities were poor. There was poor internet access, and not all schools had it, there was also a lack of office laptops. Teaching on TV was a necessary evil because it was the only mass way of communication. "

" Over 20,000 laptops for students and over 2,000 laptops for teachers were delivered to primary schools in the Republic of Srpska within the "Dositej" project. Also, within the projects with international organizations, over 200 laptops for teachers and over 700 tablets for students were delivered to primary schools. As part of projects with international organizations, 50 STEM laboratories with about 200 laptops for teachers were delivered to high schools. In cooperation with Mtel, we are constantly working on improving the internet connection in schools, introducing optics (where technical conditions allow) and introducing wireless internet in regional departments."

When it comes to students, they most often used computers, although in the sample of primary school students there was almost an equal percentage of those who used telephones and those who used computers. Also, among primary school students there is a higher percentage of students who had their own phone than their own computer.

Table 1 Digital devices that students used in e-learning and blended learning (%)

	School year 2019/2020		School year 2020/2021	
	Phone	Computer	Phone	Computer
Primary school	48,6	51,4	48,0	52,0
High school	42,3	57,7	42,3	57,7

Qualitative research has indicated that there is a lack of clear guidelines for e-learning and blended learning. The interviewees agreed that the lack of clear guidelines on e-learning and blended learning greatly complicates the work of both teachers and students. They also believe that it is important to standardize e-learning and blended learning.

"Norms need to be changed, online teaching needs to be valued more. Under normal circumstances, it should be on a smaller scale, but there should be more time to prepare. "

"It is necessary to provide equipment for schools, a stronger internet network, training for teachers. We have now introduced the subject Digital World from the second to the fifth grade in primary schools (in the Republic of Srpska), which can strengthen certain competencies of students. "

"Considering the course of the pandemic, the measures regarding distance learning will be modified, considering its representation in teaching." The Ministry is working on improving this type of teaching and is looking at the best way to find a balance between teaching with the application of modern technologies and traditional teaching in classrooms, as well as a valid ratio of digitalization of teaching content.

Representatives of school management and teachers believe that schools have mostly provided adequate software platforms that teachers and students have used in e-learning. Qualitative analysis determined that in the beginning, the teaching took place mainly via Viber, and later on, various platforms and applications were used. 81.9% of management representatives and 74.6% of teachers stated that their schools had a software platform, which they used to conduct e-learning. 58.1% of teachers believe that the provided software meets most

of the needs of school teaching, but that it lacks some more advanced options, while 28.9% of them believe that the software they used fully meets the needs of teaching. Although a higher percentage of teachers believe that the offered software platforms lack advanced options, they mentioned in the questionnaire suggestions that do not represent advanced options. Some of the suggestions are:

> *„The platforms are not designed for practical classes. "*
>
> *"Lower elementary school students cannot use the platform on their own."*

These problems have definitely affected the quality of distance learning, both in the field of practical teaching and in working with lower primary school students, but also indirectly point to the problem of digital competencies of teachers, which prevented them from giving concrete suggestions on missing advanced options .

Over 40% of surveyed teachers believe that the provided software platforms enable them: communication with students (58.1%), organization of classes (41.3%), setting up learning resources (41.7%), conducting distance learning by organizing video calls (48%).

The software platforms used were not adequate for a certain percentage of students. The problems encountered by primary school students were as follows: difficulties in accessing the platform (18.44%), insufficient knowledge of how to pass homework on the platform (7.25%), complexity of the platform (4.55%). When it comes to high school students, they had no problems using the platform.

The interviewees pointed out that the competent ministries offered different platforms to teachers, but also that they left enough space for teachers to choose which platform to work on.

> *„Initially, two platforms were used, MOODLE and Microsoft office 365, later due to better opportunities, all schools switched to Microsoft office 365. All tools are free for schools. Schools had the right to choose the platform, they chose the simplest platforms to use because they were not sufficiently capacious. The University of Mostar created the ŠKOLARAC platform, it worked on the principle of MOODLE, over time it turned out that this platform is better for older grades of primary school and high school, while for lower grades of primary school Google Classroom was used."*

There is a difference in the assessment of pedagogical and technical equipment of teachers by representatives of management and teachers themselves, on the one hand and representatives of relevant ministries, teaching institutes, NGOs and experts in the field of education. Key experts and representatives of relevant ministries and pedagogical institutes believe that the main problems and challenges at the beginning of the pandemic were: lack of adequate equipment; lack of skills to use equipment; curricula that were not adapted to the new way of teaching, poor internet connection, lack of pedagogical and didactic competencies for distance learning, as well as inadequate legal frameworks, and inadequate technical equipment of students for distance learning. The interviewees believe that the educational institutions have solidly adapted to the new circumstances and that the past school years have been successfully brought to an end. Quotes from the interviewees indicate some specifics.

> *"Distance learning in our conditions was not organized until the outbreak of the Corona virus pandemic. Through cooperation and joint*

work, we managed to organize distance learning. We primarily organized the recording of classes on the public service, and after that we enabled distance learning using different platforms. It was not simple or easy, but the goal was not to interrupt the continuity of teaching. All the obstacles we faced, from the fact that the students did not have the technique to follow the lessons, that they did not have the Internet, telephones, etc., we solved by giving schools laptops to students, and in cooperation with certain companies we provided students phones, as well as the Internet. "

"It was extremely difficult in the beginning. Smaller administrative units found it easier. Eg The canton of Goražde (Bosnia-Podrinje Canton, op. Cit.) Has six primary and three secondary schools, so it was relatively easy for us to organize classes in these extraordinary circumstances. "

"The quality in high school was better. Older students are older, and they know the technique better. In general, online classes went better than we expected. "

Representatives of the management of primary and secondary schools (77.5%) believe that their teachers had adequate equipment for distance learning, as well as that they have developed certain competencies for conducting this type of teaching. However, 36.5% of teachers stated that they had an inadequate computer that they used in distance learning. 50.9% of them complained about the weak internet connection, 38.8% said that they lacked auxiliary equipment such as cameras, microphones, headphones, and 24.1% do not have specialized software for editing audio-video recordings. 21.2% of teachers did not have any problems with technique.

56.9% of management representatives stated that teachers had organized distance learning trainings. The trainings were organized by the competent ministries, pedagogical institutes, as well as international organizations: UNICEF, UNESCO, OSCE, GIZ, etc. The first trainings were conducted by computer science teachers for their colleagues. The result of all these educations is the attitude of 63.3% of teachers that they are technically competent to use software solutions, intended for distance learning. 65.3% of management representatives pointed out the mutual exchange of experiences of their teachers, while 29.2% of them said that teachers were provided with various materials from which they could learn and work on developing their competencies in this area.

How the development of digital and professional competencies for distance learning has been done in schools can be seen in the following chart.

Graph 1 Development of digital and professional competencies of teachers for conducting distance learning
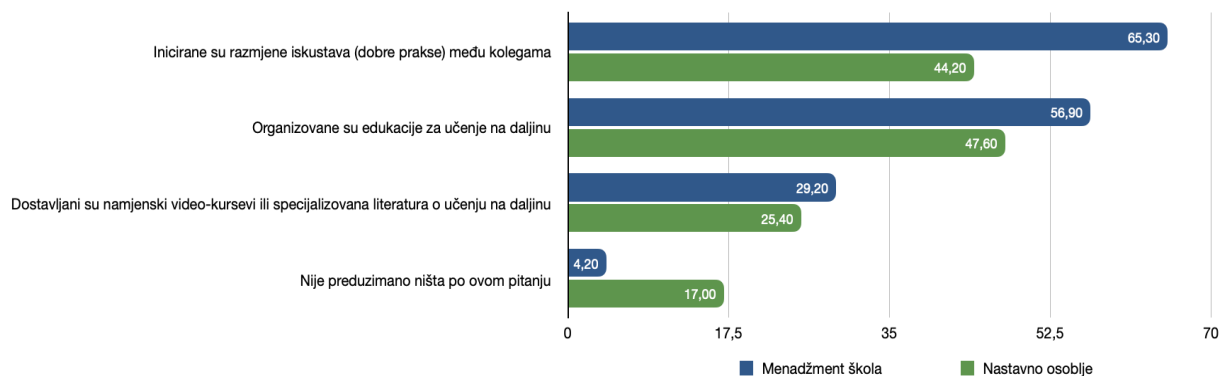
The following software solutions were mostly used in distance learning: Microsoft Teams, Google Classroom and Viber / Whatsapp**. All respondents (management, teachers and students) pointed out that the Microsoft Teams [3], Google Classroom[4] i Viber/Whatsapp.[5]

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[3] Microsoft Teams is a communication platform with the following features: chat, video conferencing, file setup and storage, and application integration. Other Microsoft programs (Word, Excel, Power Point, One Drive) can be used at the same time. When it comes to messaging. it can be personalized, but also at the group level. The documents that are placed on it can also be edited. It also allows video and audio calls. All calls can be scheduled in advance, but can also be established without prior appointment. What is especially useful for teachers is that tests and quizzes can be created on this platform in order to test students' knowledge. (https://www.microsoft.com/en-us/microsoft-teams/group-chat-software).

[4] Google Classroom is a free web application used for educational purposes. It also uses other applications such as: Google Drive, Google Docs, Google Slides, Google Forms, Gmail, Google Calender. It is the teacher who creates the Classroom and invites the students into it. Google Classroom allows you to exchange messages, set up and save files. This is a very simple application, which allows the teacher to comment directly on each student work in the classroom. Messages can be exchanged at the group level, but also individually. This app does not offer video calling capability, but the additional Google Meet Google app can be used for direct video calling and teaching. (https://edu.google.com/products/classroom/)

[5] Viber / Whatsapp are applications that are primarily used for everyday communication between people and are not made for educational purposes. They allow you to connect more people, create groups, and quickly exchange information and documents. However, memories are limited. (https://www.viber.com/en/; https://www.whatsapp.com/).

Graph 2 Platforms and applications used in e-learning and blended learning 2019/2020 i 2020/2021
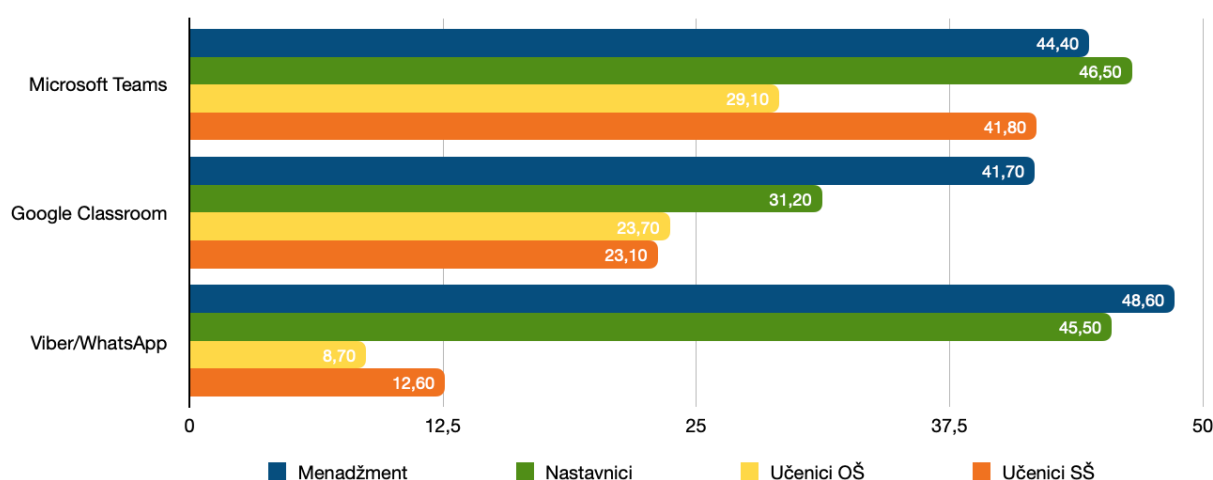
There are also some specific ideas, when it comes to a platform that could be used in e-learning, so one respondent from primary school wrote: *"Discord is not just for games, it can be made a great platform for school. ''*

Adequate training for the application of software solutions in e-learning has been provided to teachers and professional associates. The quantitative part of the research indicates that professionals from management (81.7%) and teaching staff (65.3%) are satisfied with the training provided to them, when it comes to the application of software solutions used in e-learning. 63.6% of teaching staff believe that they are competent enough to apply technologies in e-learning and perform adequate implementation of such teaching. In addition to the fact that most teachers believe that they have had adequate education, 68.2% of them believe that it would be necessary to further educate themselves in this area.

The interviewees pointed out that the trainings for the existing platforms were short-term and informative, ie that they did not provide the teaching staff with a deeper and more complex knowledge of them.

"There should have been better training to support the use of technical equipment. Trainings were organized together with one company, but they lasted for a short time (3 hours). They were more instruction than training. There was no methodological training for distance learning. There were some positive examples. "

"The trainings were not precise enough, we still need to work on that. TEAMS is ok, but teachers didn't know how to use the many options that this platform provides. "

The difficulty for the teaching staff was insufficient knowledge of English, which is why they had limited access to education. Most of the training materials stored on one of the available Open Educational Resources (OER) are in English.

The opinion of students on the organization of education on the use of software solutions for e-learning was divided. Students from both primary and secondary schools spoke

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almost equally about whether they had been educated on how to use software solutions given to them for participation in e-learning. 49% of primary school students and 43.3% of secondary school students said that they received education, while 40% of primary school students and 42.6% of secondary school students stated that they did not receive education.

3.4 Different approaches to e-learning and blended learning and their impact on the quality of curriculum implementation, practical teaching, and student achievement

Most representatives of school management believe that they had good coordination with the relevant ministries and pedagogical institutes during distance learning and blended learning. 38% of management representatives think that the coordination with the competent ministries and pedagogical institutes was good, 18.3% see it as very good, while 9.9% of the respondents think that they had excellent coordination. Such satisfaction with the cooperation and support of the competent ministries and pedagogical institutes can potentially be influenced by the fact that 95.8% of the surveyed representatives of school management said that they received information and instructions on e-learning from the competent ministries and pedagogical institutes. In the sample of respondents, there are those who believe that this coordination was bad and very bad (33.8%).

Qualitative research indicated that the respondents were of the **opinion that there was coordination between the competent ministries, pedagogical institutes and schools, but it was mostly one-way.** It often came down to the fact that the ministries sent instructions and instructions, but there was a lack of quality feedback from schools on how they perceived all this information, whether it was clear and applicable to them. Some of the respondents pointed out that they were not satisfied with the communication between schools and parents.

"We from the Ministry have the impression that we have done a lot, probably in schools they think that we have not."

"The level of communication between the ministry-school-principal-teachers was intensive. However, that communication was one-way. The lack of two-way communication was noticed, ie from the direction teacher-principal-school-ministry. Due to extraordinary circumstances, the priority was to hold classes one way or another. "

"The instructions were one-way between the Ministry and the school, but the cooperation between the school and the parents was almost completely absent, with poor coordination."

Representatives of management, teachers and students of primary and secondary schools assess the quality of e-learning as good. Representatives of the management of primary and secondary schools mostly think that the quality of e-learning was good (46.5%), while 26.7% of them think that it was bad. 26.7% of surveyed representatives of school management believe that the quality of e-learning was very good and excellent. In accordance with the experience of quality and satisfaction with e-learning is high. 56.6% of teachers point out that they are satisfied and very satisfied with the organization of e-learning, 28.4% of them express neither satisfaction nor dissatisfaction, while 13% of teachers are dissatisfied with their e-learning. 48.6% of high school students assess the quality of e-learning as good, while 37.6% of them do not assess whether it is good or bad, and 13.8% of them see this type of teaching as bad.

When it comes to primary and secondary school students, **primary school students (68.4%) are explicit that they do not want such classes next school year**, while secondary school students have a different opinion. 42.4% of them would not like it in this format, 40.9% are for this type of school, while 16.7% of them are undecided.

The interviewed respondents agree that the planned curriculum has been fully implemented. However, the view is also that learning outcomes have not been mastered to the best of their ability. Unfortunately, according to them, extensive and quality evaluations were not conducted, which would indicate the level of realized learning outcomes.

"No research was conducted, but a period of three months showed that educational outcomes were not best mastered. The results of learning and governing success were better than before the pandemic. We do not know whether the educational outcomes have been achieved because no evaluation has been done. "

"There is feedback from schools, but not real evaluation. Each class teacher submitted a weekly report on the level of established communication with students. We did not check the student's achievements, we do not have exact indicators. "

"Grades are similar compared to the period before the pandemic, but the quality of teaching is lower, as well as the satisfaction of learning outcomes. Now it needs to be compensated. "

Teachers believe that there is still room for improvement when it comes to pedagogical and methodological competencies for e-learning, and the same opinion was expressed by interviewed representatives of relevant ministries, pedagogical institutes, and experts in the field of education. 68.2% of surveyed teachers believe that they need additional education, 21.5% of them are not committed to this issue, while 10.3% of them believe that they do not need additional education.

Respondents in the interviews agree that the teaching staff is very necessary education in the field of teaching (lesson preparation, video design, use of various digital tools for teaching purposes), student assessment, giving feedback. In addition, they noted that it is also necessary for teaching staff to recognize the need for training and lifelong learning.

The expert in the field of higher education pointed out: "We need immediate training, development of modules for learning methodology and e-learning, and then set up modules to be available online."

The representative of the non-governmental organization points out that according to their research, 30% of the teaching staff did not have professional training: "Profession that teaches - does not learn".

Teachers are divided in their views on adequate support in working with children from marginalized groups. 50.8% of teachers believe that they had support in working with children from socially disadvantaged families, while 32.2% of them did not have that support. When it comes to working with children who have developmental problems, 38.1% of teachers pointed out that they had support in their work, while 40% said that they lacked that support. In

the work with children of the Roma population, the percentage of teachers who did not have support (42.2%) is higher than those who stated that they had (25.2%).

Interviewed representatives of organizations dealing with the protection of the rights of persons from marginalized groups believe that these children are not treated as a group of children who need different support, as well as their parents. There was no direct communication with students or parents.

Teachers are not satisfied with the inclusion of children from marginalized groups in e-learning. A higher percentage of teachers are dissatisfied with the participation of children from marginalized groups in the distance learning process.

Graph 3 Teacher satisfaction level: Inclusion of children from marginalized groups in e-learning
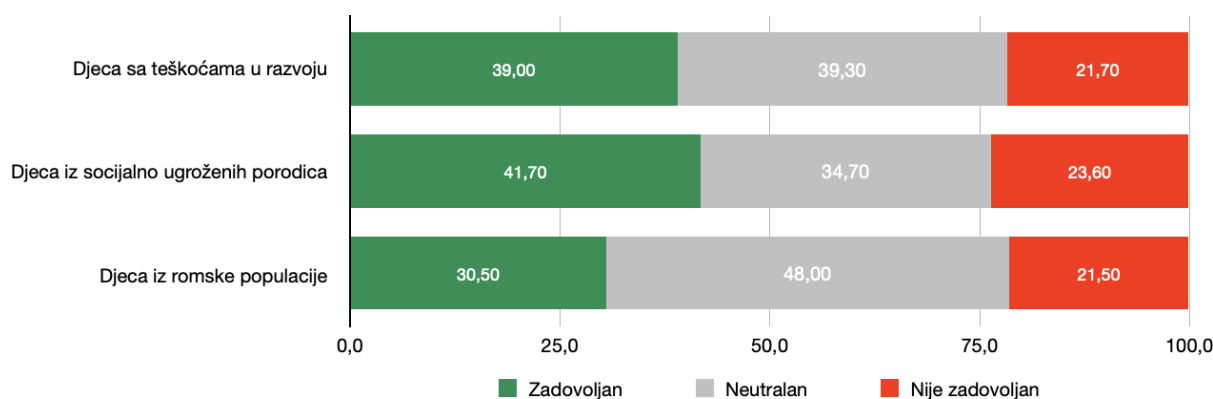
Teaching assistants are provided for students with disabilities, so that cooperation was established on the teacher-assistant-parent-student relationship, but in practice there were many problems and unfulfilled plans. Special instructions were given to work with children with disabilities. It was very challenging, because everything had to be individualized.

"It was an instruction, but in practice it was bad. Teaching assistants had to be in their homes because of the measures. "

"Materials were forwarded, mobile teams sent materials made for the conditions of the pandemic to parents and students with disabilities. The video tutorials were very useful, but not enough video tutorials were made. "

"The work model should be 1 on 1 when it comes to students with disabilities."

When it comes to the Roma population, the transition to distance learning has shown all the shortcomings of education from the perspective of the Roma population. A large number of families do not have electricity or television, so they could not send classes to a distance. In addition, they did not have the standard parental support that other students generally had. Associations representing or working with the Roma population tried to help as much as they could.

"Through its program, the Otaharin Association has ensured that 4 teachers, 2 Roma assistants and 2 volunteers

assist the children. They covered 100 children. Those who had support also finished the class. "

"Roma children were in a worse position than others, because 90% of children do not have functional literacy. One of the key problems is that during online classes, children generally did not have help from their parents. The consequences are a lower level of knowledge. "

Learning outcomes in the past two school years are estimated to be significantly weaker compared to previous years. Both teachers (82.9%) and management representatives (72.5%) estimate that there has been a significant decline in mastering educational outcomes in the past two school years. Among management, we have 11.3% of answers that indicate that the success of students in distance learning is significantly or slightly better than in previous years. In contrast, only 3.2% of teachers point out that there has been an improvement. One of the potential reasons for poorer success of students in distance learning can be found in the assessment of teachers that the two most common negative factors of distance learning are inactivity (61%) and lack of motivation (56%) of students.

With this opinion, we can compare some of the answers of primary and secondary school students and better understand why teachers' perception of their success is like this.

Table 2 Attitudes of students towards the process of learning, understanding and motivation in e-learning in the 2019/2020 school year.

School year 2019/2020.	Primary school students		Secondary school students	
	YES	NO	YES	NO
I learned better during online classes than when we went to school regularly.	18,2%	73,8%	32,9%	56,3%
I understood better the material we did in online classes than in regular classes.	9%	86,7%	18,7%	69,3%
It took me longer to write the assignment we were given in the online class than in the regular class.	72,9%	22,2%	65,1%	29,5%
I had more difficulty writing homework in online classes than in regular classes.	64,5%	30,9%	49,9%	44,5%
My parents had to help me more in online classes than in regular classes.	58%	37,9%	12,8%	81,8%
I had problems motivating myself and participating in classes during online classes.	54,7%	37,8%	50,4%	43,4%
Online classes were more interesting to me than regular classes.	23,4%	70,7%	38,7%	52,4%

Table 3 Attitudes of students towards the process of learning, understanding and motivation in e-learning in the 2019/2020 school year.

School year 2020/2021.	Primary school students		Secondary school students	
	YES	NO	YES	NO
I learned better during online classes than when we went to school regularly.	22,5%	66,8%	39,4%	45,9%
I understood better the material we did in online classes than in regular classes.	13%	78,7%	24,7%	58,2%
It took me longer to write the assignment we were given in the online class than in the regular class.	65,4%	27,7%	50,5%	39,3%
I had more difficulty writing homework in online classes than in regular classes.	58%	33,7%	39,1%	49%
My parents had to help me more in online classes than in regular classes.	54%	40%	13%	78,6%

The results in the tables indicate that the processes of learning and understanding the materials in distance learning were difficult for the students. Most of them needed more time to do their homework, and most of them also reported problems with homework. This of course influenced the motivation to learn and practice. It is especially important to emphasize the important role of parents of primary school students, whom students have recognized as a supporting factor in learning and understanding the curriculum.

Difficulties in the organization of practical classes were recorded. The surveyed teachers (53.8%) did not organize practical classes during the second semester of the 2019/2020 school year. year, while the situation in the school year 2020/2021. year somewhat more favorable, because 62.4% of teachers said they had practical classes. In the second semester of the 2019/2020 school year. In the school year 2020/2021, they conducted practical classes more often online (57.3%). years, practical classes were predominantly conducted at school (45.6%), at school and at the employer (25.3%) and online (22.8%).

In the interview, the representative of one of the companies points out that at the beginning of the COVID-19, cooperation was established with teachers of practical classes whose students come to practice in that company. Student health care was the biggest risk, no one wanted to take responsibility in case of coronavirus in students, so practical teaching was not realized in the first wave of the pandemic. An additional problem for employers was the fact that the company required workers to adhere to all hygienic and epidemiological measures, and there was a fear that students could transmit the coronavirus to workers in the company. **Cooperation with the school depended primarily on the willingness of practical teachers to cooperate with the company.**

> *"If the teacher was interested, the cooperation was achieved in a way that the engineers from the company explained the processes from the program of practical classes."*

The representative of the company concluded **that at the school level there was no systematic plan on how to implement practical classes.** Some employers state that the cooperation depended on the willingness of the teacher to cooperate with the company, for example, "*If the teacher was interested, the cooperation was achieved in a way that the engineers from the company explained the processes from the practical teaching program. Nothing was planned and systematically organized at the level of each school.* " What is the satisfaction of teachers and students with practical classes is shown in the following chart.

Graph 4 Level of satisfaction of teachers and students: conducting practical classes in the past two school years
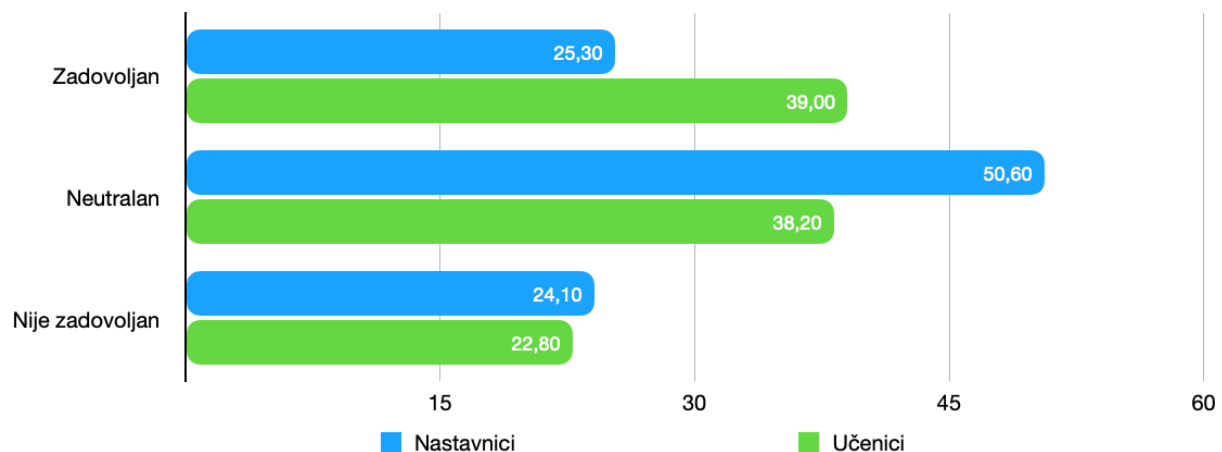
Teachers and students have different perceptions of satisfaction with conducting practical classes in the past two school years. According to the obtained data, 25.3% of surveyed teachers and 39.0% of students are satisfied with the implementation of practical classes in two school years, which are affected by changes in the way of conducting practical classes caused by the coronavirus pandemic. It can be noticed that teachers are most often neutral, ie they are neither satisfied nor dissatisfied with the implementation of practical classes (50.6%), while significantly fewer students stated a neutral level (38.2%). On the other hand, 24.1% of teachers and 22.8% of students are not satisfied with the organization of practical classes. That there were changes is shown in the following chart, which presents the way in which practical classes are organized in two school years.

Graph 5 The way of organizing practical classes in relation to the school years 2019/20 and 2020/21
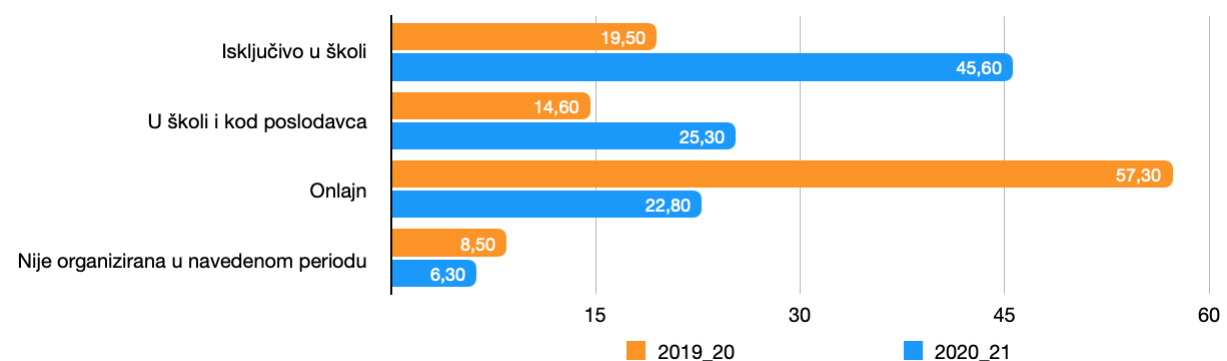
Graph 5 shows clear changes in the way practical classes are conducted in relation to the beginning of the coronavirus pandemic, ie the 2019/20 school year where practical classes were most often conducted online, which was stated by every other teacher (57.3%) who is familiar

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with the development of this way of teaching process. The situation is changing significantly when it comes to the 2020/21 school year, ie the majority of surveyed teachers (45.6%) state that practical classes are conducted exclusively at school. Only 25.3% of teachers state that practical classes were conducted at school and with the employer. Also, it is important to note that only 6.3% of teachers state that practical classes in the school year 2020/21 is not organized (8.5% in the school year 2019/20).

4. Zaključci

The quality of e-learning and blended learning in primary and secondary education in BiH during the coronavirus pandemic was, and still is, far from optimal conditions and quality. There are significant legal obstacles in all BiH education laws to implement e-learning because there is a lack of substantial addressing of the need for a better system. In addition to the lack of legal frameworks, there is a lack of strategic frameworks and guidelines for action on e-learning, as there are no indications of plans and activities that would put this type of teaching in key public policies in BiH. Under such conditions, combined with inadequate budget allocations, schools were unable to respond to the needs of a greater degree of digitalisation during the pandemic; It will be similar in the future if all levels of government in BiH do not decide on this issue as something that is essential not only for education but also for the normal functioning of society.

Most ministries have improved the laws just enough for the teaching process to run smoothly. No administrative unit has recognized that distance education is an essential need of all societies, including Bosnia and Herzegovina, which is in the final stages of complete digital transformation of society.

At the same time, the bearers of the e-learning process share the opinion and are convinced that they have adequately adapted to the new circumstances, and that the school years have been successfully completed. From this perspective, it is obvious that the main part of the challenges and problems during the pandemic were: lack of adequate equipment, lack of digital competencies for using equipment, poor network connection, curricula that were not adapted to the new teaching method, lack of pedagogical and didactic competencies distance learning, and inadequate technical equipment of students for monitoring distance learning. The identified limitations, combined with financial, administrative and legislative shortcomings, have significantly contributed to the poorer quality of distance learning. However, it turned out that the holders of teaching processes managed to finish the previous school year satisfactorily.

What is especially worrying is that this school year started without solving some of the essential problems that make it impossible for distance education to be performed with quality and appropriate results in terms of the desired learning outcomes. It seems that most participants in the educational process seem to be waiting for the extraordinary circumstances to end and to return to the usual way of education. At the same time, no interventions have been made to remove or mitigate some of the factors that prevent quality e-learning. For example, slightly less than half of students are likely to follow e-learning via smartphones rather than computers, indicating the potential problem of adequate participation in the teaching process itself, especially in segments of some forms of interactive teaching; or, lack of systematization with clear guidelines on e-learning and blended learning, as well as concretization of rules for teaching, use of platforms, organization of practical classes, testing and assessment process, implementation of curriculum, etc.

Education systems have tried to amortize the new situation in order to reduce the negative effects on student education through coordination between the competent ministries, pedagogical institutes and schools. However, given that adequate substantive and structural progress has not been made, it is to be expected that this school year will end like the previous one with reduced quality of teaching and partial fulfillment of expected learning outcomes.

5. Recommendations

5.1. Tools and platforms used in e-learning and blended learning

Establishing standards for e-learning and blended learning. Standards for e-learning and blended learning imply a clear definition of the conditions in which these types of teaching are conducted, the roles of all actors, the activities involved and the responsibilities of each. The standards should also contain clear guidelines on how e-learning and blended learning are conducted. As the function of standards is to ensure quality, it is necessary to develop tools based on them for evaluation and self-evaluation of school work, and evaluation and self-evaluation of teachers' work.

Establishing a quality organization of distance learning and blended learning, which should have met the following prerequisites:

- planning and organization of e-learning, which is done at the school level,
- the school should have appropriate and quality ICT equipment, and a stable and quality internet connection,
- the platform through which distance learning takes place is unique for all teachers and students at the school level,
- all teachers and students should have adequate ICT equipment, and quality and stable internet connection,
- teachers should have developed digital competencies.

Equipping schools with ICT equipment and software solutions necessary for quality teaching and e-learning and providing quality internet connection. It is very important that schools are adequately equipped if the aim is to raise the quality of e-learning and blended learning. In addition, in order to develop digital competencies of both teachers and students, it is very important that schools have modern ICT equipment, adequate software solutions and quality internet connection.

5.2. Pedagogical and methodological approaches to distance learning and blended learning

Development of modern curricula for primary and secondary education, which would support e-learning and blended learning. Modern curricula that leave enough space for teachers' flexibility in teaching, and were created in order to develop competencies for the 21st century, are curricula that are easily adaptable to e-learning and blended learning and some new conditions for teaching.

Continuous educations for all employers in education institutions[6]. Learning is a lifelong process and in accordance with that, the education of employees in educational institutions should be continuous and binding for all. They should not be focused only on the implementation of the teaching process, so they should not apply only to teachers, but to all employees. The culture and climate of the school are very important in the development of every child. In order for the education system to offer adequate education for children and youth, it is necessary to develop schools that are open to every child and in which every child has the opportunity to develop their capacities to the maximum.

Modernizing the way of conducting practical classes. In line with global development, it is necessary to work on modernizing the approach to practical teaching. It is undeniable that it is very important that students are given the opportunity to conduct practical classes in the workplace, which they should take in the future, but it is also important to enable them to, whenever it is useful and meaningful, conduct practical classes using digital technologies. In order to work on the modernization of practical teaching, it is necessary to educate both teachers and employers. These trainings should necessarily include trainings in the field of digital competencies, conducting practical classes in the online post (where possible and meaningful), and monitoring the realization and progress of students in conducting practical classes.

5.3. Legal, financial and administrative framework for the establishment and conduct of distance learning

Revise education laws to clearly and accurately enable adequate e-learning. It is necessary to essentially resolve the obligations and rules for e-learning. This is especially true for testing knowledge on online platforms.

Adopt more precise acts and regulations when it comes to the inclusion of e-learning activities in existing systems and frameworks to regulate in detail this area of education in institutions under jurisdiction of ministries. Acts, decrees, rulebooks should ensure that, in the next crisis situation, each individual school is better prepared, as well as that the process of teaching is clearly defined.

Initiate the process of individual consultations and then **determine the factual situation for each primary and each secondary school** in order to establish full digitalization of all teaching processes. Ultimately, ministries should ensure the standardization of network platforms, computer equipment, technical and methodological competencies of teachers, etc. in the administrative units where they are responsible.

Consider increasing education budgets. It is necessary to introduce a new item in the budget related to the implementation of the teaching process in the online environment. Within the mentioned budget item, it is necessary to allocate funds for the procurement of ICT equipment, strengthening the network, development of digital and pedagogical competencies of teachers, innovation of laws and bylaws. The increase in the budget for this purpose should be

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[6] More information about this can be found in the Study entitled "Review of the needs of teachers in distance learning and blended learning in primary and secondary (and TVET) schools in BiH during the coronavirus pandemic"

done by the competent ministries of education, but also by the governments within which the ministries operate.

Design public policies that would ensure continuous digitization of teaching processes even after the pandemic. Strategies and action plans, linked to real sources of funding, should establish the factual situation for each school individually in order to ensure sustainable digitization of teaching processes.

Create models and ways for crisis communication. Particular care should be taken to ensure that the communication models developed ensure the smooth and efficient flow of information from all stakeholders to all stakeholders in educational processes.

Donors, international organizations, development agencies, and civil society organizations should **support the efforts of all participants in the process of establishing a functioning distance education system** through their programs and projects.

6. APPENDIXES

Appendix 1: Educational process in primary and secondary schools in BiH during COVID-19 in the 2020/2021 school year.

According to the official data of the Agency for Statistics of BiH, in the school year 2020/2021. 268,132 students were enrolled in 1,764 primary schools in BiH in 2006, which is 5,902 students or 2.2% less than in the previous school year. The share of the number of female students in relation to the total number of male students is 48.7% (130,556).

In the school year 2020/2021, 28,549 students were enrolled in the first grade, which is in relation to the 2019/2020 school year, less by 2.3%. Of the total number of students, in lower grades (from first to fifth grade, ie ISCED 1) there were 55.1% of students, while in higher grades (from sixth to ninth grade, ISCED 2) there were 44.7% of students. 24,548 teachers were involved in the teaching process, of which 18,018 women or 73.4.

In the school year 2020/2021. 110,334 students were enrolled in 314 secondary schools in BiH in 2006, which is 2,399 students or 2.1% less than in the previous school year. 12,735 teachers were involved in the teaching process, of which 7,921 were women or 61.2%. The largest number of students attend technical schools 55.9%, followed by gymnasiums 21.6%, while in vocational schools 19.1% of students.

The following is information from the relevant education authorities:

Ministry of Education and Culture of the Republic of Srpska: Teaching in primary and secondary schools was conducted according to a combined model. Before the beginning of the school year, the Ministry adopted the "Plan for organizing work in primary and secondary schools in the school year 2020/2021 during the coronavirus pandemic (SARS-COV2) ". The RS Ministry of Health and Social Welfare and the RS Institute of Public Health made recommendations to the RS Ministry of Education and Culture to organize the teaching process, taking into account the health of students and teachers, and primary and secondary school principals were obliged to adjust the school's work to these recommendations. Necessary quantities of protective (masks, visors) and disinfectants and liquid soap were provided, which were continuously delivered to all educational institutions in RS.

Depending on the estimates of the RS Ministry of Health and Social Welfare and the RS Institute of Public Health, classes were organized in schools, with school hours reduced to 20 minutes in both primary and secondary schools, classes divided in half. Teachers were also obliged to ensure that all students who were in isolation or were ill had access to the same content. In short, teachers have borne the brunt of education and teaching during the pandemic.

When the epidemiological situation worsened, they switched entirely to e-learning, using various platforms, some of which were not free (Microsoft Teams, ie Office 365 tools, Google Classroom, Moodle, school websites, Viber, WhatsApp, Platform RS Ministry of Education and Culture for e-learning - E-teaching, information services of the RS Ministry of Education and Culture: E-dnevnik, private e-mail addresses of teachers and students).

Also, not all teachers were equally ready to teach at a distance, which was especially pronounced among older teachers and those about to retire. Periodic online trainings for teachers were organized to help them organize teaching and assessment online.

Ministry of Education, Science, Culture and Sports of Posavina Canton: Teaching in primary and secondary schools was conducted according to a combined model, and an educational inspection was engaged, which by visiting schools and direct inspection determines whether the school follows all detailed instructions from the "Model of teaching organization for school 2020 / 21st year with hygienic-epidemiological instructions ", which was adopted by the Government of Posavina Canton and the Crisis Staff, before the beginning of the school year. The "Model of teaching organization for the school year 2020/21 with hygienic-epidemiological instructions" elaborates two models of teaching organization that ensure a balance between the right to education and health care of children / students while respecting the measure of maintaining social distance between students, teachers and other people in the school.

The first model of teaching organization is combined. According to it, direct teaching at school and at a distance would take place in weekly shifts. In the event of an unfavorable epidemiological situation in the Canton, which would lead to the introduction of more restrictive measures to prevent the spread of infection in terms of confinement of the population in their homes ("Lockdown"), the only option for organizing the teaching process would remain the use of another model.). This model would be applied in all other situations that would prevent one or more students or teachers from directly participating in the teaching process at school (belonging to a very vulnerable or vulnerable group of people, chronic diseases in students or family members, self-isolation of one or group students / teachers, confirmed infection of COVID-19 students or teachers).

Ministry of Education, Science, Culture and Sports of Zenica-Doboj Canton: Teaching in primary and secondary schools was conducted according to a combined model. A number of activities have also been undertaken and a number of decisions and instructions have been made in order to prepare well for another school year in the wake of the coronavirus pandemic, as follows:

● Procedures for the work of educational institutions ("Guide to improving biosafety in the context of COVID-19"), as well as "Guidelines for communication and protocol in the context of school and COVID-19"), made by the Institute for Health and Food Safety Zenica , and which were delivered to all primary and secondary schools in the area of Zenica-Doboj Canton;
● An Action Plan for the implementation of the framework for the reopening of schools in the 2020/2021 school year has been adopted.
● In cooperation with UNICEF, the necessary quantities of disinfectants and liquid soap have been provided, which are continuously delivered to educational institutions;
● In cooperation with Krizni Stab of the Ministry of Health of Zenica-Doboj Canton, the necessary quantities of protective equipment were provided - visors and protective masks for staff and students.

In accordance with the Decision of the Crisis Staff of the Ministry of Health of Zenica-Doboj Canton, and in accordance with the Procedure for the work of educational institutions, the Guide to Improving Biosafety in the context of COVID-19, as well as the Instruction on communication

and protocol in the context of school and COVID-19, adopted the Instruction on the organization of the educational process in primary and secondary schools in the area of Zenica-Doboj Canton in the school year 2020/2021. The mentioned Instruction defines all important issues related to the beginning and organization of educationa in primary and secondary schools in the canton. The Ministry also issued an Instruction on the manner of monitoring, evaluating and grading students, and taking additional and / or class exams in primary and secondary schools, in order to provide support to teachers, students and parents in their work.

The existing ICT equipment available to schools, as well as the lack of ICT equipment in schools, have caused problems in the technical support of distance learning / teaching. Therefore, since the appearance and spread of coronavirus (COVID-19), the Ministry has launched a series of activities that included continued cooperation with various domestic and foreign, governmental and non-governmental organizations in the field of insurance and procurement of IT equipment.

The Ministry provided for 97 educational institutions from the Zenica-Doboj Canton, including schools in the municipalities of Žepče and Usora, the registration of the web domain edu.ba, and thus provided a unique platform for the implementation of distance learning in the school year 2020/2021 . years. With the help of the OSCE Mission to Bosnia and Herzegovina, introductory webinars for teachers, parents and students on the implementation of the Microsoft Office 365 platform were conducted, according to the response of the Ministry of Education, Science, Culture and Sports of Zenica-Doboj Canton.

Ministry of Education, Youth, Science, Culture and Sports of the Bosnian-Podrinje Canton: Teaching in primary and secondary schools was conducted according to a combined model. In August 2020, the Instruction on the organization of the educational process in primary and secondary schools in the Bosnian-Podrinje Canton in the school year 2020/21 was adopted. In order to protect the health of students and employees, school facilities are regularly disinfected, inspected by the sanitary inspector, and strict adherence to the measures and recommendations of the Crisis Staff of the Bosnian-Podrinje Canton is insisted on. The application of this model of work gave the expected results because no virus transmission was recorded in schools.

Ministry of Education, Science, Culture and Sports of the Herzegovina-Neretva Canton: Teaching in primary and secondary schools was conducted according to a combined model. In August 2020, instructions and recommendations were given to schools in order to have a safer start to the new school year. Prior to the start of the school year, the ministry provided protective visors for teachers, thermometers and disinfectants for the school and personal disinfection of students and staff. Based on the instructions, the school hour lasts 30 minutes and the maximum number of students in the group is 15. The maximum number of students and teachers in the classroom is respected, the temperature is measured every day and records are kept, protective masks are used.

Ministry of Education, Science, Culture and Sports of the West Herzegovina Canton: Regular educational process in all educational institutions (preschool, primary and secondary schools) was interrupted on March 12, 2020 and lasted until the end of the school year 2019 / 2020 years, with the help of ICT technology. In order to better prepare for the 2020/21 school year, the Ministry organized a series of activities during the summer holidays.

In the new school year 2020/2021. The year of classes started regularly in accordance with the adopted Rulebook on the work calendar for primary schools in the West Herzegovina Canton and the Rulebook on the work calendar for secondary schools in the West Herzegovina Canton, in accordance with the given Guidelines of the Public Health Institute of the West Herzegovina Canton. Until the end of the school year, teaching in primary and secondary schools was conducted according to a combined model. The maximum number of students and teachers in the classroom is respected, the temperature is measured every day and records are kept and protective masks are worn. Sufficient disinfectants are provided. Other hygienic and epidemiological measures are also respected.

Classes in the 2019/2020 school year in preschool institutions, primary and secondary schools, and higher education institutions in ZHK was terminated in the second and third week of March 2020. Unlike the school year 2019/2020 when classes are completed at a distance, in the school year 2020/2021, a combined model was applied, and e-learning took place through free platforms, but also with the support of television and radio programs.

Ministry of Education / Education and Science / Science of Tuzla Canton: Teaching in primary and secondary schools was conducted according to a combined model. Crisis preparedness and response plans for COVID-19 have been adopted in educational institutions, which include monitoring the implementation of measures by the operational team of the institution. Certain quantities of disinfectants and protective masks for the needs of educational institutions have been provided through non-governmental organizations, UNICEF, but also through the Cantonal Directorate for Commodity Reserves, local communities and economic entities.

In primary and secondary schools, classes continue in the first semester of the 2020/2021 school year organized in such a way that the students of the same class are divided into two groups, in case the class has more than 15 students. Students from first to fourth grade attended regular classes at the school for a maximum of 120 minutes, while students from fifth to ninth grade and high school students attended regular classes at school every other week, provided the class was divided into groups. Students who did not go to school regularly during the week were provided with online classes. Classes in classes with less than 15 students are organized every day at the school. And higher education institutions from the beginning of the academic year 2020/2021. They organized a combined model of the realization of the teaching process, depending on the number of students and subjects in study programs, it was written in the response of the Ministry of Education / Education and Science / Science of Tuzla Canton.

Ministry of Education, Science and Youth of Sarajevo Canton: Teaching in primary and secondary schools was conducted according to a combined model. Three teams have been formed to provide support and professional supervision over the implementation of online teaching in primary and secondary schools, digital platforms have been established for the implementation of online teaching in all public and private primary and secondary schools (78 primary and 43 secondary schools), and in cooperation with UNICEF implemented teacher education through webinars, in order to provide assistance and support to teachers in online teaching. 22 webinars were realized, and about 4,000 teachers participated. In partnership with UNICEF, the Ministry implemented the first project activity within the regional project "Learning Initiative - Digital Learning Environment".

The following documents have been prepared: Methodology for the implementation of online teaching and Guidelines for the creation of digital content and Guidelines for evaluation and assessment in online teaching. The line ministry has launched an initiative to provide the Internet for students in a state of social need, and has provided funds for disinfection. During December 2020, classes for students from grades I-V were conducted according to a combined model, while students from grades VI-IX of primary schools and high school students attend classes online.

Ministry of Education, Science, Culture and Sports of Una-Sana Canton: Teaching in primary and secondary schools was conducted according to a combined model. The Instruction on the organization of educational work in primary and secondary schools in the Una-Sana Canton for the school year 2020/2021 was adopted. Allowed stay of a maximum of 18 students, with a distance of 2 m. Classes are held regularly, and if there are more than 18 students in the class, the class is divided into two groups. The school lesson lasts 30 minutes. To hold classes in classes divided into two groups, the school makes a schedule of alternating regular classes and distance learning. Schools were recommended to use a maximum of two applications to submit materials and in accordance with technical capabilities. The Teachers' Council, together with the director of the institution, selects two applications for use. School principals are in charge of educating other teaching staff in the field of ICT together with IT staff.

Brčko District of BiH Department of Education: Teaching in primary and secondary schools was conducted according to a combined model. In August 2020, the Government of the Brčko District passed an Order approving the Protocol and conditions for the start of classes in the 2020/2021 school year in primary and secondary schools in the Brčko District of Bosnia and Herzegovina. The protocol stipulates the obligations of the founders — procurement of masks / visors for teachers, masks for students, mandatory disinfection of students and teachers upon entering the school, respect for physical distance, minimum 1.5 meters. Also, the Protocol prescribes the obligations of the school: organization of classes according to the schedule in classrooms, without keeping parents and students in the school yard, in primary schools no classroom classes are conducted except in Informatics, Technical Education and Physical Education. Practical classes are realized in the open space (agricultural land and outdoor facilities of the open type), without grouping students, employers behaving in accordance with the conditions prescribed by the employer. Online communication with parents. Every 15 days, the Government of the Brčko District issued an order regarding the manner and organization of the work of schools in accordance with the epidemiological situation, during the 2020/2021 school year.

Ministry of Education, Science, Youth, Culture and Sports of Central Bosnia Canton: Several decisions and instructions on the organization of educational work in primary and secondary schools in the Central Bosnia Canton for the school year 2020/2021, which are regularly revised in accordance with the epidemiological situation:

▪ Decision on the suspension of the educational and teaching process in preschool institutions, primary and secondary schools (number: 03-34-12 / 20-7 of 12 March 2020)

▪ Instruction on the organization of classes with the application of information and communication technologies (number: 03-34-12 / 20-9 from 16.3.2020)

▪ Instruction on the organization of on-call duty and improvement of teaching with the application of information and communication technologies (number: 03-34-12 / 20-11 from 23.3.2020)

▪ Instructions on providing professional pedagogical assistance to students, parents and teachers in primary and secondary schools (number: 03-34-12 / 20-12 from March 26, 2020)

▪ Decision on the continuation of the suspension of the educational and teaching process in preschool institutions, primary and secondary schools until further notice (number: 03-34-12 / 20-14 of 27 March 2020)

▪ Information on the establishment of the necessary interaction-communication-information system on the relation ministry-school-parent / student for the purpose of quality information and providing support to parents and students (number: 03-34-12 / 20-13 from 27.3.2020)

▪ Guidelines for the evaluation and assessment of students in primary and secondary schools in the Canton of Central Bosnia (number: 03-34-12 / 20-15 from 6.4.2020)

▪ Information on enrollment of children in the first grade of primary school for the school year 2020/2021. year (number: 03-34-12 / 20-16 from 6.4.2020)

▪ Instructions for the actions of schools in the process of receiving and recording information and communication technology - ICT equipment (number: 03-34-12 / 20-17 from 7.4.2020)

▪ Instructions for starting classes in the school year 2020/2021. year for all primary and secondary schools in the area of SBK (number: 03-34-12 / 2020-25 from 2.9.2020).

▪ Amendments to the Instructions for the start of classes in the school year 2020/2021. year for all primary and secondary schools in the KSF (number: 03-34-12 / 2020-27 from 15.10.2020)

▪ Decision on the suspension of the regular teaching process in secondary schools and instructions for the organization and conduct of classes with the use of information and communication technologies for secondary schools in the KSF (number: 03-34-12 / 20-30 of 22.3.2021)

▪ Information on enrollment of children in the first grade of primary school for the school year 2021/2022. year (number: 03-34-12 / 20-16-2 from April 1, 2021)

▪ Information on the organization and teaching with the use of information and communication technologies in case of justified need to interrupt the regular teaching process (number: 03-34-12 / 2020-31 from 7.4.2021)

▪ Decision on initiating the regular teaching process in the final grades of secondary schools in accordance with the Secondary Education Act (number: 03-34-12 / 20-32 of 22 April 2021)

▪ Decision on initiating the regular teaching process in secondary schools in accordance with the Secondary Education Act (number: 03-34-12 / 20-33 of 6 May 2021)

▪ Amendments to the Instructions for the start of classes in the school year 2020/2021. year for all primary and secondary schools in the KSF (number: 03-34-12 / 2020-34 from 9.6.2020)

▪ Temporary approval for conducting online classes at higher education institutions in the conditions of the coronavirus pandemic (01-14-sl / 20-20 from 2.4.2020)

▪ Instruction on the continuation of the work of higher education institutions and the implementation of examinations and compliance with hygienic and epidemiological measures (03-34-390 / 20-6 of 14 May 2020)

Making decisions on the manner of realization of teaching, as well as the date of the beginning of teaching in the school year 2020/2021. year, was preceded by dedicated work of both the crisis headquarters (Federal and cantonal) of the Ministry of Health and the Ministry of Education. At the initiative of the Federal Ministry of Education and Science, joint meetings were held and the most important guidelines and instructions on how to organize classes were sent. Based on the above, the cantonal ministries of education have made a decision on the date of the beginning of classes in primary and secondary schools and the modalities of the organization, as well as regulations and instructions for schools that will enable the implementation of decisions. All cantons have opted for a combination of classroom teaching and online teaching. However, as the epidemiological situation in the Federation of BiH worsened in October 2020, certain cantons revised the decisions originally made on how to organize classes. The Federal Ministry of Education and Science will continue to coordinate activities in this area, respecting constitutional competencies, all with the aim of harmonizing and unifying the conditions of education in the Federation of BiH, according to the response of the Federal Ministry of Education and Science.

The budget of this ministry has been significantly reduced in the past year.

Classes for primary and secondary school students in the 2020/2021 school year in Sarajevo Canton, Tuzla Canton and Bosnia-Podrinje Canton began on September 1, and in other cantons on September 7.

In the Republika Srpska, classes began on September 1, and in the Brcko District on September 7.

There was no increase in the education budget in any of the administrative units during the pandemic, and in several of them these funds were reduced.

Appendix 2: Strategic framework of the EU

The EU has identified media and information literacy (MIL) as a key competence for lifelong learning and has developed a "European Framework of Reference" with clear recommendations for EU governments (2006/962 / EC) on how to ensure these competences. The Recommendation identifies 8 key competences that are fundamental to every individual in a knowledge-based society, including a digital competence relating to the reliable and critical use of information and communication technologies for work, education, leisure and communication (2006/962 / EC); in other words, the MFA.

Following are the eight key competences:

1. Communication in the mother tongue: the ability to express and interpret concepts, thoughts, feelings, facts and opinions orally and in writing;

2. Communication in a foreign language: as mentioned above, but includes mediation skills (ie summarizing, paraphrasing, interpreting or translating) and intercultural understanding;
3. Mathematical, scientific and technological competence: good mastery of computing, understanding of the world of nature and the ability to apply knowledge and technology to perceived human needs (such as medicine, transport or communication);
4. Digital competence: reliable and critical use of information and communication technology for work, leisure and communication;
5. Learning to learn: the ability to effectively manage one's own learning, either individually or in groups;
6. Social and civic competences: the ability to participate effectively and constructively in social and working life and to participate actively and democratically, especially in increasingly diverse societies;
7. Sense of initiative and entrepreneurship: the ability to turn ideas into action through creativity, innovation and risk-taking, as well as the ability to plan and manage projects; and
8. Cultural awareness and expression: the ability to appreciate the creative importance of ideas, experiences and emotions in a range of media such as music, literature and the visual and performing arts.

Through these communications, EU governments are invited to make the teaching and learning of key competences part of their lifelong learning strategies.

The Council Conclusions of 30 May 2016 on developing media literacy and critical thinking through education and training in the EU draws attention to the many benefits and opportunities offered by the Internet and social media, but also highlights the potential threats and dangers they may pose (2016). / C 212/05). This communication emphasizes the importance of education and training in helping young people to become media literate and responsible citizens of the future and in preventing violent extremism and radicalization (2016 / C 212/05). Emphasis that:

1. A key element of education and training is the instillation of fundamental values in young people, while promoting their capacity for independent and critical thinking;
2. Lecturers and training staff should be supported so that controversial issues can be openly discussed in the classroom, and staff can keep up with the knowledge and skills needed to access, interpret, produce and use media content responsibly - by sharing good practices media literacy and critical thinking should be further promoted in the context of the ET2020 strategic framework;
3. In order to promote media literacy and critical thinking, EU funds and programs, such as Erasmus +, the Connecting Europe Facility, the European Structural and Investment Funds, Horizon 2020, Creative Europe and Europe for Citizens, should be used by EU countries. and the European Commission.

In its report "EU Cooperation in Education and Training - Priorities 2016-2020" the EU reviews progress in implementing the Strategic Framework for European Cooperation in Education and Training (ET 2020) in the medium term and sets new priorities for 2016-2020, of which Distance learning is also important (2015 / C 417/04). This 2015 Joint Report, prepared by the Council and the European Commission, identifies priority areas for the period 2016-2020, including "relevant and high-quality skills and competences, focusing on outcomes for employability, innovation and active citizenship" achieved through, inter alia, the development of "Digital Competence" (2015 / C 417/04).

The Communication of the Commission "Opening up education: innovative teaching and learning for all through new technologies and open educational resources" is directly related to online teaching. The Communication proposes activities at EU level and at individual national levels, in particular:

The communication states that EU education is not in step with the digital society, and that the economy and technology provide an opportunity to increase efficiency and equity in education. They emphasize that Erasmus +, Horizon 2020 and other EU funding programs provide incentives and conditions that encourage partnerships and projects, in particular to address the following issues:

- Support to education institutions, teachers and students to acquire digital skills and learning methods;
- Support the development and availability of open education resources;
- Connecting classrooms and installing digital devides and contents; and
- Mobilization of all actors (teachers, students, families, business and social partners) for application of role of digital technologies in education institutions (COM/2013/0654 final).

The communication states that EU education is not in step with the digital society, and that the economy and technology provide an opportunity to increase efficiency and equity in education. They emphasize that Erasmus +, Horizon 2020 and other EU funding programs provide incentives and conditions that encourage partnerships and projects, in particular to address the following issues:

a) Open learning environments - opportunities for innovation:

- education and training institutions need to revise their organizational strategies to encourage innovative learning practices;
- teachers should be able to acquire good pedagogical digital competences, for example, through strong communities of exchange of practices as well as rewards for new teaching methods;
- students expect to acquire digital skills and competencies and that their skills will be easily certified and recognized for further learning or work.

b) Open educational resources - opportunities to use open knowledge for better quality and access:

- high-quality open educational resources must become more visible and accessible to all citizens;
- copyright issues should be more transparent

c) Connectivity and innovation - partnerships for infrastructure, new products and services, and the exchange and use of information:

- better internet connection infrastructure is still needed in some EU countries.

d) Joint effort to seize the opportunities provided by the digital revolution:

- An integrated approach is needed to better understand the opportunities ahead, ie providing access to digital content, information and communication technology

infrastructure, the right level of digital skills and the right organizational strategies that together can generate an educational offer that can support and sustain innovation.

The Communication on "School Development and Excellent Teaching for a Great Start in Life" identified the challenges that schools and teaching face in the EU, as well as ways in which the EU can support EU countries in reforming their school systems to meet these challenges (COM (2017) 248 final). In their view, schools have a key role to play in lifelong learning and therefore action is needed to improve the quality and performance of school education. Almost all EU countries face several key challenges:

1. weaknesses in the development of competencies;
2. school education does not play its full role in promoting equality and social justice; and
3. the effect of the pace of technological and digital change on economies and societies.

Three areas are identified where EU support can help address the challenges:

1. Development of better and inclusive schools, including:
   - supporing all students in development of their competences;
   - improving learning by opening up to new forms of cooperation, for example, with local services, local community organizations, businesses and universities to help young people prepare for future employment and study;
   - enhancing approach and quality of education and up-bringing in early childhood

2. Supporting teachers and school managamenet in teaching and learning, including:
   - make teacher profession more likable;
   - change views on teacher profession to a career where teachers work together;
   - support school management.

3. Become more efficient and fairer in running the school education system:
   - adequate investing in school resources;
   - combine autonomy and ensure quality.

Addressing EU countries, the Commission stated that it would support digital skills for all, in particular by "updating the Digital Education Action Plan and presenting a vision for improving digital literacy, skills and capacity at all levels of education and training and for all levels of digital skills (from low to advanced). Based on lessons learned from the COVID-19 crisis in areas such as online learning, the Action Plan aims to support the development of stronger digital competences and organizational skills in education and training systems (including distance learning) while fully exploiting the potential of new technology, data, content, tools and platforms to make education and training appropriate for the digital age."(European Commission, 2020).

Sources:

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- "2015 Joint Report of the Council and the Commission on the implementation of the strategic framework for European cooperation in education and training (ET 2020): New priorities for European cooperation in education and training (2015/C 417/04)", *Official Journal of the*

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- "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions — Opening up education: innovative teaching and learning for all through new technologies and open educational resources (COM(2013) 654 final)", *Official Journal of the European Union*, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum%3A4301337

- "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions —School development and excellent teaching for a great start in life (COM(2017) 248 final)", *Official Journal of the European Union*, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52017DC0248

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- "COUNCIL CONCLUSIONS of 30 May 2016 on developing media literacy and critical thinking through education and training (2016/C 212/05)", *Official Journal of the European Union*, available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52016XG0614%2801%29

Appendix 3: E-learning within BiH legal framework on elementary and secondary education

Administrative Unit	Law	Articles	Official Gazzete	
			Number	**Name**
Republic of Srpska	Law on primary education	Decree with the force of law on amendments to the law on primary education https://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mpk/PAO/Pages/Osnovno_obrazovanje.aspx Article 47 (10) If there is an emergency situation in the area of the local self-government unit, the work in the schools in the area of that local self-government unit shall be suspended while the emergency situation lasts.	44/17, 31/18, 84/19, 63/20	„Official Gazette of the Republic of Srpska"
	Law on secondary education	Article 57 (1) Educational work may also be realized as distance learning. (2) Distance learning may be organized for a regular student who is not able to attend classes and other forms of educational work due to: illness, disability, as well as the inability to travel to school due to living in remote areas. (3) Distance learning is carried out in exceptional cases at the request of parents, for each school year, at the proposal of the school, with the consent of the Minister. (4) The school decides on distance learning on the basis of available technical possibilities and means necessary for this type of education and upbringing. (5) The school keeps records on the education and upbringing of students who receive distance learning. Article 62 (6) Student enrollment may also be done electronically	74/08, 106/09 104/11 41/18 55/13 101/17	
Una-Sana Canton	Law on primary and secondary education	Article 55 The Rules of the School, as well as amendments to the Rules of the School, shall enter into force upon obtaining the consent of the Minister. Article 61 The curriculum determines the compulsory and elective subjects, their schedule by grades, the weekly number of teaching hours per subject and the total weekly and annual number of teaching hours and extracurricular activities. The curriculum determines the contents, goal and tasks of compulsory and elective subjects, as well as the performance of class, ie subject teaching in certain classes or other forms of teaching. Article 69 In order to introduce new forms and contents of work, the Ministry may declare one or more schools and departments experimental or establish an experimental school.	5/04 7/10 11/15 12/19 15/20	„Official Gazette of Una-Sana canton"

	Zakon o srednjem obrazovanju	Article 39 (Contents of curricula) (6) The secondary school may, in addition to the established curriculum, introduce new contents in the form of course teaching, optional teaching, elective teaching, new subject or other form of teaching, which may not exceed 10% of the total number of hours per week. curriculum. Article 44 (Organization of classes and duration of the lesson) (6) In teaching that takes place according to special concepts, approved by the Minister, it is possible to change the length of the lesson and combine hours without a break and carry out other organizational and methodological procedures in accordance with the provisions of that curriculum. Article 45 (Interruption of classes) (1) Classes in secondary school may not be interrupted during one semester, except in the case of natural disasters, epidemics and other particularly justified reasons, with the consent of the Minister. (2) The Minister may approve, depending on climatic or other conditions, the postponement of the beginning of classes in the first and second semester and the extension of the winter break, provided that during the school year the annual fund of teaching hours provided by the curriculum is realized. Article 46 (Extension and shortening of classes) (1) The school principal may, in exceptionally justified cases, decide to extend or shorten the duration of the class and immediately inform the Ministry. (2) The Minister may decide, in exceptionally justified circumstances, to extend or shorten the duration of an hour in some or all secondary schools.	17/12 12/19 15/20	
Posavina canton	Law on primary education	Article 37 Primary school classes are held five days a week. The primary school can teach on six working days a week, if it works in more than two shifts. Exceptionally, if exceptional circumstances so require, the school principal may decide that the duration of the lesson, daily and weekly classes may be shorter than prescribed in Article 32, or longer, in order to compensate for the teaching time. The consent to the decision under paragraphs 2 and 3 of this Article shall be given by the Minister	3/04, 4/04, 8/08, 7/12, 10/13, 10/16	„National Gazette of Posavina canton"

		Article 38 The school year begins on September 1 and ends on August 31 of the following year. The Minister decides on the existence of extraordinary circumstances that affect the beginning and end of the school year. The school year is organized by educational periods and contains 175 teaching days in a five-day working week, and 210 teaching days in a six-day working week. During the school year, students are entitled to winter, spring and summer vacations. The school year, ie the beginning and end of classes, educational periods, the number of working days and student holidays, are prescribed by a special calendar issued by the Minister no later than 30 days before the beginning of the school year.		
	Law on secondary education	Article 26 The secondary school may check the value of new educational content, forms and methods of work, and new teaching equipment according to an experimental program approved by the Minister.	3/04, 4/04, 3/08, 8/08, 4/11, 7/12, 10/13, 10/16	

Tuzla canton	Law on primary and secondary education	Article 38 (Beginning and organization of classes) (3) Exceptionally, the Minister may, for justified reasons, for all or for a particular school, make a different decision on the organization of classes and student holidays (religious holidays, weather conditions, epidemics, etc.). Article 41 (Interruption of work during the school year) (1) The Ministry may make a decision to terminate the educational work of the school due to weather conditions, epidemics or other justified reasons. (2) The Ministry may approve, depending on weather conditions and other conditions, earlier start or extension of summer and winter vacations, provided that during the school year the annual fund of teaching hours is realized and the contents provided by the curriculum are realized. Article 46 (Experimental schools) (1) For the purpose of introducing new forms and contents of work, at the proposal of the Pedagogical Institute, the Ministry may declare one or more schools to be experimental or establish an experimental school. (2) Deviations from the provisions of this Law on the application of the teaching norm, daily and weekly workload of students, the manner of evaluation and assessment of students' knowledge, education of classes and the application of the curriculum may be approved for the experimental school. (3) The establishment and operation of an experimental school and the proclamation of existing schools as experimental shall be regulated by a closer regulation issued by the Minister. Article 38 (Curriculum) (1) The curriculum of the appropriate school (hereinafter: the curriculum) determines the purpose, goals and tasks of the program, subjects, contents, duration and basic forms of the program, annual and weekly number of teaching hours, practical training , number of hours for each subject, didactic and other conditions for the implementation of the program, knowledge outcomes, content and manner of taking the Matura / final exam, and the profile and education of teachers for the implementation of the curriculum. (2) The curriculum may have a modular structure.	6/04 7/05 17/11 8/21 11/21	„Official Gazette of Tuzla canton"

		Article 43 (Beginning and organization of classes) (1) Classes in the first semester begin on the first working day in September and end on the last working day in December. (2) Winter vacation for students lasts four weeks, and summer vacation lasts from the end of classes in the second semester to the beginning of classes in the next school year. (3) Exceptionally, the Ministry may, for justified reasons, for all or for a particular school, make a different decision on the organization of classes and student holidays (religious holidays, weather conditions, epidemics, etc.). (4) The school, as a rule, organizes classes in a five-day working week. (5) The school may, within one Saturday during the month, organize additional classes, additional classes, work of sections and work of student organizations as well as compensation of classes in accordance with the decision of the Ministry. Article 45 (Student workload) (1) The school is obliged to ensure that the total workload of students with classes and other types of direct educational work may not exceed 35 hours per week, provided that during the day the student may not have more than seven hours. (2) Exceptionally, the school may burden the student with classes and other types of direct educational work with more than 35 hours per week in the case of compensation for intensive classes, based on a special decision of the Ministry. Article 46 (Annual fund of teaching hours) (1) The school is obliged to realize the annual fund of teaching hours and to realize the program contents provided by the curriculum. (2) If it is determined that the school has not achieved the annual fund of teaching hours and has implemented the program contents within the planned number of teaching days, it shall extend the teaching until the annual fund of teaching hours is realized. (3) Exceptionally, if due to objective circumstances (pandemic, epidemic, declaration of natural disaster, declaration of emergency, etc.), during the school year there was an interruption of regular work and functioning of the school, the Minister may decide to end the school year with realized a smaller fund of hours and / or teaching days than prescribed. (4) Škola koja ne ostvari predviđeni godišnji fond nastavnih časova, ne može izdati svjedodžbu o završenom razredu, odnosno obrazovanju.		
	Zakon o srednjem obrazovanju i odgoju		17/11 11/20, 8/21 11/21	

		Article 47 (Interruption of work during the school year) The Ministry may, for justified reasons, make a decision to terminate the educational work of the school due to weather conditions, epidemics or other justified reasons. Article 54 (Experimental school) (1) For the purpose of introducing new forms and contents of work, based on the study and expert opinion of the Pedagogical Institute, the Ministry may declare one or more secondary schools, one or more departments, experimental or establish an experimental school. (2) The act on the establishment of an experimental school or the act on declaring the school experimental determines the possible deviation from the provisions of this law in the application of the teaching norm, daily and weekly workload of students, manner of evaluation and assessment of students' knowledge, organization of classes and application of curriculum and program. (3) The establishment and operation of an experimental school and the proclamation of existing schools or departments as experimental shall be regulated in more detail by a regulation issued by the Minister. Article 73 (Absence from classes upon approval) (1) The school may grant students who have been declared promising or top athletes, and gifted students for certain teaching areas who have acquired the right to participate in international or national competitions, as well as in other cases, by decision of the school teachers' council. participation in competitions under the conditions determined by the rules of the school. (2) The school shall enable the students referred to in paragraph (1) of this Article to complete the appropriate grade through instructional classes, consultative classes, distance teaching and taking exams during the school year.		
Zenica Doboj canton	Law on primary education	Article 47 (Interruption of work during the school year) The Ministry may, for justified reasons, make a decision to terminate the educational work of the school due to weather conditions, epidemic or other justified reasons. Article 38 (Establishment of an experimental school)	5/04, 20/07, 9/11	„Official Gazette of Zenica Doboj canton"

		(1) In order to introduce new forms and contents of work, the Ministry may declare one or more primary schools to be experimental or establish an experimental school. (2) For the experimental school, deviations from the provisions of this Law may be approved in the application of the teaching norm, daily and weekly workload of students in regular classes, assessment methods, formation of classes and implementation of the Curriculum and Framework Program. (3) The establishment and operation of experimental primary schools and the proclamation of existing schools as experimental shall be regulated in more detail by a regulation issued by the Ministry.		
	Law on secondary education	Article 47 (Establishment of an experimental school) (1) In order to introduce new forms and contents of work, the Ministry may declare one or more secondary schools to be experimental or establish an experimental secondary school. (2) For an experimental high school, a decision may be made to deviate from the provisions of this Act in the application of the teaching norm, daily and weekly workload of students, teaching methods, organization of classes and application of the curriculum. (3) The establishment and operation of an experimental secondary school and the proclamation of existing schools as experimental shall be regulated by a closer regulation issued by the Ministry.	5/04, 20/07, 19/09, 9/17	
Bosansko-podrinjski kanton	Zakon o osnovnom odgoju i obrazovanju	The law is not available. Prior to the pandemic, through the Law on Primary Education and the Law on Secondary Education, no online teaching, distance learning or blended learning was recognized. In July 2020, the Cantonal Government amended the regulations and passed the Law on Amendments to the Law on Primary Education and the Law on Amendments to the Law on Secondary Education, which prescribes the possibility of conducting online classes in terms of maintenance of this type of teaching during the school year, then the possibility of extending the winter break for one week is prescribed, depending on climatic or some other reasons. The possibility of realization of online teaching, consultative-instructional teaching, distance teaching and multimedia teaching is envisaged. The law has not made any changes related to monitoring the work and assessment of students.	5/04, 6/09	„Official Gazette of Bosnia Podrinje canton"

	Law on secondary education	The law is not available. Prior to the pandemic, through the Law on Primary Education and the Law on Secondary Education, no online teaching, distance learning or blended learning was recognized. In July 2020, the Cantonal Government amended the regulations and passed the Law on Amendments to the Law on Primary Education and the Law on Amendments to the Law on Secondary Education, which prescribes the possibility of conducting online classes in terms of maintenance of this type of teaching during the school year, then the possibility of extending the winter break for one week is prescribed, depending on climatic or some other reasons. The possibility of realization of online teaching, consultative-instructional teaching, distance teaching and multimedia teaching is envisaged. The law has not made any changes related to monitoring the work and assessment of students.	10/11	
Central Bosnia canton	Law on primary education	Article 24 Educational work must not be interrupted during the semester, ie the school year, except due to natural disasters, epidemics of infectious diseases and other particularly justified reasons, which is decided by the Ministry. The Ministry may approve, depending on climatic or other conditions, the extension of winter vacation for a maximum of one working week, provided that during the school year the annual fund of teaching hours provided by the curriculum and realized program contents is realized. Article 30 In order to introduce new forms and contents of work, at the proposal of the Pedagogical Institute, the Ministry may declare one or more primary schools to be experimental or establish an experimental primary school. For the experimental school, a deviation from the provision of this law on the application of the teaching norm, daily and weekly workload of students, the method of assessment, the formation of classes and the implementation of the curriculum may be granted. The establishment and operation of experimental primary schools and the declaration of existing schools as experimental shall be regulated by a closer regulation issued by the Ministry.	11/01, 17/04	„Official Gazette of Central Bosnia canton"

		Article 18 The secondary school may organize the execution of part of the curricula outside its main headquarters, in accordance with the law and other regulations, with the consent of the Ministry. In the territory of the Canton, curricula may be implemented by schools whose headquarters are outside the Canton, in accordance with this law and other regulations and with the consent of the Ministry. Educational work referred to in paragraph 1 of this Article may be organized when there is a sufficient number of students for at least two classes. For the organization of educational work referred to in paragraphs 1 and 2 of this Article, the founder of the secondary school is obliged to obtain the prior consent of the municipality in whose territory the education is performed. Educational work referred to in paragraph 1 of this Article may begin when the Ministry determines that the conditions for work are met, in accordance with this Law.		
	Zakon o srednjoj školi	Article 25 An integral part of the curriculum of secondary education and upbringing for each type of school, group of subjects, ie subject consists of specific contents whose scope cannot exceed 20% in relation to the determined curriculum. The specific contents from the previous paragraph of this article are determined by the board of directors of the high school, based on the proposal of the founders, students, their parents, ie guardians and the teachers' council of the school, with previously obtained opinion of the Ministry. Exceptionally, in religious schools, the specific content referred to in paragraph 1 of this Article may be higher than 20% in relation to the established curriculum, but not higher than 40%.	11/01, 17/04 15/12 5/17	
		Article 37 In order to determine new forms and contents of work, the Ministry may declare one or more secondary schools to be experimental or establish an experimental secondary school. For an experimental high school, a decision may be made to deviate from the provisions of this law in the application of the teaching norm, daily and weekly workload of students in teaching hours, manner of assessing knowledge, organizing classes and applying the curriculum. The establishment and operation of an experimental high school and the proclamation of existing schools as experimental shall be regulated by a closer regulation issued by the Ministry.		

Herzegovina-Neretva canton	Law on primary education		5/00, 4/04, 5/04	„Official Gazette of Herzegovina-Neretva canton"
	Law on secondary education	Article 83 At the end of the school year or school year, students with passing grades in all subjects are issued a certificate, and students with one or more insufficient grades are issued a certificate. A school that does not implement the curriculum and program days prescribed by the curriculum cannot issue certificates to students. The school principal and the governing body are responsible for the non-implementation of the Curriculum. In case of extraordinary circumstances caused by natural and other disasters, or long-term non-teaching, at the proposal of the Ministry, the County Government makes a decision on the beginning and end of the school year, and the implementation of the curriculum and prescribed and realized number of teaching hours and days.	8/00	
West-Herzegovina canton	Law on primary education	Article 19 (Experimental Elementary School) (1) In order to determine new forms and contents of work, the Ministry may declare one or more primary schools experimental. (2) For an experimental primary school, a decision may be made to deviate from the provisions of this Act in the application of the teaching norm, daily and weekly workload of students in teaching hours, assessment methods, organization of classrooms and application of the curriculum.	6/04, 8/04, 8/08, 10/08, 14/08, 12/11	„National Gazette of West-Herzegovina canton"
	Law on secondary education	Article 25 (Experimental High School) (1) In order to determine new forms and contents of work, the Ministry may declare one or more secondary schools experimental. (2) For an experimental high school, a decision may be made to deviate from the provisions of this Act in the application of the teaching norm, daily and weekly workload of students, teaching methods, organization of classrooms and application of the curriculum.	6/04, 8/04, 8/08, 14/08, 12/11	

Sarajevo canton	Law on primary education	Article 27 (Annual school work program) (1) Work in the school during the school year is realized on the basis of the annual work program of the school (hereinafter: annual program) in accordance with the development plan of the school which is adopted in accordance with the methodology of annual school work program. (2) The annual program contains mandatory and other forms of work, as well as a report on the implementation of the annual program for the previous school year. (3) The Teachers' Council determines the proposal of the annual program on the basis of the draft prepared by the principal, and adopted by the school board. (4) If due to exceptional circumstances there is a change in the 40-hour working week referred to in Article 85, paragraph (1) of this Law, it is not necessary to carry out the procedure of making changes and amendments to the annual school work program. (5) The school, after adoption, submits the annual work program in electronic version, no later than September 30 for the current school year, one copy to the founder, or the Ministry and the competent municipal authority. Article 33 (Beginning and duration of the school year) (1) The school year begins on September 1 and ends on August 31 of the following year. (2) The school year begins on the first working day of September of the current year, and ends no later than June 30 of the following year, unless the Minister prescribes otherwise in the school calendar. (3) The school year begins and ends with the intonation of the national anthem and the raising of the flag of the state of Bosnia and Herzegovina. (4) Teaching at the school is conducted in semesters and lasts a minimum of 35 and a maximum of 37 working weeks, with the curriculum being implemented within a minimum of 33 and a maximum of 35 working weeks (5) Classes in the first and final grade of the school last, one week shorter, in relation to the classes referred to in paragraph (4) of this Article. (6) Classes in the first semester begin on the first working day in September and end, as a rule, on December 31 of the current calendar year. (7) Winter vacation for students lasts four weeks and is used as a rule after the end of the first semester.	23/17 33/17 30/19 34/20 33/21	„Official Gazette of Canton Sarajevo"

(8) Classes in the second semester shall begin after the winter break and shall end after the fulfillment of the conditions referred to in paragraphs (4) and (5) of this Article.

(9) Educational work may exceptionally last shorter than the time prescribed by paragraphs (4) and (5) of this Article and may be interrupted during the semester or school year, in case of declaring a natural disaster, natural disaster, state of imminent threat and the state of war, on which the Government makes a decision on the proposal of the Minister, as well as the decision to postpone the start of classes in the first and second semester and extend winter vacation, depending on climate or other conditions, with the annual fund of teaching hours , in accordance with Article 24, paragraph (15) of this Law.

(10) The Minister shall determine the school calendar for each school year and publish it no later than June 30 of the current year for the following school year.

(11) If the founder of the school is a religious community or church, the teaching calendar for each school year shall be adopted by the founder with the consent of the Minister.

(12) The teaching calendar shall be adopted no later than two months before the beginning of the school year. "

Article 36
(Teaching organization)
(1) The school organizes the teaching process in a five-day working week.

(2) The teaching hour in the primary school lasts 45 minutes, and in the centers 40 minutes, unless otherwise determined by the curriculum.

(3) Teaching is organized by classes, and is performed directly in the department or in a group in accordance with the curriculum.

(4) The school is obliged in the Annual Work Program, for the implementation of subject teaching, to plan four weeks of teaching in an online environment, two weeks in each semester, in accordance with the established schedule and schedule for regular classes.

(5) For students of I, II, III grade, a flexible duration of the lesson can be organized within the given daily time frame.

(6) During the week, students of I, II and III grade may have a maximum of 20 hours of all forms of educational work, provided that during the day they may not have more than four hours of regular classes.

(7) During the week, students of IV, V and VI grade may have a maximum of 25 hours of classes, provided that during the day they may not have more than five hours of regular classes.

| | | (8) During the week, students of VII, VIII and IX grades may have a maximum of 30 hours of classes, provided that during the day they may not have more than six hours of regular classes.
 (9) Exceptionally, students from 5th to 9th grade may have one hour more regular classes per week than the number of hours prescribed in paragraphs (6) and (7) of this Article, and only in the case of subjects taught in in accordance with the standards and norms for primary school are divided into groups.
 (10) The teacher is obliged to realize a trial lesson every other school year.
 (11) The school principal may, in exceptional cases, decide to extend or shorten the duration of classes, or decide to conduct classes in an online environment for up to two weeks, of which he is obliged to inform the Ministry.
 (12) The Minister may, in exceptional circumstances, decide to extend or shorten the duration of classes or to hold classes
 (13) Students may not have two hours of the same subject during one teaching day according to the schedule, unless required by the organization of work and the manner of conducting the subject.

 Article 37
 (3) Digital and other contents may be used in the implementation of teaching in the online environment, which are prepared in accordance with the criteria for the evaluation of digital and other educational contents, adopted by the Minister. | | |

	Law on secondary education	Article 41 (2) During the school year that takes place in the regular teaching process at the school, the school is obliged to plan four weeks of online classes in the annual work program, two in each semester, in accordance with the established schedule and schedule for regular classes. Article 44 (2) At the proposal of the Minister, the Government may determine, depending on climatic or other conditions, the postponement of classes in the first or second semester, the obligation to conduct classes according to a combined model or online environment, with at least 90% of the fund teaching hours provided by the curriculum. (Amendments to Article 45) (1) In Article 45, paragraph (1), after the words: "hours", the words are added: "or that teaching is realized in an online environment." (2) In paragraph (2) after the words: "hours" the words: "or make a decision to conduct classes in an online environment, up to two weeks. Article 53 (2) During the implementation of teaching in the online environment, digital and other contents may be used, which are prepared in accordance with the criteria for the evaluation of digital and other educational contents, and which are adopted by the Minister.	10/04, 34/07	
Canton 10	Zakon o osnovnom školstvu	Article 40 Elementary school can be the venue of experimental programs. More detailed provisions on the conditions, manner of work, staff and network of training rooms and experimental programs are determined by the Ministry at the proposal of teacher training colleges in the Canton or outside the Canton.	12/04, 12/08	„Official Gazette of Herzeg Bosnia canton"

	Law on secondary education	Article 44 The high school can check the value of new educational content, forms and methods of work, and new teaching equipment according to the experimental program approved by the Ministry. Article 45 The secondary school may check the value of new educational content, forms and methods of work, and new teaching equipment according to the experimental program approved by the Ministry.	12/04, 12/08	

Brcko District	[Zakon o obrazovanju u osnovnim i srednjim školama u BDBIH](#)	Article 38 (Interruption of educational work) (1) Educational work may not be interrupted during the school year. (2) Educational work may be interrupted in the event of: a) natural disasters; b) epidemic; c) infectious diseases, d) or other special reasons. (3) The decision on the termination of educational work is made by the head of the Department. (4) Lost working days are compensated during the school year. Article 44 (New forms of work) (1) In order to introduce new forms and contents of work and innovations in teaching technology, and at the proposal of professional international and domestic institutions, the Department may declare one or more schools experimental. (2) The school may, with the approval of the Department, develop new organizational forms and apply new approaches in the content and method of education and training in order to introduce useful changes in the education system. (3) The school may, with the approval of the Department, participate in projects of governmental and non-governmental organizations, which are in accordance with the educational work of the school. Article 52 (Other ways of education) (1) Education is provided at home to a student who is unable to attend classes due to disability or other serious illness. (2) A student who is placed in a health institution due to a long and severe illness shall be provided with education in a hospital, and a student who is placed in a social institution shall attend the school closest to that institution. (3) The education of students referred to in paragraphs 1 and 2 of this Article shall be regulated by the Department, at the proposal of the Pedagogical Institution. (4) If a student is unable to participate in a physical activity or perform a physical exercise in a particular subject due to health reasons, or if such an exercise could endanger his health, he is temporarily or permanently exempted from such activities. (5) The decision on the release of students referred to in paragraph 4 of this Article shall be made by the teachers' council on the recommendation of the competent health institution.	10/08, 25/08	„Official Gazette of District Brcko BiH"

Appendix 4: Detailed Methodology

The purpose of the surveys was to obtain key information on the degree of satisfaction of various aspects of the quality of distance learning and the needs of teaching staff and professional associates. Given the pandemic conditions and the efficiency of data collection, the research will be conducted online. Three different target groups have been identified, namely

(I)   Professional associates at schools who had a direct insight into the teaching implementation,
(II)   Teaching staff and
(III)   students.

A special measuring instrument was constructed for each target (sub) group - a questionnaire (Appendix 6). When it comes to students, the research will have three types of questionnaires for three groups of students:

(I)   primary school students of lower grades (IV i V grade)
(II)   primary school students of higher grades (VII, VIII i IV grades)
(III)   secondary school students

Between these three groups of students there are differences in each segment of development (cognitive, socio-emotional, physical) which is one of the reasons for creating special questionnaires for each group. In addition, in the previous year and a half, there were some differences between primary and secondary school students when it comes to teaching, which is also one of the factors that requires a different approach to testing.

The method for collecting data during the research was defined by the survey technique and the questionnaire instrument, which was distributed to the target population in the form of a questionnaire via an online link that will be accessible to teaching staff, professional services and administrative staff (target population).

All measuring instruments were piloted (pilot research in one (1) school based on the first level of stratification). After the pilot, all instruments were reviewed and finalized.

The surveys are anonymous, and in order to reduce the possibility of revealing identities that could affect the sincerity of the answers of professional associates, teachers and students, the collected demographic indicators are related to basic information, such as age and scientific field in which lecturers teach.

The sampling process is defined as a stratified multi-phase random sample that defines the schools to which the survey questionnaire will be distributed.

Multiphase stratification in this study involves three levels of stratification, namely

(I)   *first, according to the administrative and political* organization of Bosnia and Herzegovina on the three strata of the entities of the Federation of Bosnia and Herzegovina and the Republika Srpska and the Brčko District,
(II)   then within each stratum (Brčko District - one (1) region) stratification is performed based on the regions: Republika Srpska (three regions - West (Banja Luka), South (Trebinje) and Northeast (Bijeljina), Federation of BiH Canton: Una-Sana Canton, Posavina Canton, Tuzla Canton, Zenica-Doboj Canton, Bosnia-Podrinje Canton,

Central Bosnia Canton, Herzegovina-Neretva Canton, West Herzegovina Canton, Sarajevo Canton, Canton 10).

(III) the third stratification will be performed on the basis of urban-rural categorization of schools that have the possibility to be selected in the sample, which primarily refers to primary schools.

Schools chosen in random sampling:

BANJA LUKA Region - RS
Petar P. Njegoš, Bulevar Vojvode S.S. 16 A, B.Luka
Branko Radičević, Bulevar Vojvode S.S. 116, B.Luka
Đura Jakšić, Subotička bb, Šargovac, B.Luka
Liješće, Liješća bb,Brod
Mladen Stojanović, G.Podgradci bb, G.Podgradci
Georgios A. Papandreu, Aleksandrovac bb, Aleksandrovac
Petar P. Njegoš, Busnovi bb, Busnovi
Vuk Karadžić, Sitneši bb, Sitneši
Nikola Tesla, Cara Lazara bb, Prnjavor
BIJELJINA Region - RS
Petar P. Njegoš, Brđani bb, Boljanić
Torod Dokić, Kalenderovci bb, Kalenderovci
Sveti Sava, Svetog Save 26, Bijeljina
Sutjeska - Modriča, Maksima Gorkog 2, Modriča
Filip Višnjić, Donja Trnova bb, Ugljevik
Medicinska škola, Pop LJubina103, Doboj
Ekonomska škola , Račvanska 96, Bijeljina
SŠC "Petar Kočić", Vuka Karadžića 69, Zvornik
TREBINJE Region - RS
Petar P. Njegoš, Draže Mihajlovića 38, I.Ilidža
Sv. Vasilije Ostroški, Gorički put bb, Gorica
Veselin Masleša, Karađorđeva bb, Foča
SŠC"Aleksa Šantić", Petra Samardžića bb, Nevesinje
SARAJEVO Canton - FBiH
Četvrta osnovna škola - Ilidža, Put Famosa 33
OŠ " 6.mart " Hadžići, Anđelka Lažetića 5
OŠ "Safvet beg Bašagić", Gimnazijska 1
OŠ "Fatima Gunić", Nerkeza Smailagića 18
OŠ "Skender Kulenović", Bulevar Mimar Sinana bb
Gimnazija Obala, Obala Kulina bana 3
Srednja građevinsko geodetska škola, Franca Lehara 5

Srednjoškolski centar Vogošća, Jošanička 119
TUZLA CANTON - FBiH
JU OŠ "Seona" Aljkovići, Banovići
JU OŠ "Jala" Tuzla, Muharema Fizovića 2 Tuzla
JU OŠ "Šerići" Šerići, Živinice
JU OŠ "Hamdija Kreševljaković" Kamberi, Gradačac
JU OŠ "Breške" Breške, Tuzla
JU OŠ "Miričina" Miričina, Gračanica
JU OŠ "Mejdan" Tuzla, Muftije ef Kurta bb Tuzla
JU Mješovita srednja škola „Hasan Kikić" Gradačac, Sarajevska bb
JU Mješovita srednja saobraćajna škola Tuzla, Bosne Srebrene 6
JU Turističko-ugostiteljska škola Tuzla, Muhameda Hevaija Uskufija 3
CENTRAL BOSNIA CANTON - FBiH
Osnovna škola "Kiseljak", Josipa bana Jelačića 42/A
Osnovna škola "fra Marijan Šunjić", Stojkovići
Osnovna škola "Mehurići", MehurićI bb
Osnovna škola "Dubravica", Preočica, Preočica bb
Mješovita srednja škola Bugojno, Zlatnih Ljiljana bb
HERZEGOVINA NERETVA CANTON - FBiH
O.Š. Ilije Jakovljevića Ante Starčevića bb 88 000 Mostar
JU O.Š.Suljo Čilić - Jablanica Bokulja 28 88 420 Jablanica
O.Š. Omer Maksumić-Podveležje-88 206 Podveležje
O.Š. Antuna Branka Šimića (I) Kraljice Katarine 38 88 000 Mostar
O.Š. Čerin Čitluk, Čerin bb 88 265 Čerin
Srednja strojarska škola Fausta Vrančića Mostar Kralja Zvonimira 24 88000 Mostar
Srednja škola Stolac Don Lazara Lazarevića 88360 Stolac
BOSNIA PODRINJE CANTON - FBiH
Osnovna škola „Husein ef. Đozo" Goražde
Mješovita srednja škola „Enver Pozderović"
CANTON 10 - FBiH
OŠ "Ivan Goran Kovačić", Livno
Srednja strukovna škola, Tomislavgrad
WEST-HERZEGOVINA CANTON - FBiH
Osnovna škola Marka Marulića Ljubuški
Srednja škola Antuna Branka Šimića, GRUDE
ZENICA-DOBOJ CANTON - FBiH
Osnovna škola Alija Nametak, Zenica
Osnovna škola Hasan Kikić, Zenica
Osnovna škola Žepče

Osnovna škola "Prva osnovna škola"; Maglaj
Gimnazija Rizah Odžečkić, Zavidovići
Mješovita Srednja Škola, Adolfa Goldbergera, Zenica
UNA-SANA CANTON - FBiH
U OŠ "HARMANI I", BIHAĆ
OŠ "ĆORALIĆI", CAZIN
OŠ "SEAD ĆEHIĆ", VELIKA KLADUŠA
OŠ "HASAN KIKIĆ", SANSKI MOST
JU "Mješovita elektrotehnička i drvoprerađivačka srednja škola", BIHAĆ
MSŠ "Hasan Musić", BUŽIM
POSAVINA CANTON KANTON - FBiH
Osnovna škola Orašje
Srednja škola Pere Zečevića, Odžak
DISTRICT BRČKO - FBiH
JU Četvrta osnovna škola Brčko distrikt BiH
Ekonomska škola, Brčko

INTERVIEW PROTOCOL WITH REPRESENTATIVES OF COMPETENT MINISTRIES OF EDUCATION / INSTITUTIONS

Protocol for interviews conducted by UNICEF as part of two surveys: "Assessment of the quality of distance education in primary and secondary schools in BiH" and "Assessment of the needs of teachers in distance education in primary and secondary schools in BiH"

Thank you for participating.

We are conducting this interview in order to obtain information on distance education in primary and secondary education in Bosnia and Herzegovina, where we are particularly interested in its quality, the needs of teaching staff, and how to improve it. The purpose of our conversation today is to hear about your experience and thinking about this topic. Your contribution will greatly help us to understand and summarize data on existing activities, practices, as well as shortcomings of distance learning in Bosnia and Herzegovina.

All your comments are strictly confidential and you will not be identified in any way in any report. [NOTE: Write down the name, position and full name of the institution]

1. How do you generally assess distance learning in the past period in the administrative unit (canton, entity) in which you work? What were the positive things and what were the disadvantages?

    a. How would you assess the pedagogical and technical competence of human resources for this type of education?
    b. How do you assess the level of coordination in the education system during the implementation of e-learning? Did all schools receive adequate information and instructions on how to conduct classes?

2. Please could you share with us the documents, instructions, regulations that you think could contribute to this study? Are these existing norms sufficient or is it necessary to define this area in more detail in the new circumstances?

3. Regarding the possible adjustment of the legal, financial and administrative framework for distance learning or blended learning, is and what - in your opinion - needs to be applied / adapted?

    a. In your opinion, were schools capable at the time of the pandemic to use and used EU tools for self-evaluation? Did schools use SELFIE?
    b. In your opinion, does the existing legal framework allow for distance learning and blended learning, or should it be further adapted? In which segment?
    c. In your opinion, with regard to the existing financial framework, should special and / or additional resources be planned for distance learning and blended learning? What amount / percentage of increase is in question? How important was public procurement at the time of the pandemic, did you have any problems when it comes to procuring equipment, internet / connections, platforms?

d. In your opinion, was the existing administrative framework satisfactory at the time of the pandemic (development of human resources in ministries / PPZ / schools - with emphasis on teachers)?

4. Are there measures and policies in the past and now that should facilitate distance learning?
   a. Was there additional training for teaching staff? If so, how was the training organized? Who developed and implemented the trainings? Were they paid? How long did it take? What trainings do you think were the most useful?
   b. Have the online platforms used been defined / selected? Which online tools are most commonly used? Were these tools clearly defined by the competent educational institutions or could the teaching staff choose the tools voluntarily? Were the platforms / devices paid or were they free?
   c. Were there any additional financial items and budgets for distance learning during the pandemic?

5. To the best of your knowledge, how have students with disabilities and members of vulnerable groups been involved in distance learning?

6. Do you have indicators on the impact of distance learning and blended learning in terms of the implementation of curricula and the achievement of planned learning outcomes?

7. In your opinion, has and to what extent there has been the use of modern didactic approaches in distance learning and blended learning?

8. To your knowledge, what was the situation with the performance and quality of practical classes?

9. Do you think that certain forms of distance learning should be maintained in the future, regardless of epidemiological circumstances? If so, which forms of distance learning and to what extent?

10. In the context of distance learning, what do you think are the main needs of teaching staff that need to be taken into account in the future?

   a. What are the needs of teaching staff in terms of methodological approaches to distance learning and creating digital content for successful distance learning?

11. What measures do you propose in the future, in terms of distance learning and blended learning?

[NOTE: Ask the representatives of the Ministries for information on budget allocations for the education sector for 2019/2020 and 2020/2021]

Thank you again for participating in this conversation!

PROTOCOL OF INTERVIEWS WITH EXPERTS IN THE FIELD OF EDUCATION AND CIVIL SOCIETY ORGANIZATIONS

Protocol for interviews conducted by UNICEF as part of two surveys: "Assessment of the quality of distance education in primary and secondary schools in BiH" and "Assessment of the needs of teachers in distance education in primary and secondary schools in BiH"

Thank you for participating.

We are conducting this interview in order to obtain information on distance education in primary and secondary education in Bosnia and Herzegovina, where we are particularly interested in its quality, the needs of teaching staff, and how to improve it. The purpose of our conversation today is to hear about your experience and thinking about this topic. Your contribution will greatly help us to understand and summarize data on existing activities, practices, as well as shortcomings of distance learning in Bosnia and Herzegovina.

All your comments are strictly confidential and you will not be identified in any way in any report.

[NOTE: Write the name, position and full name of the institution / organization]

1. How do you generally assess distance learning in the past period in BiH as well as in the area of the administrative unit (canton, entity) in which you work? What were the positive things and what were the disadvantages?
   a) How do you assess the basic technical capacity of schools (eg computers, network quality, etc.) for distance education?
   b) How do you assess the pedagogical and technical competence of human resources for this type of education?
   c) How do you assess the level of coordination in the education system during the implementation of distance learning? Did all schools receive adequate information and instructions on how to conduct classes?

2. Are these existing norms sufficient or is it necessary to define this area in more detail in the new circumstances?

3. Regarding the possible adjustment of the legal, financial and administrative framework for distance learning or blended learning, is and what - in your opinion - needs to be applied / adapted?

   a. In your opinion, were schools capable at the time of the pandemic to use and used EU tools for self-evaluation? Did schools use SELFIE?
   b. In your opinion, does the existing legal framework allow for distance learning and blended learning, or should it be further adapted? In which segment?
   c. In your opinion, with regard to the existing financial framework, should special and / or additional resources be planned for distance learning and blended learning? What amount / percentage of increase is in question? How important was public procurement at the time of the pandemic, did you have any problems when it comes to procuring equipment, internet / connections, platforms?
   d. In your opinion, was the existing administrative framework satisfactory at the time of the pandemic (development of human resources in ministries / PPZ / schools - with emphasis on teachers)?

4. Are there measures and policies in the past and now that should facilitate distance learning?
   a. Was there additional training for teaching staff? If so, how was the training organized? Who developed and implemented the trainings? Were they paid? How long did it take? What trainings do you think were the most useful?
   b. Have the online platforms used been defined / selected? Which online tools are most commonly used? Were these tools clearly defined by the competent educational institutions or could the teaching staff choose the tools voluntarily? Were the platforms / devices paid or were they free?

5. Based on your knowledge, how have students with disabilities and members of vulnerable groups been involved in distance learning?

6. Based on your knowledge, how were students with disabilities and members of vulnerable groups involved in distance learning?

7. In your opinion, has and to what extent there has been the use of modern didactic approaches in distance learning and blended learning?

8. To your knowledge, what was the situation with the performance and quality of practical classes?

9. Do you think that certain forms of distance learning should be maintained in the future, regardless of epidemiological circumstances? If so, which forms of distance learning and to what extent?

10. In the context of distance learning, what do you think are the main needs of teaching staff that need to be taken into account in the future?
   a) To your knowledge, what are the needs of schools and teaching staff in terms of ICT equipment, networking, training in the use of ICT equipment and applications, for the successful implementation of distance learning?
   b) To your knowledge, what are the needs of teaching staff in terms of methodological approaches to distance learning and creating digital content for successful distance learning?

11. Which measures do you propose in the future for delivery of e-learning and blended learning?

Thank you again for participating in this conversation!

PROTOCOL OF INTERVIEWS WITH EMPLOYEES 'REPRESENTATIVES INCLUDED IN THE VOCATIONAL EDUCATION AND TRAINING SYSTEM

Protocol for interviews conducted by UNICEF as part of two surveys: "Assessment of the quality of distance education in primary and secondary schools in BiH" and "Assessment of the needs of teachers in distance education in primary and secondary schools in BiH"

Thank you for participating.

We are conducting this interview in order to obtain information on distance education in primary and secondary education in Bosnia and Herzegovina, where we are particularly interested in its quality, the needs of teaching staff, and how to improve it. The purpose of our conversation today is to hear about your experience and thinking about this topic. Your contribution will greatly help us to understand and summarize data on existing activities, practices, as well as shortcomings of distance learning in Bosnia and Herzegovina.

All your comments are strictly confidential and you will not be identified in any way in any report.

[NOTE: Write down the name, position and full name of the company]

1. How do you generally assess the organization of vocational education and training at a distance in the past period in your company? Have you noticed any positive things? What were the disadvantages?

    a) Did you organize training in your workshops at the time of "closing"?
    b) In the past school year, how much was online training, and how much in workshops
    c) How do you assess the basic technical capacity of your company and the schools you work with (eg computers, network quality, etc.) for vocational education and distance learning?
    d) How do you assess the level of cooperation and coordination with schools in the implementation of vocational education and distance learning? distance learning? Did your company and the schools you work with receive adequate information and instructions on how to teach?
    e) How do you assess the pedagogical and technical competence of your company's human resources for this type of education and training in your company?

2. Is there legislation governing distance education within the administrative unit to which you belong? Please could you share with us the documents, instructions, regulations that you think could contribute to this study? Are the existing norms sufficient or is it necessary to define this area in more detail in the new circumstances?
3. Are there mechanisms in the past and now that would facilitate the implementation of distance education?

a) Was there additional training for your staff for online training? If so, who developed and implemented the trainings? Did you have to pay for them or were they free? How long did it take? What trainings do you think were the most useful?

b) Have the online platforms used been defined / selected? Which online tools are most commonly used? Were these tools clearly defined by the competent educational institutions or could the teaching staff choose the tools voluntarily? Were the platforms / devices paid or were they free?

c) During the pandemic, were there additional financial items and budgets for distance learning?

4. Do you have indicators on the impact of distance learning and blended learning in terms of the implementation of curricula and the achievement of planned learning outcomes?

a) To your knowledge, what was the situation with the performance and quality of practical classes?

5. Do you think that certain forms of distance learning should be maintained in the future, regardless of epidemiological circumstances? If so, which forms of distance learning and to what extent?

6. What measures do you propose in the future, in terms of distance education and training?

Thank you again for participating in this conversation!

Appendix 6: Surveys

FOLDER WHERE ALL SURVEYS ARE STORED
https://drive.google.com/drive/folders/1bTofw7SMXWnT38fGh_12J18KkitYm2QV?usp=sharing

U FOLDER-u (GOOGLE DRIVE):

- QUESTIONNAIRE FOR TEACHERS
- QUESTIONNAIRE FOR STUDENTS (4-5 GRADES) PRIMARY SCHOOL
- QUESTIONNAIRE FOR STUDENTS (7-9 GRADES) PRIMARY SCHOOL
- QUESTIONNAIRE FOR STUDENTS (2-4 GRADES) SECONDARY SCHOOL
- QUESTIONNAIRE FOR PROFESSIONAL STAFF