

E-EDUCATION: SOCIO-ECONOMIC CONTEXT

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Formulation of the problem. This research can be treated as a kind of pilot, due to the relatively small population of respondents. However, according to the definition of the selection of typical units, such a small population of respondents is sufficient to draw conclusions from the research presented in this text. *The purpose of the article* is analysis of the main problems and positive aspects of the introduction of electronic educational tools. *The methodological basis of the research* was the logical methods of information processing, statistical analysis, comparison. *The main hypothesis of the study.* Teaching and learning with the use of modern telecommunications and information technologies is already a permanent component of the reality of education in and around the world most countries Teaching via the Internet, which is one of the forms of distance education, breaks certain stereotypes regarding the so-called knowledge transfer process. *Presenting main material.* Innovation is the main driver of economic and social progress. Its absence results in stagnation both in the economy and in various spheres of social life. Economists emphasize the importance of large-scale investments in innovative programs, including education, which will not only help revive the economy in the near term, but also in the long term.. *Originality and practical significance of the research.* The selected research results presented here were related, as already indicated, to the declarations of current and future employees of the Schools. Undoubtedly, the crisis caused by the COVID-19 pandemic has once again revealed the need for innovation and innovation in education and other areas of social life. Meeting this need requires well-thought-out changes in teacher education and professional development. In preparing teachers for work, it is necessary to move away from the narrowly understood didactic effectiveness in favor of, among others, developing teachers' attitudes in the field of introducing changes in education and their innovative behavior. *Conclusions.* Conclusions are presented in the form of answers to research problems: Respondents know many remote learning applications and programs, the most popular of which is Teams; The biggest disadvantage of e-education is the lack of direct contact with the teacher and other pupils/students, although these data are not clearly significant; The greatest advantage of e-education is its low organizational, time and financial costs; Respondents have the possibility of using various methods in e-education and are in favor of using activating methods. Unfortunately, they have little knowledge of the existence of a variety of applications.

Key words:

e-education, learning applications, advantages and disadvantages of online education.

ЕЛЕКТРОННА ОСВІТА: СОЦІАЛЬНО-ЕКОНОМІЧНИЙ КОНТЕКСТ

Постановка проблеми. Це дослідження можна розглядати як своєрідне пілотне, через відносно невелику кількість респондентів. Однак, згідно з визначенням вибірки типових одиниць, така невелика сукупність респондентів є достатньою, щоб зробити висновки з дослідження, представленого в цьому тексті. *Метою статті* є аналіз основних проблем та позитивних сторін впровадження електронних засобів навчання. *Методологічною основою дослідження* були логічні методи обробки інформації, статистичного аналізу, порівняння. *Основна гіпотеза дослідження.* Викладання та навчання з використанням сучасних телекомунікаційних та інформаційних технологій вже є постійною складовою освітньої реальності в більшості країн світу та в усьому світі Навчання через Інтернет, яке є однією з форм дистанційної освіти, ламає певні стереотипи щодо - називається процес передачі знань. *Виклад основного матеріалу.* Інновації є основним рушієм економічного та соціального прогресу. Її відсутність призводить до стагнації як в економіці, так і в різних сферах суспільного життя. Економісти наголошують на важливості масштабних інвестицій в інноваційні програми, в тому числі освітні, які допоможуть відродити економіку не тільки в найближчій, але й у віддаленій перспек-

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тиві. *Оригінальність і практична значущість дослідження.* Вибрані результати дослідження, представлені тут, стосувалися, як уже зазначалося, декларацій нинішніх і майбутніх працівників Шкіл. Безумовно, криза, спричинена пандемією COVID-19, знову виявила потребу в інноваціях та інноваціях в освіті та інших сферах суспільного життя. Задоволення цієї потреби потребує продуманих змін у педагогічній освіті та професійному розвитку. Готуючи вчителя до роботи, необхідно відійти від вузької дидактичної ефективності на користь, серед іншого, розвитку установок вчителів у сфері впровадження змін в освіту та їхньої інноваційної поведінки. *Висновки.* Висновки подаються у формі відповідей на дослідницькі завдання: респонденти знають багато додатків і програм для дистанційного навчання, найпопулярнішою з яких є Teams; найбільшим недоліком електронної освіти є відсутність прямого контакту з учителем та іншими учнями/студентами, хоча ці дані не є явно значущими; найбільшою перевагою електронної освіти є низькі організаційні, часові та фінансові витрати; респонденти мають можливість використовувати різні методи в електронній освіті та виступають за використання активізаційних методів. На жаль, вони мало знають про існування різноманітних додатків.

Ключові слова:

електронна освіта, навчальні програми, переваги та недоліки онлайн-освіти..

Formulation of the problem. At the beginning of this article, it is worth noting that remote education is not a new invention. It used to be conducted in the form of correspondence. It is true, however, that it was the period of the pandemic (covid) that brought the necessity and, as a result, the popularity of this form of education. Education through the use of new technologies, including the Internet, in order to reach all interested parties.

Teaching and learning with the use of modern telecommunications and information technologies is already a permanent component of the reality of education in and around the world most countries Teaching via the Internet, which is one of the forms of distance education, breaks certain stereotypes regarding the so-called knowledge transfer process. R. Lorens defines the term e-learning as "the learning process, implemented on the basis of communication solutions necessary for its conduct, using a web application through which the content of the training is presented, and which participants use under the supervision of a teacher" [1]. New trends in education related to the development of information technology and telecommunications are not dictated by a momentary fashion or only by the desire to make outdated forms of school education more attractive. Rather, they should be treated as a response to the requirements of the changing economy and culture [2]. Online education as a method of conducting a didactic process, which is characterized by a lack of unity of place and, in general, also time of participants in this process, does not concern only adults in our country. As L. Stemplewska writes, The process of trust management is very important as it is an

activity that builds a sense of reliability, a mutual sense of satisfaction with the certainty of what may happen [3].

This text aims to present the results of research, the issues of which focus on getting to know students' opinions on remote learning and the possibility of using various methods and applications by them to improve the learning process.

The following specific problems were identified in the work:

1. Do the respondents know what applications and programs used during remote learning?
2. What are the disadvantages of e-education in the opinion of students?
3. What are the advantages of e-education in the opinion of students?
4. What is the knowledge of the possibility of using various methods in e-education - in the opinion of students?

Analysis of the rest of the research and publications. The survey method was used to carry out the research [4]. The poll is treated primarily as a technique of public opinion research, which has the character of quantitative research, which allows for relatively precise determination of the scale and extent of the phenomenon. The basis for the proper use of this method is to select the appropriate representative group from a larger total. It is important that it presents all the most important features of the studied population and that it provides the researcher with all of them in real time necessary information to solve the research problem. According to T. Pilch, this method is used to study the opinions of groups and specific communities and is carried out on the so-called

representative sample [5]. Therefore, this method correctly fits into this research concept.

A selection of typical units was used. This selection is one of the frequently used methods of non-random selection. It consists in selecting the most typical representatives of the general population by adopting average units. It is believed that these units, due to their "mediocrity", do not have to be too numerous [6].

The purpose of the article is analysis of the main problems and positive aspects of the introduction of electronic educational tools.

Presentation of the main research material. The survey research covered students

of philology (German, French, Spanish, English) and students of pedagogy (early school and pre-school as well as general pedagogy and pedagogy with the specialty of diagnosis with therapy) at one of the private universities in Warsaw. The population of the respondents are people who work or will work in education. At the same time, it is assumed that they should know the answers to the questions in the questionnaire regarding distance learning, because as future educators, they experienced e-education from the position of a student or teacher.

Table 1 – Employment of respondents [N=83]

Employment of respondents	Number	Percent
school	14	17
kindergarten	25	30
nursery	3	4
does not work	16	19
I do not work in the upbringing, care and education industry	25	30
SUM	83	100%

Source: generated by the author

Among the respondents, 20 (24%) were active teachers/tutors, 17 (20%) were employed as teacher assistants, 6 (7%) worked as a babysitter or nanny in a nursery.

In addition, 59 (75%) respondents usually do not organize distance learning training at their place of employment. This means that the

knowledge of most respondents results from self-education and everyday experience in the field of e-education.

The age of the respondents is presented in the table below. The data contained therein show that the largest group are people aged 36-40.

Table 2 – Age of respondents [N=83]

Age of respondents	Number	Percent
20-25	17	20%
26-30	11	13%
31-35	15	18%
36-39	25	30%
40-45	11	13%
46-50	4	5%
Over 50	0	0
SUM	83	100%

Source: generated by the author

Table 3 – Opinions of respondents on the effectiveness of distance learning and intention to use new technologies at work (N=83)

Indicators	affirmative answers		negating answers	
	Number	Percent	Number	Percent
E-education is effective	69	83%	14	17%
Intention to use new technologies in professional work	81	98%	2	2%

Source: generated by the author





Generally, the respondents speak positively about remote education. The vast majority are of the opinion that e-education is effective and they definitely intend to use new technologies in their future work. In addition, the majority of

respondents (54) (68%) believe that they are able to verify the correctly assumed learning outcomes by conducting classes in the on-line system.

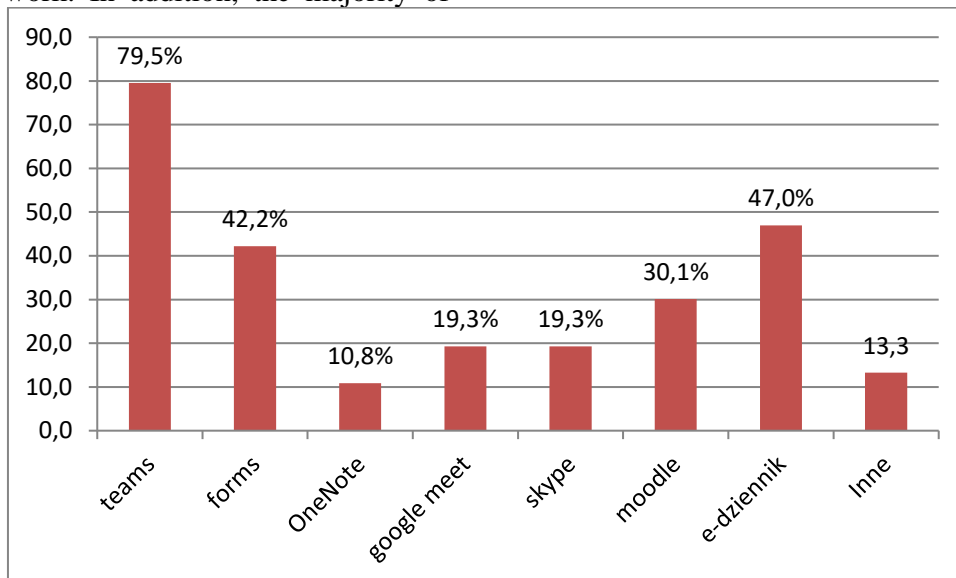


Figure 1. Use of selected remote learning applications at work (N=83)
Source: generated by the author

The respondents showed knowledge of various programs used for remote learning. The most popular of them are Teams and e-journal and Forms.

Additionally, 78 (95%) of respondents agree that Teams is the most popular remote learning platform.

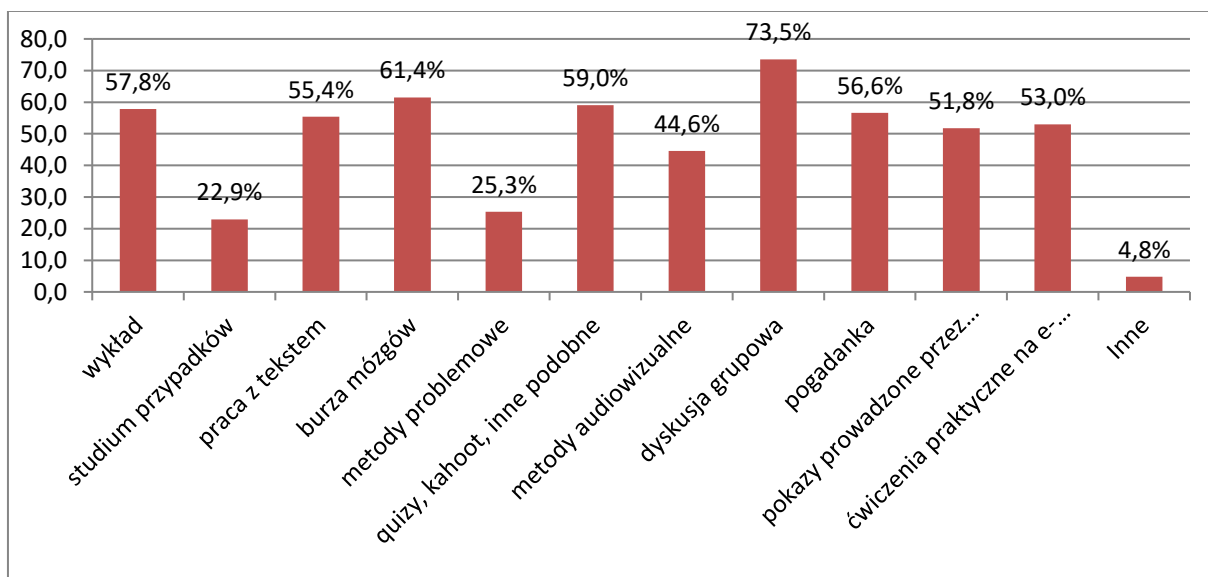


Figure 2. Using or intending to use selected methods in distance education (N=83)
Source: generated by the author

Respondents indicate group discussion as the most frequently used method in e-education. Other popular methods include: brainstorming, online quizzes, talks, lectures, as well as teacher-led demonstrations and practical exercises on the e-board.

Only 18% of respondents confirmed the knowledge of the LearningApps application, which certainly supports and diversifies the learning process.

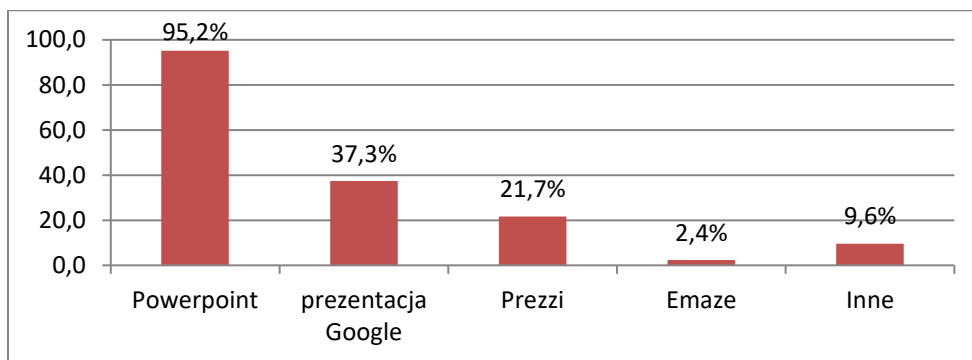


Figure 3. Using selected applications to create presentations (N=83)

Source: generated by the author

The most popular method of giving, which is a lecture, during remote learning is almost always supported by a presentation (show), this is due to the fact that a large group of students are visual learners. This way of conducting classes using the feeding method increases its effectiveness. PowerPoint is the most popular presentation software

In addition, respondents very often use iconography or diagrams to enrich the presentation used to conduct classes. The majority, 59 (75%) of the respondents, disagree with the statement that during online lessons, in order to activate students, teachers should order cameras to be turned on.

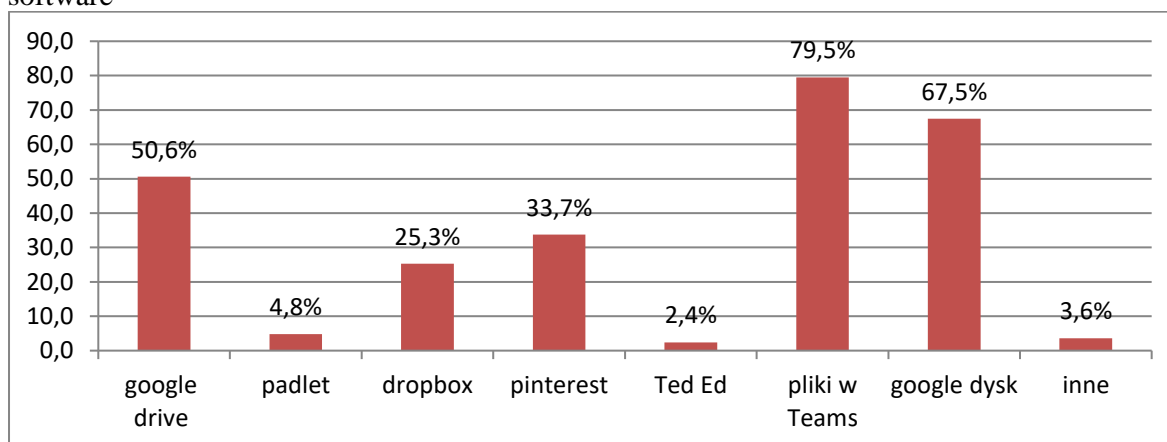


Figure 4. Using applications to share documents, photos and videos (N=83)

Source: generated by the author

During remote classes, respondents share files and other documents most often via Teams and Google drive, Google drive. File sharing is,

for example, sending homework, developed issues to the teacher. Other applications are not so common.

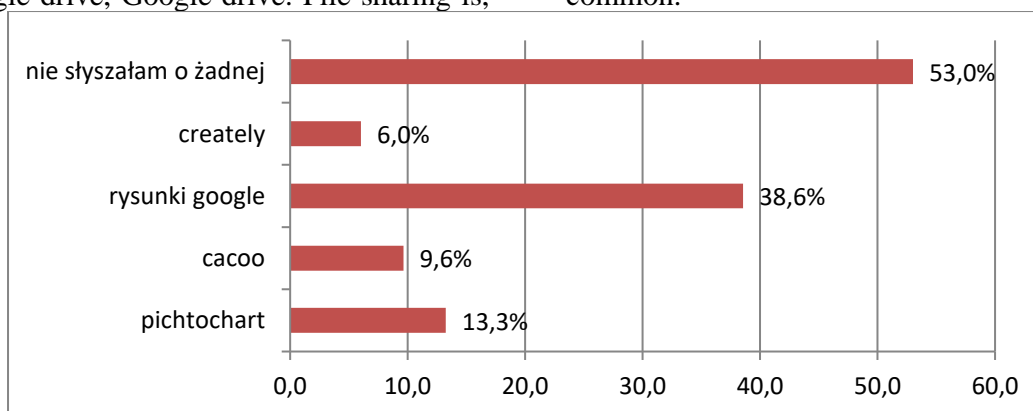


Figure 5. Knowledge of selected applications used during online learning (N=83)

Source: generated by the author



Most of the respondents admit that they have little knowledge about the variety of applications that can support e-education. Perhaps this is due to the lack of training and indicates low effectiveness of self-education in this area.

At the same time, 59 (72%) of the respondents know where to look for e-materials on the Internet for learning at schools or for students' independent work. Despite this, the major-

ity of respondents, ie 62 (76%), did not use the resources of the Integrated Educational Platform. Only 38 (47%) are aware of the existence of such a platform and know that someone else has used it. 60 students (75%) know the knowledge portal for teachers with free educational resources that are adapted to all stages of education (Scholaris).

Table 4 – Advantages of e-education (N=83)

POPULAR ANSWERS	L	%
helps you save on commuting	80	96,4
allows you to eliminate paper documents and training materials	52	62,7
easy and convenient access to knowledge	73	88,0
I can study and take care of my child at the same time	47	56,6
comfort and time saving	74	89,2
eliminating the phenomenon of social exclusion (for people with disability; mothers with children, people who cannot afford commuting, etc.)	49	59,0
access to numerous didactic materials online	66	79,5
attractive forms of content presentation	52	62,7
higher scores on online exams	24	28,9
the possibility of conducting training for a very large group of listeners	53	63,9
easy supervision of learning progress and checking the acquired knowledge	29	34,9
Other	3	3,6

Source: generated by the author

An extremely important, most often indicated positive aspect of distance learning is its economic aspect - it allows you to save on commuting. In addition, it increases the educational chances of groups at risk of social exclusion, e.g. people with disabilities, single mothers with children who do not have support in care. E-education was perfectly summed up by one of

the respondents: “I am currently participating in online classes and they are superbly prepared and effective. Everything is at your fingertips - recorded lectures for revision, materials sent, everything is organized. Personally, I am very happy with this form of learning and would not trade it for any other.”

Table 5 – Disadvantages of e-learning (N=83)

POPULAR ANSWERS	L	%
Limiting interpersonal contacts	64	77,1
Lack of motivation and self-discipline	19	22,9
No possibility to organize practical classes remotely, e.g. workshops	22	26,5
Technical problems - limitations in the Internet supply or too slow a connection	51	61,4
no possibility to contact other participants of online classes.	24	28,9
more time-consuming and cumbersome communication, e.g. waiting for an e-mail response or via an Internet message, than in the case of direct "live" communication	14	16,9
fewer interactions and activities during the training itself, it is not always possible to conduct all educational games and activities online that are possible in real life	26	31,3
lack of control over what the student does on the other side of the computer during classes	37	44,6
lack of control over the reliable performance of the test by the student	24	28,9
Other	4	4,8

Source: generated by the author



It is indisputable that e-education reduces the form of interpersonal contacts and makes them poorer. At the same time, 62 (77%) of the respondents stated that they did not lack direct contact with the teacher. But as many as 63 (78%) disagree with the statement: "If I could, I would prefer to learn by participating in classes directly". Interestingly, half of the students disagree with the statement that face-to-face learning is more effective than

online. Therefore, it should be assumed that the profits from e-education are much stronger.

On-line education is most often disturbed by noise at home, conversations of household members and other factors from the student's environment, technical problems with the Internet connection and software, as well as a weak Internet connection.

Table 6 – Advice given by respondents to teachers in the context of increasing the effectiveness of online lessons (N=83)

Categories	Council to make remote education more effective
Communication atmosphere	conduct dialogue and conversations of practical importance for a given discipline; additional time for group integration, e.g. through a casual conversation; conduct classes in a pleasant atmosphere, do not stress students, Specific messages, packaging, calm, good organization of work.
Methods	prepare interesting presentations; e-textbooks, educational platforms, didactic games, group work, diversifying classes with photos and videos, group work, Teams rooms, do not overdo it with the amount of material; short classes in small groups, setting general rules for classes, e.g. the method of reporting, sending tasks, e-poll; case study, brainstorming, e-board, e-textbooks, quizzes, wordwall.
Activation	Conduct interesting activities with the activation of students.
Technical aspect	Enabled webcams in children; available technical support for people not familiar with the system.

Source: generated by the author

This research can be treated as a kind of pilot, due to the relatively small population of respondents. However, according to the definition of the selection of typical units, such a small population of respondents is sufficient to draw conclusions from the research presented in this text.

Investing in human capital aims at improving employees' skills and qualifications. These investments must contribute to creating a favorable climate for sharing knowledge within a team, improving employees' motivation and increasing productivity. Investing in development of human capital must have an effect in the future which will enable employees to carry out their tasks freely in new and unpredictable conditions. Creating the right conditions for increasing human capital efficiency is not an easy task. However, ongoing technological changes and acceleration of civilization development require making every effort to welcome the new reality in which it will be easier for all market players to find

themselves. There are a lot of reasons for a need to deepen the research in the field of human capital development.

Conclusions and prospects for further research are presented in the form of answers to research problems:

1. Respondents know many remote learning applications and programs, the most popular of which is Teams.
2. The biggest disadvantage of e-education is the lack of direct contact with the teacher and other pupils/students, although these data are not clearly significant.
3. The greatest advantage of e-education is its low organizational, time and financial costs.
4. Respondents have the possibility of using various methods in e-education and are in favor of using activating methods. Unfortunately, they have little knowledge of the existence of a variety of applications.

Innovation is the main driver of economic and social progress. Its absence results in





stagnation both in the economy and in various spheres of social life. Economists emphasize the importance of large-scale investments in innovative programs, including education, which will not only help revive the economy in the near term, but also in the long term.

The selected research results presented here were related, as already indicated, to the declarations of current and future employees of the Schools. Undoubtedly, the crisis caused by the COVID-19 pandemic has once again revealed the need for innovation and innovation in education and other areas of social life. Meeting this need requires well-thought-out changes in teacher education and professional development. In preparing teachers for work, it is necessary to move away from the narrowly understood didactic effectiveness in favor of, among others, developing teachers' attitudes in the field of introducing changes in education and their innovative behavior.

It must be stressed that major reforms are needed to improve the quality of teacher training in the use of new technologies.

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