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THE IMPACT OF COVID-19 ON EDUCATION IN POLAND: CHALLENGES RELATED TO DISTANCE LEARNING

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Abstract

The spread of COVID-19 all over the world triggered major changes in the organization of the education in many countries. Governments have adopted various solutions to reduce the disruption caused to education. This article, which is based on survey research (N=246) conducted among teachers in various types of schools in Poland, provides an analysis of the solutions in the field of distance learning and the organization of learning process during lockdown. The results show that teachers encountered a number of difficulties in distance learning. They concerned, among others: lack of access among certain students to computers, insufficient competences of teachers to teach remotely, work organization, and the fact that students were bored with this learning form. The advantages included, among others: increasing digital competences and developing new forms of assessing students' knowledge.

Key words

COVID-19 risk impact • education • e-learning • school • Poland

Introduction

People have been facing epidemic threats since time immemorial. Due to current global and regional relations, the SARS-CoV-19 pandemic has significantly affected the way many countries all over the world organize their economic and social life. The ongoing debate on the effects of the pandemic

is dominated by a view that the previous organization of economic life, production and distribution of goods, and development of services will require new organizational, manufacturing, and technological solutions. Preliminary research and reports are confirmed by forecasts of financial and economic institutions showing a drop in production in the industrial, agricultural, and service

sectors in Q2 and Q3 2020 in the world (IMF, 2020; OECD, 2020a; Zaid Alsafi et al., 2020). The pandemic particularly affected the service sector, including tourism, catering, and transport due to temporary restrictions in the movement of people (UNWTO, 2020).

As for COVID-19 impact models concerning individual sectors of the economy, educational services are said to feature the lowest risk level (Collins et al., 2020; IMF, 2020). However, the SARS-CoV-19 pandemic, due to its global reach and limitations related to lockdown, influenced various aspects of the educational process of children, youth and adults. According to the OECD Report (2020a), schools were closed for a period from 2.5 to 4 months in most countries around the world. The limitations on access to education affected nearly 1.5 billion students in 188 countries in the world. Moreover, in some countries, the pandemic changed the schedule of external exams and enrolment at high schools and universities.

The lockdown caused by COVID-19 was a test of domestic educational systems. It revealed their defects and showed whether they are able to function in extreme conditions. Preliminary reports on the functioning of schools in the period of the pandemic show that the closure of educational institutions covered the whole country (e.g. China, Italy, Japan, South Korea, V4 Group countries) or particular regions (e.g. in France, Portugal, Spain). In most countries, the adjustment measures of the education system to the new realities consisted, among others, in the following: (1) providing trainings for school headmasters and teachers preparing for remote work, (2) implementing online classes for pupils and students, and (3) appointing and training task forces in the form of advisers and teachers in order to support parents, students, and teachers (OECD, 2020a; *Raport MEN...*, 2020). At the same time, the pandemic gave an impulse to develop alternative educational opportunities using new information technologies (Dawadi et al., 2020; Radha et al., 2020; Soni, 2020). This has been observed in China, which was the first country

to be affected by COVID-19. The country made it possible for a considerable part of its students to study online (Wunong et al., 2020).

Poland was one of the first countries in the EU to introduce lockdown. It took place 8 days after the first Pole was diagnosed with SARS-CoV-2. Schools were closed on 5 March 2020, and some educational institutions (e.g. kindergartens, primary schools, school educational centres) carried out only care-related activities until 12 March. Substituting the traditional classes with distance learning was a great challenge in terms of logistics, as well as technical and didactic aspects. It affected over 24,500 schools which were open in the school year 2019/2020 in our country. These were attended by over 3 million students, including 1.5 million students in the case of various kinds of post-primary schools (*Oświata...*, 2019).

The purpose of this study is to learn about teachers' opinions on measures taken by the state (educational policy) in the scope of obligatory distance learning during the school closure due to the COVID-19 pandemic in Poland.

The aim of the study was to identify the impact of SARS-CoV-19 on organizing education and distance learning in Poland. Detailed objectives were as follows: (1) – identification of the strategy of the Ministry of National Education (MEN) regarding the organization of educational services to the conditions permitted under epidemiological restrictions; (2) – identification of limitations in the scope of organization of distance learning according to teachers' opinion and (3) learning about the opinions of teachers regarding the impact of distance learning on the educational process.

Literature review

The COVID-19 pandemic contributed to the mass integration of e-learning and distance learning into school practices. The term 'e-learning' has many meanings. It is usually defined as supporting the educational

process with the use of computer devices (smartphones, tablets) and the Internet. The literature distinguishes three approaches to the understanding of the essence of e-learning:

- as a concept of teaching (e-teaching) carried out by a teacher – moderator in a virtual class, with the possibility of synchronous and asynchronous communication and subject to the monitoring of learning results using an educational platform (or training),
- as a concept of hybrid education (blended learning), the teacher is a moderator in virtual classes and meetings in actual classes, and the lessons are supplemented by online learning,
- as a concept of online education, without the participation of a teacher – moderator (i.e. self-education) featuring certain elements of communication in a group or without it (Kubiak, 2002; Noor-Ul-Amin, 2013; Sharples et al., 2016).

A distinctive feature of a classic e-learning model involves breaking up with unity between the time and place of education. This process is supported by electronic media and a remote learning platform, whereas the communication between individual participants is bidirectional (e.g. through videoconferences and online conferences) in real time.

Distance learning (also called d-learning) is a type of education through intermediation and assistance of e-mail, and currently with the use of modern communication technologies, without any direct communication between the student and the teacher. Communication, i.e. a dialogue between the listener and the teacher, is possible, however, it is not required for the 'here and now' to be concurrent in this case. Some researchers define distance (remote) learning as a method of conducting a didactic process under conditions where the teachers and pupils (students) are away from each other (Kubiak, 2002; Waszek, 2010).

At present, e-learning and distance learning are widely promoted and supported by various bodies (political, economic) in the EU and

other countries. They believe that e-learning methods will make it possible to standardize learning evaluation systems and reduce the costs (European Commission, 2017). The implementation of these forms in practice and their propagation requires the adoption of appropriate legal, organizational and psychological solutions. It also involves significant financial expenditure related to the purchase of equipment (e.g. laptops, palmtops, tablets, etc.) and Internet access. According to the EC report, equipping schools with new technologies is systematically increasing in EU member states (European Commission, 2013, 2017). Before the pandemic, a relatively small percentage of students declare that they use the Internet to study. The use of e-learning and distance learning in practice was also low. Only few teachers applied these forms for individual consultations with their students and during lessons or extracurricular classes (European Commission, 2013; *Edukacja zdalna...*, 2020). As there are no studies on the educational values of these forms of education in terms of acquisition of competencies and skills by students, teachers are not encouraged to apply them extensively (Garrison, 2011; Hibszer & Szkurłat, 2015, 2016; Laskaris et al., 2019).

When schools were closed due to COVID-19, distance learning and e-learning became the only solution to continue the teaching and learning process. The authors of the reports on the application of distance learning in the countries affected by the pandemic indicate certain limitations related to students' access to equipment. In the UK, lack of equipment was a factor that excluded about 38% of students covered by compulsory education (Edge Foundation, 2020). The situation looks similar in Germany, where some of the students were excluded from classes (Bagoly-Simó et al., 2020). This problem also occurred in Poland, in which 'merely' 59% of respondents declared that they had good conditions for online learning (*Edukacja zdalna...*, 2020). The exclusion due to equipment deficiencies not only concerned economically poorer regions, as it occurred

(although to a much lesser extent) in large urban agglomerations as well.

Another problem with distance learning is the preparation of teachers and students to this form of education. So far, research clearly shows that neither teachers nor students were prepared for this type of educational process (Wunong et al., 2020). The closure of educational institutions and postponing the date of return to in-class education will result in the loss of certain competencies among pupils and students. This fact may have long-term economic and social consequences (OECD, 2020b; UNESCO, 2020). According to the authors of the OECD Report (2020a), the closure of stationary education during lockdown will increase social inequalities and cause deficiencies in the acquisition of new skills. At the same time, due to the economic crisis, public spending on education in many countries may decrease to a significant extent.

An important problem faced by educational systems in the critical period lied in the adjustment of legal regulations to the adopted distance learning solutions. Due to the ongoing situation which precluded “face-to-face” education, a number of solutions was ad hoc in nature and the main reason they were adopted was to solve urgent problems. As a result, some of them were chaotic and incomprehensible to teachers and parents alike (Bagoly-Simó et al., 2020). In this difficult period, certain groups of students were excluded from the education system. The affected group included children with learning dysfunctions, students suffering from chronic illnesses, etc. (*Edukacja zdalna...*, 2020; Owusu-Fordjour et al., 2020).

This study aims at filling the gap in the assessment of the obligatory distance learning mode incorporated into the Polish educational system in terms of organizational, legal, and education aspects.

Methods and materials

The intended objectives were achieved on the basis of direct and indirect data collection methods, and specifically: the analysis

of literature and legal acts, reports, and conducting survey research with the use of diagnostic poll method among geography teachers.

The surveys were conducted among 246 teachers: 208 women and 38 men. Basic research was preceded by a pre-test conducted among several teachers for the purpose of verifying the questions contained in the questionnaire. The data collection took place from 3 to 25 September this year. To this end, the Google Forms questionnaire was used; the link to the questionnaire was provided to teachers all across Poland in the group ‘Geography Teachers’ on FB and via e-mails to the participants of the conference organized by Geographic Education Committee Polish Geographical Society. The questionnaire consisted of 28 questions (18 closed-ended and 10 open-ended), 9 of which concerned demographic and social characteristics of the respondents (e.g. sex, seniority as a teacher, grade of professional promotion, type of school – place of employment). The second group of questions dealt with issues related to the organization and execution of distance learning.

The collected data are presented in a graphic form using functions available in an Excel spreadsheet. The study was also based on selected statistical methods (attendance, rankings). In the case of open statements by teachers, the tagging method was used.

Education in Poland during the COVID-19 pandemic

In Poland, from 12 March to 24 March 2020, most educational institutions were subjected to temporary limitations in connection with the COVID-19 pandemic. Since 16 March, teachers were obliged to provide students with self-learning materials and assign tasks using various communication channels (electronic journal, e-mail, blogs, etc.). During this period, the Ministry of National Education (MEN) was working on legal regulations and didactic and technical solutions in order

to develop a system for a crisis situation and implement distance learning (Tab. 1).

Since 25 March this year, all schools in Poland, including special schools, mandatorily transitioned to distance learning (*Rozporządzenie MEN*, 2020). The new distance education system featured a considerable flexibility. School principals were free to decide on the manner in which distance learning was to be conducted, depending on the capacities and technical facilities at hand. This form of teaching lasted until the end of the school year, i.e. 26 June. Due to the change of the dates of the matura exams, consultations with secondary-school leavers were provided from 25 May, whereas students willing to improve their achievements were consulted from 1 June. It should be noted that after switching to distance learning, online schools implemented the education program according to the schedule as in the class system. Lessons lasted from 30-40 minutes, depending on the decision of the school headmaster.

At the same time, the Ministry of National Education carried out several projects which helped teachers conduct an effective distance educational process (Tab. 1). The Integrated Educational Platform (www.epodreczniki.pl)

provided free access to a comprehensive database with digital didactic materials for students and teachers. In total, 8.8 thousand materials were made available (*Raport MEN...*, 2020). Another action of the Ministry of National Education supporting educational processes in a crisis situation involved signing an agreement with TVP and Polish Radio for the implementation of educational programmes. They were addressed to pupils from primary and post-primary school who were not able to take part in distance learning classes from their school. The *School with TVP* project was implemented in 11 regional television centres and broadcast on 7 public television channels, as well as at vod.tvp.pl. TV lessons were provided by practitioners from different regions of Poland. In total, 1600 lessons were broadcast (*Raport MEN...*, 2020). In addition, the Ministry of National Education has issued a guide on distance learning for schools, available online on the Ministry's website (*Kształcenie...*, 2020). Another significant factor were the activities of the Ministry of National Education addressed to local governments and governing bodies of schools related to equipping schools, students, and teachers with devices enabling implementation of and participation in distance

Table 1. Activities of the Ministry of National Education supporting distance learning during COVID-19

Area of activity	Objective	Implemented projects of the Ministry of National Education
Legal	adaptation of the system to changing conditions	<ul style="list-style-type: none"> regulation on the obligatory implementation of distance learning in all types of schools, regulation on student evaluation in distance learning, regulation on changing the dates of external exams (after primary school, matura exam).
Didactic /teaching and learning/	strengthening of the digital competences of teachers and students	<ul style="list-style-type: none"> The Integrated Educational Platform (www.epodreczniki.pl), project <i>School with TVP</i>, project <i>TVP for secondary-school leavers</i>, project <i>Polish Radio Offer</i>, Distance Learning. Organizational Guide.
Organizational	providing schools, students, and teachers with the equipment necessary to carry out the educational process)	<ul style="list-style-type: none"> projects: <i>Remote School and Remote School+</i> (with a total value of PLN 367 million), access to e-learning platforms (Forms, Classrooms, Zoom), extension of the scope of electronic logbook services (Librus, Vulcan, Helion, Wizja.net, Eszkola24), additional Internet packages for students and teachers (cooperation with operators).

Source: Own study based on *Raport MEN...*(2020) and survey research.

learning. Distance learning was also supported by large technology companies (e.g. IBM Poland, Cisco) and non-governmental organizations by dividing educational materials, access to educational platforms, etc.

Results

Characteristics of respondents

Research participants came from all Polish voivodeships (NUTS). The majority of respondents teach in primary schools, others in secondary schools (Tab. 2). Respondents teach geography (54%), and other subjects. In a primary school, these are usually science and biology, and in a secondary school: science and basics of entrepreneurship (or additional professional subjects in the case of technical secondary schools). Most schools where the surveyed teachers work are situated in cities (82%), with a great deal of schools being located in large cities with over 100,000 inhabitants (44%). Rural schools account for less than one fifth of that number. The most of the respondents are teachers with a long seniority (more than 15 years) and highest teacher's careers – a chartered teacher (Tab. 2). Only 5% are contract teachers and trainees, i.e. persons with the lowest professional experience. The qualifications for

teaching geography were obtained by three-fourth of respondents as a result of completing master's degree, with about one-fourth finishing postgraduate studies.

Teacher's self-assessment of preparation for teaching through remote channels

A considerable group among the respondents – 53% – had already encountered e-learning platforms. They used them during trainings as part of vocational courses or self-education (ca. 70%), during lessons or to prepare for them (50%), as well as during extracurricular classes (ca. 29%).

However, 52% of research participants considered their remote teaching skills to be low. One out of five respondents claimed that they were not ready at all to teach remotely. Every tenth respondent admitted that they were well-prepared for it. A relatively large group (38%) argued that their preparation level was decent, but not supported by practical skills (Fig. 1).

Before the commencement of remote teaching, 30% of teachers surveyed had taken part in training courses on the use of educational platform available at school. These trainings took various forms. The largest

Table 2. Main characteristics of respondents (N = 246)

Type of school – workplace [%]		Grade of teacher's careers' [%]		Years of work as a teacher [%]		Type of locality – workplace [%]		The method of acquiring qualifications for work [%]	
Primary schools	52.8	chartered teacher	82.5	over 30 years	25.3	town above 100 thousand residents	43.9	master's degree taking 4 or 5-year	70.3
General secondary schools	36.6	appointed teacher	12.2	16-30 years	50.2	town 20-100 thousand residents	24.8	supplementary master's degree	3.3
Technical secondary schools	10.6	contract teacher	4.9	6-15 years	14.7	town below 100 thousand Residents	13.0	bachelor's degree	3.7
Sectoral vocational schools	0.0	trainee teacher	0.4	up to 5 years	9.8	Village	18.3	postgraduate studies	22.8

There are 4 levels of teacher's careers: the lowest- trainer teacher (Qualified teacher in induction phase), the highest – chartered teacher (Excellent Teachers)

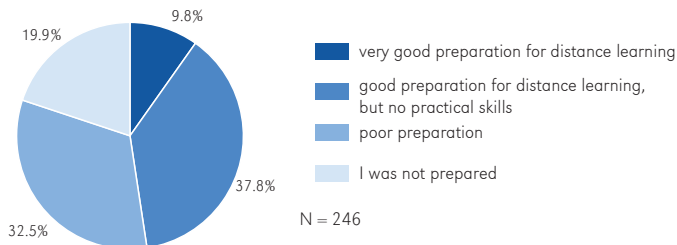


Figure 1. Self-assessment of e-learning skills

group of teachers participated in an online training of up to 2 hours (over 40%), with one-fifth of respondents taking part in an organized stationary training at their respective schools. Mixed – stationary and online trainings were organized for 13% of respondents. Unfortunately, 70% of teachers surveyed did not have an opportunity to participate in such a training.

Conducting remote education – tools used by teachers

In the opinion of almost all respondents, the introduction of remote work significantly influenced the organization of lessons as well as the methods and techniques of education. In the surveyed group of teachers, 40% indicated that remote teaching forced a complete change in the concept of previously planned lessons.

Teachers used mainly e-mail and electronic logbooks (Librus and Vulkan) to contact their students. This channel was also used

to provide students with materials and tasks for self-study. This form of remote teaching was common in primary schools.

Out of available e-learning platforms for remote education, one-third of teachers used Microsoft Teams, Google Classroom and Skype, and Zoom. A less common application was Discord and Moodle (Fig. 2). The platforms were used to conduct online classes and communicate with students in real time, send resources used to learning and evaluate student performance. According to respondents, using e-learning platforms, especially those which enabled real-time classes (with vision and sound), was one of the most advantageous solutions in the period of distance learning.

During distance learning respondents most often used websites, educational portals, and multimedia presentations. Other frequently used multimedia sources included: e-textbooks, films (including animated ones), games, quizzes, together with interactive maps and geoportals.

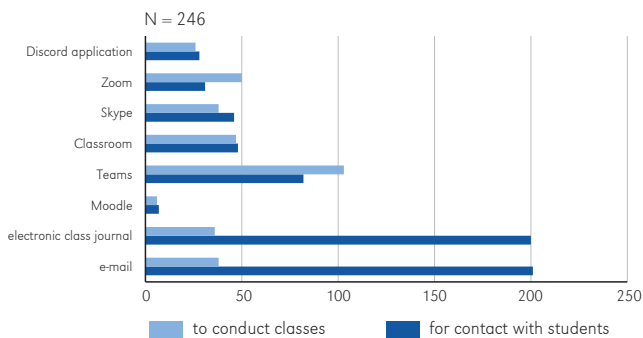


Figure 2. Tools used to conduct remote teaching

An important link in the education process is the verification of students' knowledge and skills. The most common form of student achievement control used in remote learning was sending assignments to students by e-mail. Almost all respondents used this form (over 97% of teachers from primary schools and secondary schools). To assess students' knowledge, teachers also used tests prepared by test generators (e.g. testportal.pl) and quizzes based on an application (e.g. Kahoot, Quizziz). These forms were used more often by teachers from primary schools (80% of respondents from these schools), and only 60% of respondents, who worked in secondary schools. On the other hand, teachers working in secondary schools much more often used on-line polling of students - over 70% (Fig. 3).

According to data survey during distance learning the marks achieved by students

were more high than in the case of full-time education in school. Only 8% of respondents claimed that these assessments were similar to those obtained during traditional, in-class education (Fig. 4). This result may seem surprising when it comes to the difficulties related to distance learning indicated by teachers. Many factors could have influenced the higher grades of students, e.g. lowering the requirements of teachers due to the pandemic, lowering the objectivity of the test conditions (students could use different sources when taking the tests).

Hardships in distance learning

Remote classes often encountered various difficulties - these were often organizational, didactic, and educational problems.

Out of a long list of organizational problems, the top three most often reported issues

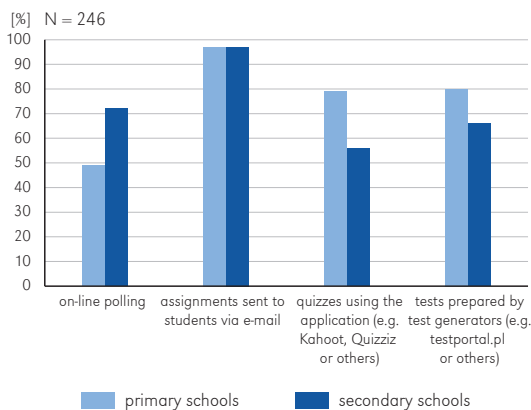


Figure 3. Forms or tools of student control used in distance learning

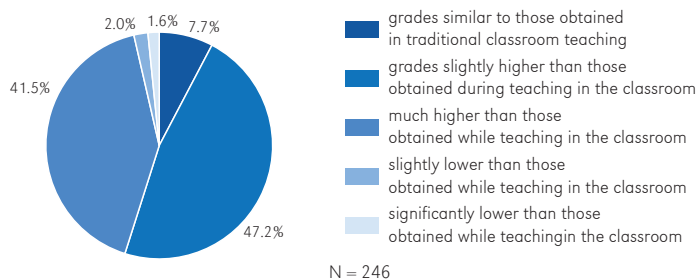


Figure 4. Grades achieved by students during distance learning according to the respondents

concerned equipment (76% and 23% among students and teachers, respectively), contact with students (73%), and insufficient IT skills among students (47%). Table 3 shows major organizational difficulties, broken down into appropriate ranks.

One may observe a close resemblance between organizational problems associated with distance learning in primary schools and post-primary schools.

Another group of difficulties associated with distance learning were didactic and educational problems. According to the respondents, the most severe were as follows: 1/ lack of capacity to carry out pre-scheduled field classes (77%), 2/ difficulties in verifying part of the curriculum (73%), 3/ students becoming bored with distance learning and lack of contact with peers (69%), and 4/ difficulties in realizing the core curriculum to implement certain educational objectives (55%). Other problems reported by the teachers: difficulties in the implementation of the core curriculum concerning the development of certain geographical skills and difficulties in sharing knowledge during online classes. In this case, there are also no major differences between primary and post-primary schools.

Additionally, teachers pointed to problems with evaluating whether the students performed the tasks assigned on their own. For example the fact that students did not take online exams at a specified time, lying to teachers about problems with Internet connection (whether actual or alleged), and unwillingness to turn on a computer’s camera during online test.

Assessment of distance learning and opportunities to use the experience in the future

The core curriculum is a document that defines the goals, content and educational requirements that should be achieved in the teaching process. According to data from survey only one third of respondents stated that they managed to complete it 100% during distance learning. The largest group (48%) completed the core curriculum in 75% and about 5% of teachers implemented the core curriculum below half of they planned to achieve.

According to teachers, distance teaching caused problems related to the development of student skills such as field observations and

Table 3. Organizational difficulties during distance learning

Kind of difficulty	Primary schools		Post-primary schools	
	number of indications	rank	number of indications	rank
Lack of access of some students to equipment (e.g. computer, laptop, tablet) or the Internet	107	1	81	2
Difficulties in communicating with students during classes (no sound, vision, etc.)	91	2	89	1
Low competencies of some students in terms of using IT technologies in the learning process	83	3	33	3
Changes in work organization during learning, e.g. time of classes, breaks between classes, etc.	43	4	24	4
Lack of access of the teacher to the Internet or poor quality of Internet connection	34	5	24	4
Lack of equipment to conduct online classes, e.g. computer, headphones, microphone	34	5	24	4

Source: Authors’ work based on questionnaire research.

measurements as well as the analysis of data and drawing conclusions based on them. Regarding the goals related to attitudes and values, the respondents usually marked 'hard to say' on the questionnaire.

Despite heavy criticism of remote education, which is manifested e.g. by unwillingness to continue this form in the future (over 60% of respondents do not want to teach remotely), the teachers were unable to indicate solutions that would be clearly unfavourable for geographical education, except for the inability to conduct classes in the field. A number of respondents took a negative stance on the lack of a uniform educational platform in Poland and the lack of ready-made methodological materials that would make it easier to hold online classes.

Remote classes required an additional preparation of the teachers and involved a heavy workload. Nearly half of respondents (47%) spent more than 10 hours per week to prepare for classes, with over one fourth (26%) spending 7 to 9 hours. Slightly fewer respondents (23%) devoted 3 to 6 hours in this respect. A small number of respondents (only 3%) spent less than 3 hours a week to prepare for classes.

Respondents, when preparing distance learning courses, mostly worked on their own (55%). Those who decided to team up with other teachers (45%) joined discussion groups on FB and an information exchange platform called 'Online Classes' (*Lekcje w sieci*). To a much lesser extent, they worked with each other as part of online subject groups or methodological teams.

According to the respondents, working with other teachers mainly consisted in sharing experiences and materials (class scenarios, ideas for lessons and exams, tests) and providing technical assistance in starting or repairing equipment, i.e. methodological and practical advice. An important part was a broadly understood emotional and mental support, together with advice on difficult situations related to students.

Despite the many problems and hardships, teachers have observed several positive sides of distance learning. In the opinion of the teachers who took part in the study, the new experience in teaching remotely will come in handy for further didactic work. The situation compelled many teachers to overcome their weaknesses in using information technologies. Online tests and

Table 4. Advantages and disadvantages of distance learning from teacher's perspective

Advantages	Disadvantages
The opportunity to learn and exchange methodological materials, ideas for classes and information between teachers	no direct contact with the student – "face to face"
Learning and practical application of educational platforms and ICT tools	making the effects of classes dependent on access to equipment
Acquiring new professional experience	conducting classes depending on the low quality of own or students' equipment and the quality of internet connections
Safe contact with students	lowering the requirements
Possibility of quick contact with the student and parents	the inability to verify the independence of students' work
Increasing students' work independence and responsibility for the tasks performer	a parent rather than a student is likely to do homework
Cooperation with other teachers on internet forums	increasing working time to prepare for classes
Self-education	the inability to fully implement the provisions of the core curriculum, e.g. field classes

Source: Authors' work based on questionnaire research.

exams are to become a permanent feature of a class, and messengers such as MC Teams, Skype, and other tools will be helpful in conducting classes with talented students. New e-learning platforms are intended not only to obtain useful information, but also to share experience with other teachers. Some respondents emphasized that they will more often apply tests, quizzes, and exercises via online platforms, and that electronic log-books will contain more information on home learning tasks. They also noticed the possibility of holding consultations with students and parents online (i.e. a break duty at home, not in school after classes). The respondents also emphasized that it is necessary to change the form of individual teaching (with the consent of the principal and parents) in the form of video meetings on Teams and Skype.

Discussion

The universal transition to distance learning caused by the COVID-19 pandemic revealed the legal and organizational possibilities of crisis management in education and adapting it to the new reality. In Poland, organizational adjustments were similar to those undertaken in other countries in terms of transition to various forms of distance learning, depending on the equipment of a given school. The limitations in a common transition to online learning resulted from several reasons. One of them was lack of access to a computer among some students, despite intervention activities undertaken by the Ministry of National Education in this regard (Tab. 1). Although the degree of IT skills is systematically increasing in the Polish society, not every student has access to an individual computer at home. In some cases, this precluded a simultaneous participation in online lessons by several children from a given family. Other studies also indicate the difficulties with implementing distance learning in Poland due to digital exclusion (Gorzeńska et al., 2020; *Nauczanie zdalne...*, 2020). On top of that, there were parents who faced a number of problems, as some

of them (e.g. teachers, administration staff) had to work from home due to the pandemic. The problem of exclusion of students from distance learning due to lack of access to relevant equipment was also observed in other countries, both in developing (Dawadi, et al., 2020; Owusu-Fordjour et al., 2020; The Effect of COVID-19, 2020) and in highly developed countries (Aristovnik et al., 2020; Bagoly-Simó et al., 2020; Di Pietro et al., 2020).

Research confirmed that the organizational problems of distance learning conducted in Poland did not significantly vary from the problems experienced in other countries (Bagoly-Simó et al., 2020). In the opinion of teachers, the main organizational problems were as follows: ineffective attempts to contact some pupils, the unavailability of appropriate equipment – experienced by pupils and teachers alike – that would enable real-time communication, and insufficient IT competences among some pupils. The respondents often stressed the problem with ‘feigned presence’ during classes or lack of communication with certain pupils. It often happened that there was a disruption in Internet connection during classes (Tab. 3).

The research showed that the actual access of students to the equipment enabling remote education in Poland was varied and lower than it was shown in reports from previous studies (*Edukacja zdalna ...* 2020). These results indicate that the local exclusion from continuous education affected almost three-fourth of the students. In the light of the available data, the level of this exclusion was higher than, for example, in the United Kingdom and Germany (Edge Foundation, 2020; Bagoly-Simó et al., 2020).

Although the teachers were not properly prepared to conduct remote education, they were obliged to conduct it, and chose various possible forms and methods of working with the student. They also noticed their own shortcomings in this respect. As a result, some of them only accepted e-mail as a form of communication with students and a method of sending materials with tasks. In addition, respondents also commented on the use

of home equipment for educational purposes or financial costs incurred in connection with unplanned expenses for the purchase of computer equipment or Internet bills.

The organizational difficulties observed by the respondents were substantiated, among others, by problems arising from a simultaneous participation in online lessons by several children from the same family and a parent who is also a teacher giving classes from his or her flat. Teachers also tried to explain some of these problems through growing aversion of the students to take part in classes conducted remotely and the students' need – as understood by teachers – to spend time with each other in school.

The research revealed several problems related to the education process. As for pedagogical difficulties, teachers pointed to an extensive core curriculum and excessive workload and evaluation of students' achievements. The educational problems they noticed partially resulted from the lack of motivation of the students to attend classes. According to respondents, it was often manifested by a lack of Internet connection, a computer failure, etc. (Tab. 4).

The study showed that an important link in the education process – the assessment of students' achievements, during distance learning did not always meet the conditions of its reliability. This is confirmed by the higher grades of students obtained during remote teaching, as observed by teachers, compared to those obtained during lessons in the classroom. This was partly influenced by the form of distance learning available to the teacher. A large group of teachers (primary schools) sent sentences to students for self-completion by mail. Some parents, wanting to help their children in this difficult situation, helped them with their homework. The authors of the report "*Edukacja zdalna ...*" (2020) drew attention to this problem.

In the case of online teaching, the teacher's experience in preparing control tools – tests using available generators – was essential. Also, technical difficulties in checking the independence of students' work

(tests, sentences) could have influenced their grades. It was not possible (same time) to verify whether students solve test on their own. Based on the experience gained from the transition to the distance learning system during the COVID-19 pandemic, solutions are sought that would provide more objective conditions for checking the knowledge and skills of students (Elzainy et al., 2020; Iwai, 2020).

In the discussion on the effectiveness of distance learning, the problem of ensuring the possibility of the didactic process by the teacher in accordance with the assumptions of the core curriculum is important. The present study shows that teachers found it difficult to organize the didactic process, which would enable the entire implementation of the teaching objectives and content set out in the core curriculum. Some of the skills identified in the curriculum were not mastered by the students, e.g. observation and taking measurements in the field. This problem is also raised in the reports of other authors (*Edukacja zdalna ...* 2020; OECD, 2020b). The presented facts highlighted the urgent need to adapt the existing core curriculum to the conditions of distance learning (in various forms), taking into account its limitations and the physical and mental health of students. They should provide the teacher with mechanisms to enable a properly guided process of assessing student achievement, providing students with feedback and guidance for formation. The lessons implemented by the Ministry of National Education through TVP and Radio Polskie (very valuable in this difficult situation), due to the one-way transmission of information, do not allow teachers to evaluate and correct students' learning paths.

At the same time, the education crisis caused by COVID-19 also showed positive sides of distance learning. Teachers can now ensure the continuity of the educational process, although it took various forms. The digital competencies of teachers and students have increased significantly as well. Teachers appreciated a number of possibilities offered

by distance learning (access to tests, quizzes, and exercises using online platforms) and the use of educational platforms in extracurricular classes and for the purpose of individualizing work with students (Tab. 4).

Conclusions

The results of research have confirmed the occurrence of various difficulties in the implementation of distance learning introduced due to the restrictions related to the COVID-19 pandemic. The following difficulties arose in remote education during the school closure due to COVID-19: (1) insufficient competencies of teachers to teach remotely through online channels, including educational platforms, (2) lack of access of certain students to equipment (computers, laptops), (3) heavy workload, (4) didactic difficulties related to student evaluation, selection of content, and active involvement of students during the classes.

The problem of the reliability of the conducted control and assessment of students' achievements in online teaching is a big challenge for school practice. There is a need for further research to establish to what extent the forms of distance learning used, including online learning and achievement assessment methods, ensured that students achieved their learning goals.

In the context of the research results, a significant challenge for those responsible for school education is to start a discussion on adjusting the core curriculum to the actual possibilities of its implementation. This will be especially important in the case of prolonged distance learning during the lockdown and the associated inability to achieve some of the core curriculum requirements, for example those related to fieldwork of students.

The development of digital competences by students and teachers requires the revision of courses and training programmes in the field of distance learning. Teachers should acquire greater knowledge and develop skills in the field of education

methods and techniques which would work best in distance learning (with the use of the Internet) or mixed models. One should also bear in mind the need for continuous development of the database of public, commonly available, and well-tried e-resources used in education. The experience of teachers in e-learning during the school closure is an added value to the crisis situation caused by COVID-19. It may become an inspiration for modernization of the remote (distance) educational process and the ways it is used in various didactic situations.

The impact of COVID-19 on education poses at least two key challenges to the decision-makers. First of all, measures should be taken to ensure that the students in a difficult situation are able to catch up and acquire the knowledge from the period of lockdown. This should be done quickly and effectively in order to avoid a scenario in which such a crisis gives rise to educational inequalities. Secondly, considering the fact that it is highly likely that some schools will have to function remotely for some time during the next school year (e.g. after diagnosing an infection among a student or a teacher of a given school), it is crucial to introduce alternative teaching and learning methods. An example could be a mixed / rotational teaching system (partly offline, partly online), which is similar to solutions introduced in other countries.

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