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Environmental & Socio-economic Studies

DOI: 10.2478/environ-2023-0021

Environ. Socio.-econ. Stud., **2023, 11, 4: 25-35**

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Original article

An evaluation of the effectiveness of distance learning using ICT in geographical education. From the experiences of teachers in Poland

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ABSTRACT

The article presents the results of a survey conducted among Polish geography teachers. The purpose of the research was to examine use of information and communication technologies (ICT) in geographical education, carried out remotely after the end of the Lockdown. The collected opinions show that the vast majority of teachers now use information obtained from the Internet and free applications in lessons much more often than before the Covid-19 pandemic. The forced abandonment of traditional classroom learning and its replacement with distance learning has contributed to the development of new skills among teachers and students. Despite the initial reluctance caused by the lack of preparation for the use of new information technologies, geography teachers see many advantages to remote teaching using ICT. In the opinion of those surveyed, the acquired practical digital and communication skills have a positive impact on the teaching of geography. Respondents emphasized that distance learning should only be a supplement to traditional education and used in exceptional situations.

KEY WORDS: geographical education, communication skills, digital competences, distance learning, Polish school, geography teachers

ARTICLE HISTORY: received 30 September 2023; received in revised form 4 December 2023; accepted 5 December 2023

1. Introduction

The technological progress we are witnessing is causing significant changes in the functioning of countries within economic, social and cultural areas. Modern information and communication technologies (ICT) have expanded teachers' and students' access to various sources and information resources. Observation of school practice and many scientific studies indicate that children and adolescents have often become more proficient in the practical use of information technology tools than their teachers (EDUKACJA ZDALNA..., 2020). Nevertheless, the teacher and the interactions between him and his students still play an important role in educational processes. This is confirmed by experiences of distance learning during the Covid-19 pandemic (TOMASIK ET AL., 2020).

The Covid-19 Pandemic has certainly been the greatest cause of disruption in the history of modern education since World War II. According to estimates by international institutions, it affected almost 1.6 billion students in 190 countries on all continents (IMF, 2020; OECD, 2020). The transition to distance learning was intended to minimize the negative impact of temporary school closures. In the case of countries with a high level of economic development, online distance learning became the new norm for the majority of students, and remote education days

were treated like the days spent at school. However, less developed countries were not able to provide students with full remote learning. The result was the exclusion of some students from access to education (DI PIETRO ET AL., 2020), including students with various disabilities (SCHLEICHER, 2020). Data from the European Commission report show that the provision of schools with new technologies is systematically increasing in EU countries (EUROPEAN COMMISSION, 2013, 2017). Before the Covid-19 pandemic, the use of Internet resources for learning was utilised by a relatively small percentage of students (EUROPEAN COMMISSION, 2013). Also, few teachers used various forms of remote teaching for individual consultations with students, during lessons or extracurricular activities (RAPORT MINISTRA…, 2020).

In Poland, as in many countries around the world, an emergency plan for the education system was launched at the beginning of March 2020. A form of distance learning was implemented in all types of polish schools from March 2020 to the beginning of June 2021 (with a short break in September 2020). It was implemented by using educational platforms (online), television, radio, and take-home task packages (offline) in over 24.5 thousand schools (including 14.5 thousand primary schools) attended by over 3 million students (OŚWIATA..., 2020).

This temporary closure of schools forced changes in the organization of educational processes and at the same time contributed to the promotion of distance education in school practice. It should be emphasized that the pandemic gave an impetus to develop alternative educational opportunities on a massive, never-before-used scale, by utilising new information technologies (SONI, 2020; SATHISKUNAR ET AL., 2020; TARRICONE ET AL., 2021). The introduction of distance learning forced the education systems of many countries to reorganize and, at the same time, forced teachers to change their existing methods of working with students. Due to the importance of the educational process in the development not only of pupils and students, but also of the social and economic development of countries, a number of questions arise about the importance of information technologies in education in the post-pandemic period.

The aim of this study was to investigate: i) to what extent technological development strengthens the process of remote geographical education, ii) what are the possibilities, and limitations, of using remote teaching in geography lessons in Poland, and iii) how remote education, during the Covid-19 pandemic, contributed to the increased use of information technologies in geographical education.

2. ICT in distance learning – literature review

The term "*new technologies in education"* means all mobile devices, such as computers, tablets, laptops, smartphones, connected to the Internet and used in the teaching and learning process (SIEMIENIECKI, 2008; HIBSZER & SZKURŁAT eds., 2015; PODGÓRSKI, 2015). The possibilities of using them in lessons are very diverse due to their access to many sources of information, the collection and processing of information, the use of thematic portals and applications, as well as the availability of a multitude of virtual advice and methodological tips suggesting the use of ICT in lessons. One such option is remote learning.

Remote teaching is a concept that covers various forms of teaching and the various activities of the teacher and students related to them. Most often, remote learning, also called distance learning (d-learning), is defined as teaching conducted without direct contact between the student and the teacher using modern communication technologies (ARKORFUL & ABAIDOO, 2015; BASAK ET AL., 2018; WASZEK, 2010). It can be supported by e-learning, i.e., education conducted by a teacher, or moderator, in a virtual classroom and meetings in real classes (video-conferencing) using an educational platform and electronic media (Internet, smartphones, tablets) (BASAK ET AL., 2018; HODGES ET AL., 2020). Remote online teaching utilises the Internet. During online lessons, the teacher and students have contact with each other in real time. The teacher conducts the teaching through tasks and commands addressed to students and obtains feedback. He can constantly monitor the students' learning process and thus obtain feedback on the success of the class learning process. Offline (asynchronous) learning, on the other hand, involves the teacher preparing online content (e.g. homework, a project to be completed, teaching games, etc.), which he, or she, shares with students in a previously agreed manner (e.g. via an educational platform, e-mail, etc.). In this way, it allows students to learn at their own pace and at a time of their choosing. The development of distance learning, including its various forms (e-learning, m-learning, b-learning), requires equipping schools with appropriate technical infrastructure, increasing students' access to the Internet and computers, as well as the need for teachers with digital competences (HIBSZER ET AL., 2018; PTASZEK ET AL., 2020).

Research on the educational process using new technologies focuses on theoretical foundations, access to students' and teachers' tools, teachers' competences, and their practical use in lessons (SIEMIENIECKI, 2008; DEMIRCI ET AL., 2018). Much of the research work was created during the widespread introduction of distance learning related to the Covid-19 pandemic. The most of studies have concerned, among others, legal provisions and the course of distance learning, the approach to this form of educating students and teachers, the techniques and forms of distance teaching used, the possibility of achieving educational goals and learning outcomes (JASKULSKA & JANKOWIAK, 2020; PLEBAŃSKA ET AL., 2020; PTASZEK ET AL., 2020; RADHA ET AL., 2020; SINDIANI ET AL., 2020; SONI, 2020; UNESCO, 2020; NICOLA ET AL., 2020; HIBSZER & TRACZ, 2021; PALERMO, 2022; PALMENTIE, 2022; HANSON, 2023; PIOTROWSKA ET AL., 2023). These studies most often covered one country or region. Researchers have highlighted the existing limitations in remote online learning due to the lack of, among others, access to the Internet, electronic media in highly developed and developing countries (EDGE FOUNDATION, 2020; DAWADI AT EL., 2020; SĂGEATĂ ET AL., 2023). Many researchers have also shown that both teachers and students were not prepared for the transition to distance learning due to low digital competences and methodological and organizational problems (ONEYMA ET AL., 2020; WUNONG ET AL., 2020). Moreover, the lack of consistent messages from the school administration regarding the use of communication techniques with students and the different levels of teachers' competences in organizing distance learning additionally hampered its effectiveness (BAGOLY-SIMÓ ET AL., 2020; JASKULSKA & JANKOWIAK, 2020). In turn, students (especially younger ones) had trouble finding messages sent to them via e-mail, or the educational platform, and with completing tasks within the specified deadline (ZAHORSKA, 2020).

Many studies have focused on the substantive and didactic problems of distance learning. Information was sought about the difficulties posed by distance learning for teachers, students, and parents. It is worth noting that the latter were included in the education process on such a large scale for the first time, especially for students from the younger grades of primary school. Research results indicate that teachers used various remote teaching techniques, from simple ones: e-mail, to electronic platforms - online teaching (JASKULSKA & JANKOWIAK, 2020; HIBSZER & TRACZ, 2021). The teaching problems most frequently experienced by teachers utilising during distance learning were: difficulties in motivating young people in online classes, mobilizing them to work and controlling their knowledge (ONEYMA ET AL., 2020; PLEBAŃSKA ET AL., 2020; PTASZEK ET AL., 2020). Teachers had to switch to new working methods, which involved increasing the time needed to prepare for classes (EDUKACJA ZDALNA.., 2020; HIBSZER & TRACZ, 2021). However, for students, the difficulty was the excess of material to learn, the lack of direct contact with teachers and fellow students, difficulties with self-discipline and individual organization of their learning process (ZAHORSKA, 2020; PIOTROWSKA ET AL., 2023).

The study by HASTUTI ET AL. (2021), conducted among geography students of Lambung Mangkurat University, confirmed existing limitations with the widespread implementation of e-learning in academic education, resulting from financial costs (e.g., Internet access fees) and the lack of an Internet network (especially in rural areas).

An equally important research issue was identifying the physical and mental consequences of pupils/ students being isolated and working for many hours with a computer. Spending many hours at the computer caused physical and mental difficulties for both teachers and students. Teachers most often indicated difficulties in falling asleep, lack of energy, nervousness, and a bad mood. In the case of students, they experienced: increased irritability and an inability to focus, feelings of isolation, and many teenagers also developed sleep disorders and had nightmares (EDUKACJA ZDALNA.., 2020).

In previous research, relatively little attention was paid to didactic problems in teaching individual school subjects. It can be assumed that this type of information will appear successively. One of the first reflections on the difficulties of teaching geography during the Lockdown was the study by BAGOLY-SIMÓ ET AL. (2020). Using a relatively small sample of respondents (18 people), the authors indicated the difficulties encountered by German teachers implementing distance learning.

This study aims to fill the gap regarding didactic difficulties in remote geography teaching experienced by teachers in Poland.

3. Methodology

The subject of research interest was to learn the opinions of geography teachers about the advantages and disadvantages of remote teaching after the

period of its practical use during the closure of schools due to the Covid-19 pandemic. This research attempted to determine the extent to which distance learning, supported by information and communication technologies, enabled the implementation of the objectives and content of geographical education included in the core curriculum in school practice during the pandemic. Hence, it is an attempt to search for answers to two basic questions about: (1) the assessment of the implemented solutions related to remote teaching during the Covid-19 pandemic and (2) the possibilities and limitations of using online teaching in geographical education after the end of the lockdown. In particular, the study was concerned with:
– learning about the preparation of geography teachers for remote teaching and assessing the acquired digital competences in the field of remote teaching during the school lockdown;
– learning about the possibilities of using distance learning classes in geography, and the activities undertaken by teachers after the end of mandatory remote teaching;
– establishing the limitations to the use of remote online teaching in the implementation of the geography core curriculum;
– assessment of the skills acquired during the use of distance learning in geographical education compared to traditional forms of teaching and learning.

The research was ex-post and was conducted among Polish geography teachers using a survey method using the Google Forms questionnaire from mid-June to the end of July 2023. The completion of the questionnaire and was voluntary and the results were anonymised. The survey questionnaire contained 19 questions (which included 12 closed questions and 7 open questions). The questions concerned the demographic and social characteristics of the respondents (e.g., gender, seniority as a teacher, degree of professional promotion, type of school place of employment – the size of the place where the school is located), assessment and self-assessment of teachers' digital competences, organization, and implementation of remote teaching during school closures related to the Covid-19 pandemic and the possibilities and limitations of using distance learning in achieving the goals of geographical education.

Only fully completed questionnaires were selected for detailed statistical analyses. After selecting the responses, a sample of 280 questionnaires were obtained (N=280). The collected quantitative and qualitative data were presented here in graphical form. A SWOT analysis method was used to determine the possibilities and limitations of using distance learning with the help of modern communication technologies in geographical education.

4. Results

4.1. Characteristics of respondents

The survey was completed by geography teachers from eleven out of sixteen Polish voivodeships. Most responses were from the voivodeships of Silesia (26.8%), West Pomerania (25%), Lesser Poland (8.9%) and Podlasie (8.9%). In the survey, women constituted the vast majority of respondents – 78.6%, which is typical for this profession in Poland. The surveyed group was dominated by teachers working in secondary schools (60.7%): general secondary schools (140 people) and technical schools (30 people). About 40% were primary school teachers (110 people). The surveyed teachers worked mainly in cities with over 100,000 inhabitants and from 20-100 thousand inhabitants (Table 1). The respondents are mainly teachers with lengthy professional experience – over 20 years (73.2%) and with the highest degree of professional experience – certified teacher (82.1%), and only 5.4% were teachers with the least professional experience (Table 1). The vast majority of respondents (62.8%) taught only geography, the others, also taught another subject.

4.2. The use of distance learning in geographical education before and after the Covid-19 pandemic

More than half of the surveyed teachers (51.8%) declared that they used e-learning platforms in school teaching even before the Covid-19 pandemic (Fig. 1). Teachers most often became familiar with this form of education during training courses as part of further education, or self-education (69%), and they used it slightly less frequently during lessons (48%) and extracurricular activities (48%) (Fig. 2). The respondents' responses show that the training conducted by the Central Examination Board and the district examination boards were very important and useful for teachers, which allowed some of the respondents to learn and acquire skills in using the Moodle platform.

Table 1. Characteristics of surveyed geography teachers (Source: own study based on surveys)

Characteristics		Number (N)	%	Primary school		Secondary school	
				N	%	N	%
Gender	Women	220	78.6	95	43.2	125	56.8
	Men	60	21.4	15	25.0	45	75.0
	Total	**280**	**100**	110	39.3	170	60.7
Length of work experience as a teacher	up to 5 years	5	1.8	5	100	0	0
	6-10 years	30	10.7	20	66.7	10	33.3
	11-20 years	40	14.3	15	37.5	25	62.5
	> 20 years	205	73.2	70	34.2	135	65.8
	Total	**280**	**100**	110	39.3	170	60.7
Degree of professional advancement	Beginner – trainee teacher	15	5.4	10	66.7	5	33.3
	Appointed teacher	35	12.5	10	28.6	25	71.4
	Certified teacher	230	82.1	90	39.1	140	60.9
	Total	**280**	**100**	110	39.3	170	60.7
Location on surveyed school	Village	20	7.1	20	100	0	0
	Town < 20 thousand inhabitants	35	12.5	10	28.6	25	71.4
	Town 20 -100 thousand inhabitants	90	33.9	45	50.0	45	50.0
	Town > 100 thousand inhabitants	135	46.4	35	25.9	100	74.1
	Total	**280**	**100**	110	39.3	170	60.7

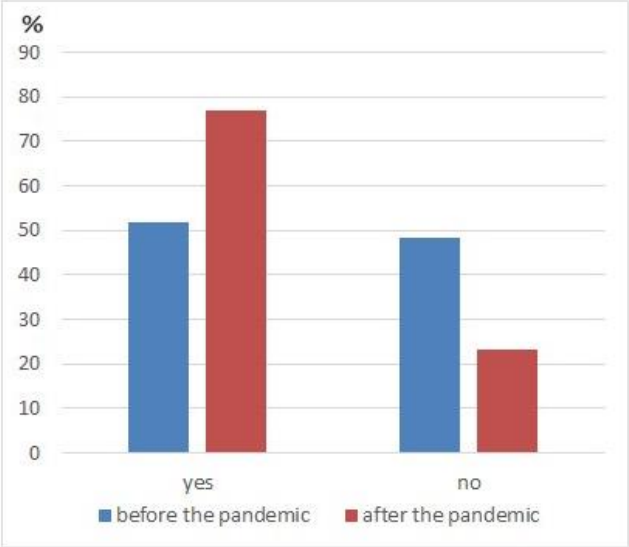


Fig. 1. Use of e-learning platforms by geography teachers before and after the pandemic (Source: own study)

Before the pandemic, during geography lessons, teachers used thematic geoportals, Google Maps and applications, to check students' knowledge in the form of quizzes obtained from available platforms (e.g. Kahoot, Padlet) and e-textbooks.

However, presently, as many as 77% of teachers more often use various forms of remote teaching using new communication technologies. The scope of the use of this form of teaching has also been significantly expanded. Geography teachers use forms of communication learned during distance learning supported by new technologies, including to:

- providing individual teaching for students with various educational needs (e.g., online lessons for students undergoing long periods of treatment at home, and for gifted & talented students),
- sending students materials for selected lesson topics (e.g., presentations, links to films, animations, e-textbooks) and homework assignments,
- communication with students, parents and school management (via educational platforms, electronic journals, class groups, etc.),
- creating materials to control and evaluate students' achievements (e.g., tests, quizzes, using available tools, e.g. Kahoot, Canva, Quizlet, Wordwall),
- collecting homework, competitions, and projects from students,
- co-creating materials on a given topic with students using available free applications (e.g., Wakelet).

The results, regarding the self-assessment of geography teachers' digital competences are interesting. 12% of respondents described their competences before the pandemic as very good. A relatively large group of respondents (30.4%) stated that their preparation for remote teaching before the pandemic was rather good, but was not supported by practical skills. The same number (30.4%) declared that they had no skills related to distance learning, and every fourth respondent rated their skills as low (Fig. 3).

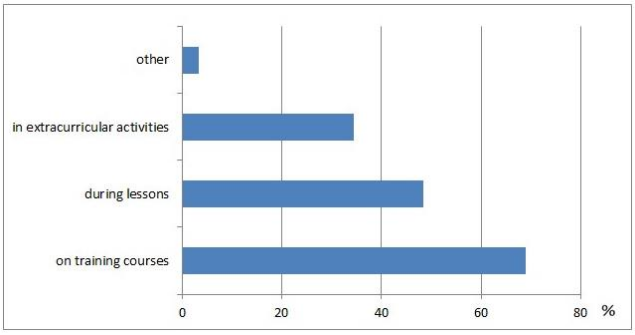


Fig. 2. Teachers' responses regarding where they learned about, and used, e-learning platforms before the Covid-19 pandemic (Source: own study based on survey research)

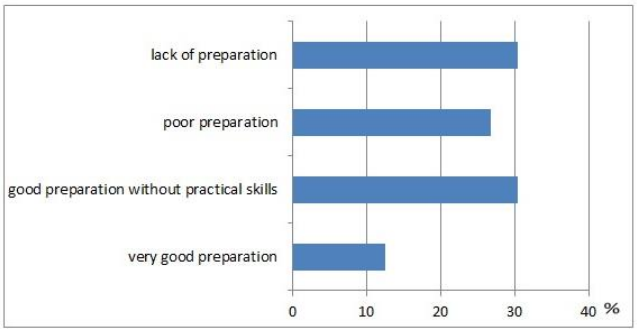


Fig. 3. Self-assessment of digital competences of geography teachers before the Covid-19 pandemic (Source: own study based on survey research)

The analysis of open questions, related to the impact of distance learning during school closures due to the pandemic, allowed us to determine that geography teachers' competences in using new technologies in the teaching process have improved. The skills most frequently acquired by respondents during this time are listed in Table 2. These can be divided into three groups:

- media/digital competences,
- teaching and methodological competences,
- self-education competences.

Among media/digital competences, the surveyed teachers most often indicated the ability to more efficiently use information and communication technology tools during lessons (e.g., educational platforms, free applications, films, text creation programs). Another important skill mastered by geography teachers was expanding their ways of communicating with students and parents through various messengers (e.g., chat, electronic journals, discussion forums, social media). In the group of teaching and methodological competences, teachers improved their skills in creating teaching materials for lessons using new technologies (e.g., presentations, tests, quizzes) and acquiring e-materials and presenting, or sharing, them during classes. Some teachers stated that the use of new technologies contributed to more effective planning and organization of remote lessons (e.g. creativity, ingenuity, designing more interesting and diverse tasks for students to perform).

Table 2. Skills acquired during the pandemic by geography teachers in the field of remote teaching supported by new technologies (Source: own study based on survey research)

Skills acquired	Competencies
Using digital media (e.g., operating programs through which distance learning took place)	media/digital
Acquiring e-materials for lessons from the Internet and on-line platforms	
Common communicating with students	
Using information and communication technology tools during lessons	
Ore widespread use of Internet resources to prepare materials for lessons	teaching and learning
Introducing photos, short films, presentations, and current Internet information during lessons	
Making a better selection of teaching content for lessons	
Organizing and planning lessons remotely	
Using new teaching methods (e.g., more multimedia presentations, films, photos, animations during lessons, interesting sentences for students)	self-education
Adopting a creative approach to lesson planning	

4.3. Remote online teaching in geographical education

According to respondents, conducting remote geography lessons during school closures due to the Covid-19 pandemic required more preparation time than a traditional classroom lesson. Only people who rated their skills in remote teaching as high declared that they spent a similar amount of time preparing lessons in remote and traditional format (Fig. 4).

The analysis of teachers' answers to an open question about the advantages and disadvantages of remote teaching allowed us to determine the strengths and weaknesses of remote geography teaching using modern communication technologies (Table 3).

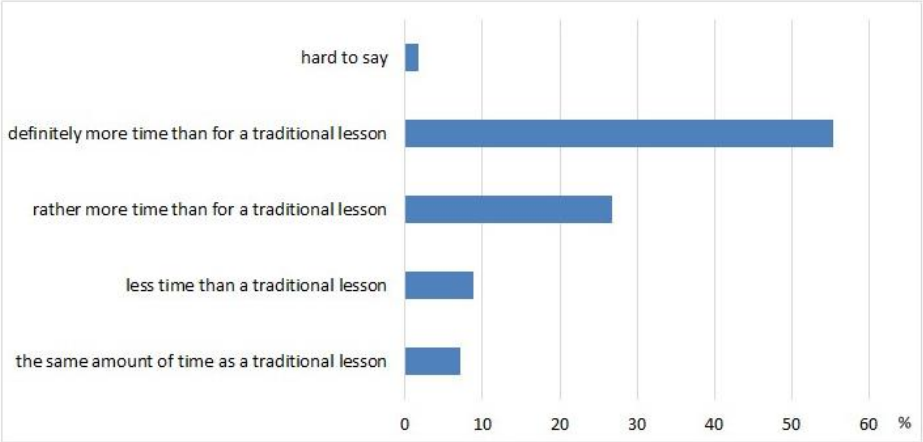


Fig. 4. Assessment of the time needed to prepare for remote geography lessons by the surveyed teachers (in %) (Source: own study based on survey research)

Table 3. Strengths and weaknesses of distance learning in geographical education in the opinion of the surveyed teachers (SWOT analysis) (Source: own study based on survey research)

STRENGTHS	WEAKNESSES
• access to interactive maps • ability to show current events (using visual materials, animations, presentations available on the Internet) • using tools such as GPS, GIS during lessons and in the field • greater possibility of using a variety of multimedia materials in lessons • adapting the pace of work to the capabilities of a given student and his or her preferences • independent learning • possibility of introducing flexible forms of working with students, flexible working time • greater freedom in doing housework • ability to quickly check tests (in online forms format), no paper is wasted • easier contact with students outside of school	• Difficulty checking whether all students actually benefit from their lessons to the same extent • lack of personal contact between the teacher and the student • difficulties with objective verification of students' knowledge and skills • gaps in students' knowledge and skills, in particular regarding map reading • difficulties in maintaining motivation and engagement of students during classes • inability to teach due to technical problems (lack of equipment, access to the Internet, etc.)
OPPORTUNITIES	THREATS
• students taking more responsibility for their learning process • students who are absent from the classroom have the opportunity to participate in the lesson and do their homework	• a threat to mastering some skills required in the core curriculum (e.g., field lessons, using a map in the field) • students are tired of staying in front of the computer for too long, • possibility of conflicts between student, parent and teacher due to lack of personal contact

4.4. Assessment of the organization of distance learning during school closures caused by Covid-19

The introduction of distance learning, especially at the beginning of the pandemic, was strongly criticized by a significant part of the teaching community. From a longer perspective, after the end of the lockdown, the vast majority of teachers positively assessed the actions of the educational authorities related to the introduction of distance learning during the pandemic. Among the positive actions, teachers most often mentioned were:

- provision of free educational platforms,
- provision of a database of teaching materials (e.g. Integrated Educational Platform, e-textbooks and other e-materials for classes),
- providing schools with equipment enabling the implementation of on-line classes (e.g., computers, cameras),
- provision of training in the use of educational platforms,
- opportunity to participate in various webinars and training courses organized online,
- more effective use of lesson time,
- provision of a voucher for the purchase of computer equipment to the amount of PLN 500,
- more interesting presentation of the prepared teaching material,
- using Google Maps as resource during lessons,
- allowing the head teachers to decide on the duration of remote lessons, which usually lasted from 30-40 minutes.

However, the negative solutions related to the organization of distance learning included the lack of systemic solutions particularly in terms of:

- access and quality of tools for distance learning, i.e., quality of the Internet network, hardware, and software shortages,
- training teachers in remote teaching, leaving schools to deal with this problem alone,
- different instant messengers used in many schools to contact students and conduct remote lessons,
- lack of definition of standards related to the verification of students' attendance during remote learning.

Moreover, according to the surveyed teachers, maintaining the time schedule typical of traditional teaching meant that students spent a lot of time in front of the computer during the week. Also, the long duration of distance learning was, according to respondents, unfavourable for the quality of the teaching process and students' health.

Even though most geography teachers noticed many advantages of remote teaching, only every fifth respondent would choose to use remote lessons if they had the opportunity to choose the form of teaching (on-site or remote). The majority of respondents (56.4%) would not choose this form of teaching (Fig. 5).

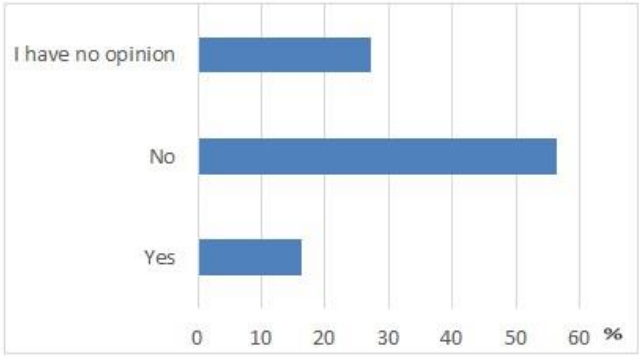


Fig. 5. Teachers' readiness to conduct remote geography lessons in the future (in %) (Source: own study based on survey research)

Respondents provided many reasons for such decisions. It was stated, among other things, that distance learning should only be a supplement to traditional education and should be used only in exceptional situations (i.e., as was the case during the Covid-19 pandemic). Distance learning that lasts too long is very burdensome for students, both physically and mentally. Some of the surveyed teachers also raised the problem of the low effectiveness of this form of teaching. Teachers' concerns regarding the use of this form of teaching are best reflected in the following respondents' statements:
"Education is, above all, about relationships with other people and mutual learning from each other. Taking into account its many disadvantages, distance education can support traditional education, but should not completely replace it" and *"I see the sense of distance education, but only for small groups, with a few people. Only then can I influence these students and increase their level of involvement in the lesson. When students live in areas with poor Internet access, this form does not work."*

5. Discussion

The results of surveys conducted among geography teachers on the use of new technologies in geographic education show what teachers and their students struggled with this due to the sudden need to organize online education during school closures. Our research revealed that in secondary schools, remote geography

teaching was conducted online with greater effectiveness and with fewer problems than at lower educational levels. For most teachers, the transition to distance learning was a challenge, mainly due to the lack of practical skills in using digital platforms, using e-materials in lessons. However same time teaching or teaching process was accompanied by technical problems related to the availability of equipment and poor quality of Internet connections. The research results confirm many studies conducted in other countries on the type of difficulties related to implementing remote learning during the pandemic (e.g. NICOLA ET AL., 2020; SĂGEATĂ, 2023). On the other hand, overcoming these difficulties is achievable, as this study shows. Teachers significantly improved their digital competences in a relatively short time. This fact should be considered beneficial and favours the greater use of ITC tools in geography lessons. Currently government introduced new policy regarding assistance in equipping 4th grade students and primary school teachers with equipment for distance learning (laptops). This can significantly reduced the technical limitations of schools and students in accessing new technologies and their use in teaching and learning. The use of digital technologies promotes a participatory and transdisciplinary approach to geographic education through integration with other freely available geospatial technologies (e.g., GPS and geolocation data, open data, multi-scale data infrastructures). The International Geographical Union recommends the use of these tools in geographical education (HIBSZER ET AL., 2018). The International Charter on Geographical Education states that "geospatial technologies" offer unique opportunities to learn and understand the modern world and enable students to master a set of skills necessary in the 21st century in geography lessons (STOLTMAN ET AL., 2017).

The main problems related to the remote teaching of geography include the time-consuming nature of lesson preparation, difficulties in implementing some teaching content, especially those related to practical skills, adapting the material to a remote lesson, student motivation during the lesson and the organization of the process of monitoring students' knowledge and skills. The problems indicated by geography teachers have already been suggested by some researchers (PODGÓRSKI, 2015; WELTROWSKA, 2022). Nevertheless, empirical research has highlighted the scale of methodological problems associated with the distance teaching of geography.

During the practical application of distance learning, a new challenge emerged that had not previously received much attention. This was related to an important element of the educational process, which was the control and assessment of students' achievements. The problem of controlling students' assessment during distance learning did not only apply to geography, but also to other subjects (WELTROWSKA ET AL., 2022; PIOTROWSKA ET AL., 2023). In order to overcome this limitation, actions should be taken to cooperate, share and provide information between teachers, geography educators and creators of tools used to evaluate the learning process. The contribution of these various entities, with enormous intellectual potential and experience, will allow us to build a more effective system for monitoring students' achievements from using distance learning.

6. Conclusions

The widespread use of distance learning during the pandemic has convinced some geography teachers of the potential of this form of teaching practice. As research has shown, teachers are aware that distance education requires thorough digital and methodological preparation from the participants of this process (both teacher and student), including the ability to adapt material from the analog version to the digital form and taking into account the psychological aspects of this process. A significant problem for a modern geography teacher is no longer whether to use new technologies in geography lessons, but how best to do it.

These research results on the strengths and weaknesses of the use of new technologies in distance learning provide knowledge gained from educational practice. The disadvantages of distance learning that have been revealed in geography lessons should be eliminated. What is important is the fact that there is no single recipe for developing a good geography lesson using new technologies, because each class group is different. It is worth starting with proven concepts and good practices, and then relying on experience gained over years of practice. Teachers should receive support from education authorities and training institutions in the field of digital education. One such solution is to expand and disseminate the existing databases of good practices for teaching using digital technologies in geographical education and to conduct workshops for teachers.

Certainly, this topic requires further research activities, primarily due to the high dynamics of change and the relatively small sample of teachers participating in the research, particularly from different types of schools and from different areas. However, the data collected give an idea of the scale of the limitations and existing trends of distance learning in the process of geographical education, and its assessment.

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