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Online Learning During the Pandemic in the Experience of Future Teachers

Zdalna edukacja w czasie pandemii
w doświadczeniach przyszłych pedagogów[1]

Abstract: The coronavirus pandemic resulted in a very difficult global situation which led to total and forced isolation in social life and interpersonal communication. In the area of education it was a new and unexpected challenge which resulted in the model of teaching and learning online. Also, it is a new experience both for the students and for the teachers. This fact was the author's inspiration to carry out empirical research in order to learn about the students' opinion on remote education with reference to their personal experience and participation in e-learning.

Therefore, the main research problem was formulated as follows: *What are the students' opinions on online education in the time of the pandemic?* In the author's own empirical research, the diagnostics assessment was applied with the SWOT questionnaire. The survey was carried out at the turn of May and June 2020 in two selected universities. 172 students of pedagogy specializations took part in the research. The results indicate that remote education has both strengths and weaknesses. Nevertheless, the percentage distribution of the collected data is higher in the aspect of weak points. There is no doubt that there are still many actions we should implement in practice and everyday academic education. Perhaps it would be a creative solution to introduce selected online learning elements into our studies. This may help the students acquire new IT and digital competences, as well as develop active approach to learning, self-discipline and independence in studying.

Keywords: online education, coronavirus COVID-19, pandemic, online education

Abstrakt: Pandemia koronawirusa spowodowała na globalną skalę bardzo kryzysową sytuację, która doprowadziła do całkowitej i przymusowej izolacji w życiu społecznym oraz komunikacji międzyludzkiej. Na płaszczyźnie edukacji było to nowe i niespodziewane wyzwanie, które doprowadziło do zastosowania modelu nauczania poprzez formę zdalną. Jest to również nowe doświadczenie zarówno dla studentów jak także dla nauczycieli. Fakt ten był inspiracją do przeprowadzenia empirycznych badań własnych, których celem było poznanie opinii studentów na temat tej formy nauczania w odniesieniu do ich osobistego doświadczenia i realizacji e-learningu w praktyce akademickiej.

W związku z tym, główny problem badawczy sformułowano następująco: *Jakie są opinie studentów na temat zdalnego nauczania w czasie pandemii?* W empirycznych badaniach własnych zastosowano metodę sondażu diagnostycznego z techniką ankiety, wykorzystano kwestionariusz SWOT. Badania zostały

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[1] Polska wersja: https://stowarzyszeniefidesetratio.pl/Presentations0/2021-3-Chro.pdf

przeprowadzone na przełomie maja i czerwca 2020 roku, w dwóch wybranych uczelniach wyższych. Wzięło w nich udział 172 studentów kierunków pedagogicznych. Uzyskane rezultaty z badań wskazują, że nauczanie w formie zdalnej ma zarówno specyficzne pozytywne jak także negatywne strony. Niemniej większy rozkład procentowy uzyskanych danych jest w aspekcie słabych stron. Niewątpliwie jest jeszcze wiele działań, które powinniśmy być wprowadzone do praktyki i codziennej edukacji akademickiej. Być może pewnym kreatywnym rozwiązaniem będzie wprowadzenie pewnych tylko elementów zdalnego nauczania, co może przyczynić się do lepszego nabywania kompetencji informatycznych i cyfrowych, oraz pomóc w rozwijaniu u studentów aktywności, samodyscypliny i samodzielnej nauki.

Słowa kluczowe: edukacja online, koronawirus COVID-19, pandemia, zdalne nauczanie

Introduction

The coronavirus pandemic resulted in a very difficult global situation which led to total and obligatory isolation in social life and interpersonal communication. It was a new and unexpected educational challenge, as a result of which the model of remote education was introduced. This is a new experience both for students and for teachers. It inspired the author of this article to carry out empirical research aiming at learning about students' opinion on this form of education, with reference to their personal experience and fulfillment of e-learning in academic practice.

The main research problem was: *What are students' opinions on online education during the pandemic?* Within this scope, the following specific problems were formulated: *What are the advantages and disadvantages of remote education according to the students?*

In the author's empirical research, the method of diagnostic assessment was used with the SWOT questionnaire[2]. This questionnaire is a tool with which one may identify strengths, weaknesses, opportunities and threats of a given situation. The questionnaire included four open questions, as well as basic personal data such as the student's sex, age, name of university, as well as the structure and level of studies. Due to the restrictions and prohibitions related to the pandemic, direct contact with the surveyed students was impossible. That is why, the questionnaire was prepared in the electronic form and included online on the Survio[3] platform. It seems that it was a good, effective and safest possible way of collecting the research materials.

The author obtained the consent for carrying out the research from the authorities of two selected universities: Jesuit University Ignatianum in Kraków and Jan Kochanowski University in Kielce. The information about the research was sent to the students through university mailing systems. The request for filling in the questionnaire was preceded by a letter that contained the objective and scope of the research, as well as the link to this tool. Participation in the survey was anonymous and voluntary. The research was carried out at the turn of May and June 2020.

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[2]The name SWOT stands for *Strengths*, *Weaknesses*, *Opportunities* and *Threats*.
[3] It is an online survey system for the preparation of online questionnaires, available at: https://www.survio.com/pl/ (access: 05.05. 2020).

1.   Online education in the light of selected theories and hitherto studies

E–learning is learning with the use of information technology. It means supporting the didactic process with personal computers, smartphones, tablets (m-learning) and the internet. E-learning refers to using IT in a much broader scope than in traditional computer courses or computer supported education. Blended learning is a method that combines traditional learning techniques with remote activities carried out through internet platforms. This method is appreciated by the best universities in the world, such as Harvard, Oxford or MIT which use it on a mass scale and build "virtual classrooms", e g. edX or Coursera[4].

Online learning (including E-learning and blended learning) partially results from the need to adjust education to modern challenges. The emergence of the digital society[5] (cf. GUS, 2019), the process of digitalization, as well as increased use of modern technology in all areas of life, influence and determine the process of education. New technologies, especially IT tools, as well as other social innovations, facilitate prompt access to the existing scope of knowledge, support data processing, ensure analytic tools, and improve the process of archiving and collecting information. The representatives of young generations, who have been functioning in the internet from their earliest years, and who use all kinds of IT and communication tools as well as social media, expect modern methods of learning, new educational instruments, and new teacher-student roles.

In the context of the development of students and people living in the network society, it is worth reading the theory by Stephen Downes, called Learning 2050 (http://www.slideshare.net/Downes/learning-2050). Downes predicts that in forty years all objects will be able to communicate with people, explain what they are, and tell people how to use them. The network (which will be much more advanced that today's internet) will no longer be a passive reality, but it will become a dynamic network the elements of which will be able to communicate with one another. This network will be able to know and learn many things. Thus, according to Downes, learning will be a continuous process based on knowledge-sharing, irrespective of people's age and educational level. Education will become a "stream" and not a closed resource which we use for all our life. The essence of the educational process will be the acceptance of change and the ability to acquire knowledge needed for the proper functioning in life. Since the environment will be changing constantly and quickly, the same will happen to the tools we will be using. Each of us will create their own network of people and tools useful in the process of education.

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[4] In Poland, PUW (Polish Virtual University) has been functioning for almost twenty years under the supervision of AHE (University of Humanities and Economics in Łódź).

[5] Information technologies of the modern world have revolutionized the way of working, changed economy and exerted an irreversible influence on the way we function in the IT society.

In the report entitled *How will Education Change? Challenges for Polish Schools and Students*, Witold Kołodziejczyk and Marcin Polak introduce possible scenarios for the educational future. They enumerate three groups of such scenarios: status quo, re-schooling and de-schooling. Here is what they write: „One of the areas of the activity of OECD is education and research on the future of schools. At the beginning of the 21st century, six scenarios for the development of education were prepared. Each of them may turn out to be true, depending on the influence of various factors, such as demography, educational policy, development of internet educational resources and technologies. The scenarios were divided into three groups which were described as *status quo* (i. e. the institution of school and formal education similar to the one that appeared at the end of the 20th century), *re-schooling* (changing schools in order to adjust it to changing conditions of social life), and *de-schooling* (rejection of one, traditional model of school and introduction of different forms of education, including online education; in the most radical forecast it may mean the end of the school we know today). These scenarios may be the starting point for thinking about the way in which education will be changing" (Kołodziejczyk, Polak, 2011, pp. 19-20).

While discussing the international processes of deschooling and reschooling (cf. 2019), Guglielmo Malizia describes various forms of education carried out outside schools. He mentions Illich (cf. Illich, 1972) and educational vouchers, the SOLE (Self Organized Learning Environment) project initiated in India and developed in Europe[6] (cf. Bottani, 2013), replacing teachers with robots (cf. Castoldi, Chiosso, 2017), homeschooling, unschooling (cf. Malizia, Nanni, 2015), as well as the UN project called "Education 2030" (cf. Unesco, 2015).

From the point of view of a student, the advantages of e-learning and blended learning may include: individual course of learning (each participant chooses the scope of knowledge he/she needs, omitting the contents they already know); flexibility (the participant chooses time and place of learning according to their needs); unity and validity of learning contents (the participant does not have to worry about lower quality of educational contents as compared to other participants); attractiveness of the form (contrary to traditional forms, the educational content may include multimedia sources such as presentations, interactive graphic items, audio/video recordings, etc.).

While discussing remote teaching and learning during the COVID-19 pandemic, Aleksander Nalaskowski (cf. 2020, pp. 20-23) emphasizes three desired features of an "online student": the willingness to learn, strong motivation and self-discipline. The author adds that these features are rare among today's adolescents (cf. Nalaskowski 2020, p. 23). He also mentions other problems with online learning, e. g. parent's commitment. Nalaskowski

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[6] The SOLE Project was initiated in India in 2008-2009. Since 2014, professor Sugata Mitra from the University of Newcastle in Great Britain has been developing the idea of 'School in the Cloud', encouraging children to sit in a circle and work with a computer.

believes it is a huge challenge because, as experience shows, parents like to cede the responsibility for their kids' education and upbringing to the school. The author's summary of remote education in the times of the pandemic (which he calls the "educational prosthetic device") is as follows:

„It is not enough to apply the Marxist way of changing structures or multiplying institutional entities or regulations. We have to reach further, restructuring the social approach to education. And this is a huge task for the whole generation and a return to the sources. This is the necessity to re-instill in the young generation ambition and perhaps even set a trend for learning. Such a trend would be useful not only in case of remote learning. Moreover, we should think of long-term actions building students' curiosity of the world, cognitive motivations, reliability, and discipline on all sides of this barricade. For this struggle, we have to create a social atmosphere, a toolkit; we should also review our opinions on who can and should be a teacher" (Nalaskowski, 2020, p. 23).

Apart from the advantages of online education, there are certain disadvantages. Remote learning includes processes related to the new opportunities of cyberspace and virtual world, and, indirectly, also to manipulation and psycho-manipulation which evoke negative associations. Cyberspace is where both students and teachers work. Some of them may use the internet to manipulate facts, language or emotions. Also, media, multimedia and cyberspace, e. g. applications and multimedia presentations, may be used to manipulate other people.

On the level of education, particular threats result from cognitive-intellectual dangers related to cognitive activity and school education. Such dangers include the cognitive area threats (unification and/or reduction of experience); limitations in perceiving various problems; dominance of visual materials over verbal ones; the flood of ready-made hypermedia information that make it impossible to create and use data in a creative manner; and the inability to make rational decisions and actions.

The inability to select content and information is an increasing problem as well. A lot of young people, who overuse or are addicted to the internet, fail to concentrate, synthesize or combine contents to create a logical text. Manfred Spitzer initiated an important discussion in Germany claiming that digitalization may lead to people's dementia as they use too much technology in the process of education. His famous book: *Digital Dementia. How do we deprive ourselves and our children of our minds* (Spitzer, 2013) has become the foundation for criticizing the excessive digitalization of the cognitive process, especially among children and youth. In his book, Spitzer strongly criticizes the new media and the new "pseudo-communication". He claims that excessive digitalization and modern technologies result in limiting the brain's ability to process and memorize things. Moreover, handwriting (as compared to writing on a computer) is very important for the child's development. Spitzer believes that computers exert a very negative psycho-somatic influence

on young people (e. g. addiction). Multitasking, which is promoted through digitalization, results in increasing problems with concentration, reliability while doing tasks, and mindfulness. Tablets for children are, according to Spitzer, educational evil which should be forbidden.

Overusing the internet and computers is also criticized in a famous book by Robert Putnam: *Our kids – The American Dream of Crisis* (2015). In the context of computerization and digitalization, Putnam emphasizes unequal access to technologies, the asymmetry of information, and, first of all, the fact that children from poor families use the internet in a thoughtless manner. They only treat it as entertainment, and not as the source of knowledge and information.

From the student's point of view, the barriers for implementing e-learning and blended learning include: poor knowledge of information technologies and fear of using new tools; the lack of access to proper computer technologies – many possible users of e-learning fail to posses good quality computer equipment and accessories (e. g. webcams, earpieces with microphones) or a fast internet connection; general lack of trust to new things (a conservative approach to many areas of life, including education); a sense of isolation and loneliness (some online learning users have problems with talking to people with whom they cannot contact directly); and the lack of self-discipline, which means that many people cannot motivate themselves to learn.

In the times of COVID-19, online learning has become popular and some studies concerning this form of education have already been published. The objections of parents and children to remote learning are formulated, e. g. on the popular educational platform called Librus (2020).

Those problems refer to:

- the limited access to equipment (1/3 parents cannot afford to provide each of their children with proper computers and accessories for online learning. In those families equipment is shared by a few people);

- the scope of remote education (4% parents declare that online learning is not carried out in their children's schools; 9% parents say that online learning includes less than a half of school subjects);

- the formula of online education (lecturing methods definitely prevail. According to the parents, teachers mainly choose indirect contact with the student: they send children exercises from books and tell them to do the tasks on their own);

- the excessive commitment of the parents (21% parents who took part in the survey admit that they spend five or more hours a day working with children on their lessons);

- the lack of direct contact with peers (59% of the surveyed people) and teachers (54%);

- individual work, e. g. planning and using different methods of learning (34% of the surveyed people);

- children's overload with work (36% parents claim that there is definitely too much work, and 35% say that there is rather too much work).

Teachers also report many problems (Gryc, 2020). Here are some of their utterances: "Preparation for online teaching takes a very long time. Sometimes I work for more than 12 hours. Receiving and reading my students' works is a difficult and toilsome task. Checking them and entering descriptions into the e-register takes a few hours, too. I am exhausted because there is much more work than before". "After a few weeks of online education I can definitely say that this is fiction. While teaching online, I do not feel any satisfaction with my job. I do not know whether my effort is wasted or not. This is just giving information to the students, nothing more. I do not feel the atmosphere of the class. A teacher uses a tone of voice in his/her work; he/she knows what to emphasize with it. Another issue is the specific nature of a given school subject. Sometimes it is impossible to carry out online lessons because a teacher needs more time to discuss various topics with the students. A brief instruction is not enough in such cases. In order to teach and learn, we need the energy of the class, questions, doubts, a "living" contact between a teacher and a student. Now the only thing we have is voice".

In their scientific report concerning online education during the COVID-19 pandemic, Jacek Pyżalski and Wiesław Poleszak (cf. 2020, pp. 28-36) emphasize that relationships (student-student, teacher-student, student-parents), which are the core of traditional education, remain in the same place in remote education. It is a huge challenge to build them in the conditions of indirect communication.

2. Characteristics of the surveyed group

172 students participated in the research. The selection of them was purposeful. The author only chose students of pedagogical specializations. The general characteristics of the surveyed students will be discussed taking into account such variables as: sex, age, the name of the university, and the cycle of studies.

Table 1. Characteristics of the surveyed students

Variable	Number	Percent of the total number of people
Sex		
Woman	155	90.1
Man	17	9.9

Age		
18-20 years	32	18.6
20-22 years	76	44.2
22-24 years	45	26.1
24-26 years	16	9.3
26-28 years	1	0.6
28-30 years	2	1.2
Name of university		
Jesuit University Ignatianum in Kraków	94	54.6
Jan Kochanowski University in Kielce	78	45.4
Cycle of studies		
The first	106	61.6
The second	45	26.1
Uniform master's studies	21	12.2

Source: *the author's own research*

The surveyed group of people included 90.1% women (155 people) and only 9.9% men (17 people). There were much more women than men. We should remember that in Poland there are more female than male students, and that mainly women study pedagogical subjects at universities. Taking into account the age variable, the surveyed people were 19-30. Most of them: 44.2% (76 people) were 20-22 years old; 26.1% (45 people) represented the age group of 22-24; 18.6% respondents were below 20 (32 people); 9.3% (16 people) were 24-26; and 1.2% students (2 people) were 28-30 years old. Only one person who took part in the survey was 27, which constituted 0.6% of the total group. The average age of the surveyed students was M = 22.16, and the standard deflection was SD = 1.87.

The students represented two selected universities: 54.6% of them (94 people) studied at the Jesuit University Ignatianum, while 45.4% (78 people) were the students of the Jan Kochanowski University in Kielce. All of them were students of full-time studies in the pedagogy specialization. Taking into account the level of studies, the percentage of the surveyed people was as follows: 61.6% students (106 people) participated in the first-cycle studies, 26.2% (45 surveyed people) took part in the second-cycle studies, and 12.2% (21 people) of them were on uniform master's studies.

172 survey sheets were submitted to the qualitative and quantitative analysis. The questionnaires were varied in terms of the contents, because some of them only included single words, phrases or sentences, while others were more developed. It is worth emphasizing that many respondents provided extensive utterances, which suggests that the

students found the survey interesting. It may result from their need to express their thoughts, as well as critical opinions and assessments related to online learning in a very difficult situation such as the coronavirus pandemic and the time of social isolation.

In order to carry out the analysis of the contents the students provided, the method of categorizing was applied. Thus, a very important element of the analysis included categorising the responses in order to obtain a uniform message, similar texts, reflections, feelings and opinions of the respondents. Then, a critical analysis of the data was carried out, both in terms of quantity and quality.

The author will present and discuss the results of her own empirical research with reference to the advantages and disadvantages of e-learning. The advantages shall include opportunities and chances, while the disadvantages shall contain weaknesses and threats. Finally, the author will formulate conclusions and postulates for educational practice.

3. Advantages of online education in the opinions of the surveyed students

An important and valuable issue related to the research was learning about and analysing the students' opinion on the advantages of remote education. In order to achieve this aim, the students were asked to answer two questions: *What are the strengths of e-learning?,* and: *What opportunities are related to e-learning*?

Since those were open questions, which made it possible for the respondents to provide free and open answers, many different replies were obtained. In order to arrange and analyse the data, the author distinguished three main categories of the answers which were presented in the following table.

Table 2. Categories of the surveyed students' replies concerning strengths of online education

Categories of replies	Number of indications	Percentage of indications (%)
Saving time	58	33.7
Individual time management	34	19.7
Study/work at home	27	15.6
Individual learning	26	15.1
Comfort	24	13.9
Being at home	17	9.9
Cost reduction	14	8.1
No strengths	13	7.5
Access to materials	12	6.9
Continuity of the learning process – the ability to continue studying	9	5.2

Contact with teachers and transfer of information	8	4.6
Connecting learning with work	5	2.9
Reduced stress	3	1.8
Reducing the coronavirus spreading	3	1.8
Better concentration	2	1.2
One does not have to participate in the classes	2	1.2
No delays	2	1.2
Other strengths	13	7.5

Source: *The author's own research.*

According to the students, one of the greatest strengths of online education was saving time because of the fact that they did not have to go to universities. This indication was made by 33.7% students (58 replies). The next good point indicated by the respondents was individual time management – 19.7% (34 indications). A little less, i. e. 27 students (15.6%) mentioned studying/working at home, and 15.1% students (26 indications) claimed that individual learning was an advantage. An interesting and intriguing indication is the selection of the category specified as comfort, which constituted 13.9% of the replies (24 answers). It should be emphasized that those were mainly single-word answers. We may suspect that remote education is comfortable because it can take place any place and any time, which makes the atmosphere of work comfortable and relaxing.

Within the context of the coronavirus pandemic and social isolation, being at home is a particularly important answer. It was indicated by 9.9% students (17 answers), so we can assume that staying at home and following the epidemiological regulations was important for those students. In this context, it is also worth mentioning the answer according to which one of the advantages of e-learning is limiting the coronavirus spreading, which was given by 0.9% students (3 answers).

The reduction of costs was mentioned by 8.1% students (14 replies). This is definitely related to the fact that the students did not have to go to the universities, buy tickets or rent flats. In this aspect, especially in the situation of the students who have to commute to the universities, remote learning is definitely advantageous.

In the opinion of 7.5% students (13 indications), remote education has no advantages. It seems useful to consider why they think so. Perhaps the surveyed students do not have much personal experience with online learning, or maybe they just do not see any advantages related to this form of education.

Another percentage distribution, i. e. 6.9% (12 indications) referred to the access to educational materials. In particular, the surveyed people appreciated the opportunity to record videos and play them later. They were also satisfied with the presentations and other materials sent by the teachers. Another important strength of online education is the

continuity of the educational process – the ability to continue studies in the difficult pandemic situation. This issue was mentioned by 5.2% students (9 indications). Contact with the teachers and transfer of information was appreciated by 4.6% students (8 indications). They mainly emphasized the speed of connection and transfer, which is definitely related to multiple opportunities provided by digital technologies. For 2.9% students (5 indications) one of the advantages of online education is combining studies with work and other obligations. A little less, i.e. 1.8% students provided two categories of answers: lower stress level and fighting the coronavirus through limiting its spreading (three indications were given in each of the category). The answers: better concentration, no delays, and the fact that one does not have to participate in the classes, were given two indications each, i. e. 1.2% students.

There were not many students who mentioned the following strengths of online learning: a sense of safety, the safest form of education, very good organization of e-learning, using new technologies, more exercises in English, improving the ability to write, interesting classes, no noise, respect for the teacher, documenting teachers' work, saving paper, self-discipline, or the fact that it is a new experience.

To sum up the discussion and analysis of strengths of online learning with reference to its advantages, we can conclude that the students notice many good aspect and benefits that are related to this form of education.

Another question included in the questionnaire directed to the students was related to their opinion on e-learning opportunities. In this case, the answers were different, too, which is why the data was categorized and presented in a table.

Table 3. Categories of opportunities related to online education in the students' opinions

Categories of answers	Number of indications	Percentage of indications (%)
continuation of studies	22	12.7
gaining new IT competences	17	9.9
no opportunities	15	8.7
learning about, developing and using new technologies	13	7.5
online lectures	12	6.9
the classes are available for the disabled and the ill	9	5.2
combining study with work	7	4.0
completing the semester	5	2.9
self-education	5	2.9
obtaining better marks	4	2.4
saving time	4	2.4

individual time management	4	2.4
lower stress	4	2.4
great potential – a step towards the future	4	2.4
a good and interesting method of studying	4	2,4
learning self-discipline	3	1.8
learning independence	3	1.8
comfort	3	1.8
good alternative and solution in difficult and crisis situations	3	1.8
conducting classes for a very big group of people	2	1.2
conducting courses and training sessions without leaving home	2	1.2
Other opportunities	9	5.2

Source: *The author's own research.*

According to the result analysis, the largest percentage distribution, i. e. 12.7% (22 answers) refers to the answer that continuation of studies is the greatest opportunity of e-learning. I seems that it is very important for the students who wanted to complete their studies and close the stage of life connected with choosing and finishing the studies that began before the pandemic. A little less students – 9.9% (17 answers) declared that it was important for them to acquire new IT competences. 8.7% of the surveyed people (15 indications) answered that they see no opportunities as far as online education is concerned. On the one hand, this result is quite surprising because one might have supposed that young people, who spend a lot of time in front of computers and often use the internet resources, would be satisfied with e-learning and that they would see many opportunities to use such form of education in future. On the other hand, perhaps it was difficult for the students to indicate specific advantages of this form of education because, at this stage, it was a new experience for them. Moreover, they might have experienced digital burnout. Also, it is worth mentioning that this category (the fact that the students see no opportunities related to online education) may be considered in a negative aspect.

Other opportunities mentioned by 7.5% students (13 answers) included learning, developing and using new technologies, and conducting lectures online 6.9% (12 students). A little less students, i.e. 5.2% (9 people) believes that the access to classes conducted in this form is an opportunity for the disabled and the ill. For 4.0% (7 people) it is an opportunity to reconcile studying with work and other obligations. It seems that this is an important advantage of online education, especially for those who, for various reasons, have to work during the studies. The opportunities such as completing the semester and self-education received 5 answers each (2.9% students). A little less answers, i. e. 2.4% (4 indications)

referred to the opportunities of e-learning in the context of six issues such as: saving time, individual time management, lower stress, obtaining better marks, a good and interesting method of work, and the fact that e-learning has a great potential and it is a step towards the future.

Also, 1.8% students believes that it was important for them to learn self-discipline and independence, to experience comfort related to this form of education, and to use online learning as an alternative and solution in difficult times of the pandemic. All the three statements received the same number of indications, i. e. 3. A similar number of answers (2 indications each) were provided for the opportunities such as conducting classes for a very large group and conducting courses and training sessions without leaving home. Other replies, which only obtained one indication each, include: fast transfer of information, technological progress of many lecturers, opportunity to train lecturers, opportunity to make money on one's own online courses, changing the approach to the process of teaching and learning, a chance for studying for the students who cannot afford it, and time for building family relationships. In the context of the coronavirus pandemic it was particularly interesting that for some students online education was just a chance to survive and a good option despite the fact that it deprived us of many things.

To sum it up, it is worth mentioning that the surveyed students notice many different opportunities connected with online education. Nevertheless, it would be useful to analyse this deeper and learn their expectations related to this form of teaching and learning.

4. Negative aspects of remote education in the opinions of the surveyed students

Also, it is interesting to learn about the disadvantages of online education. That is why, in the author's empirical research, the students were asked to answer the question: *What are the weaknesses of e-learning?* This open question made it possible for the author to collect many different answers which were arranged in particular detailed categories presented in the below table.

Table 4. Categories of the surveyed students' replies concerning weaknesses of online education

Categories of answers	Number of indications	Percentage of indications (%)
too much content and works to prepare	94	54.6
technical problems	65	37.7
limited direct contact with people	38	22.0
difficult contact with the lecturers	31	18.0
poor quality of classes and conducting them in an unreliable manner	26	15.1

no motivation for learning	10	5.8
being unprepared for e-learning	6	3.4
the lack of access to materials and books	5	2.9
too much time spent in front of the computer	5	2.9
stress, frustration	5	2.9
costs	5	2.9
no practical classes	4	2.3
poor organization	4	2.3
poor level of education	3	1.8
loneliness	3	1.8
worse ability to acquire knowledge	3	1.8
lecturers' misunderstanding of the students' situation	3	1.8
no self-discipline	2	1.2
tiredness and overload	2	1.2
other weaknesses	7	4.0

Source: *The author's own research.*

The analysis of the collected data shows that the distribution of the answers is varied. In the opinion of the students, too much content and too many works to prepare are the worst aspects of online education. This category was mentioned by more than a half of the respondents, i. e. 54.6% students (94 indications). The main problem was the necessity to prepare many written tasks and works which have not been explained well enough. Also, the students were given a lot of new materials for individual work that were not discussed or explained by the teachers. Also, technical problems were the reason why remote education was difficult. Such problems were experienced by 37.7% students (65 utterances) who took part in the survey. In this respect, the students paid attention both to the issues related to computer equipment and to its quality, and to the internet access, the internet connection overload and other problems, as well as disturbed operation of educational platforms. 22% students indicated that a negative aspect of this form of learning is a limited contact with people. This category was mentioned by 38 students. One can definitely assume that it resulted from the reduction of meetings and contacts with others in order to avoid spreading the coronavirus infection. This restriction has been a challenge for the students, especially because of the fact that the situation occurred suddenly and unexpectedly. Also, it is worth mentioning that the surveyed students belong to the generation living in the times when people did not have to limit their functioning in any way. As for other weaknesses of e-learning, 18% students (31 indications) mentioned a difficult contact with the teachers, while 15.1% (26 answers) claimed that the quality of the classes was poor and that they were

conducted in an unreliable manner. Much less, i. e. 5.8% students (10 people) declared that remote education results in the lack of motivation for learning, and 3.4% (6 answers) wrote that being unprepared for e-learning was a problem, especially on the part of the teachers. The following three categories were also indicated as online education weaknesses: too much time spent in front of the computer; stress and frustration; costs. Each of these categories was mentioned by the same number of students: 2.9% (5 indications in each category). These problems were mainly connected with buying computer equipment or fast internet connection, and with the lack of access to proper materials and books. We should definitely pay attention to the fact that in the time of social isolation libraries were closed. Thus, the students could only use their own books, provided that they had them at all. Also, they could use e-books but it was definitely more difficult for them than using books from libraries. Two other negative aspects of online learning were indicated by 2.3% students (4 people) in each category: no practical classes and poor organization.

The following categories obtained 1.8% answers each (3 indications per category): poor level of education, loneliness, worse acquisition of knowledge, and the fact that the teachers do not understand the students' situation. The factors such as the lack of self-discipline, as well as tiredness and overload, were mentioned by 1.2% students (2 indications in each of the categories). Single indications referred to the following utterances: using different educational platforms which resulted in disorganization, worse concentration, no team work, the lack of individual approach to the student, and sharing computer equipment with other family members. The following statements were also important and interesting: because of online education the place of rest becomes the place of work and study; due to remote learning one has to be at home all the time. We may assume that it was partially related to the observance of the safety rules and the "stay at home" campaign.

An important issue taken up in the research was the analysis of the students' opinions concerning threats that may result from online learning. The respondents were asked the following question: *What threats are related to e-learning?* The analysis of the answers also indicated that the opinions were varied, so the author specified a few main categories, too. Detailed data related to this issue was presented in the following table.

Table 5. Categories of threats related to online education in the opinions of the surveyed students

Categories of answers	Number of indications	Percentage of indications (%)
Low level of education	45	26.1
Health problems	33	19.2
Weakening of interpersonal relationships	33	19.2
Social isolation	14	8.1
Cheating	13	7.5

Problems with passing some exams	12	6.9
Stealing computer data, hacking one's account	6	3.5
Low motivation for learning	5	2.9
Laziness	5	2.9
No practical competences	5	2.9
No commitment on the part of the student	4	2.4
Computer equipment failure	3	1.8
Comfort	3	1.8
Digital exclusion	3	1.8
Plagiarism	3	1.8
Other threats	14	8.1

Source: *The author's own research.*

The percentage distribution of these answers is very unequal and varied. There is no doubt that, in the opinion of the surveyed students, the most serious threat related to remote learning is a low level of education. This category was mentioned by more than ¼ students, i.e. 26.1% (45 indications). Thus, one may suppose that the quality of education and its high level is important for the students who believe that good quality studies will make it possible for them to find a good job in future.

The next threats mentioned by the respondents were qualified as health problems and constituted 19.2% of the replies (33 indications). Within this group, the following health problems were especially listed: worse sight and hearing, pains in the backbone, overweight, addiction to the internet, tiredness, stress, frustration, depression, neurosis, as well as mental health disorders. In this respect, it is worth mentioning that during the pandemic people aged 18-24 (i. e. the students as well) reveal a higher increase in the symptoms of depression and general anxiety disorders than other age groups. Some of these young people have even experienced suicidal thoughts or self-harm behaviours in this difficult time (cf. Gambin et al., 2020).

The same number of students – 19.2% (33 indications) mentioned limitation of interpersonal relationships. This is a very important statement because it makes it possible for us to appreciate the role of interpersonal contacts in a person's functioning. One may conclude that the presence of another person and interpersonal contacts are very important both for the students and for the whole educational process. There is no doubt that social isolation is a challenge for a person and it reveals the value, need and significance of interpersonal relationships. Also, it seems that for the students who will work as teachers the issue of building interpersonal relationships is very important. Moreover, 8.1% students (14

utterances) perceives social isolation as a threat resulting from the lack of direct contact with people. A little less, i. e. 7.4% of the respondents (13 indications) declared that cheating is a significant threat related to online education. Some students are dishonest as they do not write works on their own, and they cheat during tests and exams. One may reach the conclusion that most students are aware of such improper practices. Another group of the students - 6.9% (12 respondents) believe that online learning threats include problems with completing a given subject, passing some exams or finishing a course or the whole academic year. A little lower percentage distribution – 3.5% (6 indications) refers to stealing data or hacking one's internet account, and this is definitely a threat that results from using the internet very often. In this aspect, the students mainly paid attention to stealing information by hackers, processing one's personal data or cyberbullying. The following answers were given by the same (2.9%, i.e. 5 indications) number of students: laziness, low or no motivation, and the lack of practical competences. For 2.4% students (4 answers) an online education threat is the lack of the student's commitment to the process of learning. Other dangers mentioned by the respondents, which were grouped into three categories with the same percentage of answers (1.8%, i.e. 3 indications), include: failure of the computer equipment, comfort, digital exclusion or plagiarism.

The group of other threats mentioned by the students (only one indication per each threat) included: the impossibility to check the knowledge and effects of studying, unfair marks, no group work, lower responsibility, failure to read books, weak contact with books and magazines, decrease in the value of books, problems with handwriting, lowering the competence of self-presentation and huge amount of electricity used to work on the computer. What is also valuable and interesting are the declarations that threats of online learning include the lack of friendships, getting used to this form of education, lowering the value of traditional studies, as well as the fact that universities become the places of making diplomas and not developing knowledge.

One has to admit that there are many threats related to online education, but it is possible to think about and implement some actions that may help reduce or eliminate such problems.

The analysis of the students' opinions on good and bad aspects of online education was a very interesting activity taken up within the author's research. Nevertheless, it is useful to look at the comparative analysis taking into account whether there are more advantages or disadvantages of online learning. The students' opinions reveal that remote studying has both strengths and weaknesses. However, a larger percentage distribution resulting from the obtained data falls within the scope of negative aspects of online education. Moreover, because of the fact that, during the survey, the students did not have much experience with participating in this form of learning, one has to approach the results of the questionnaire with cautiousness.

Conclusion

The present, non-standard situation connected with the coronavirus pandemic is still a serious challenge for education and interpersonal contacts. It provided us with an interesting area of research related to preparing online education and evaluating different ways in which we can cope with the difficult situation. Due to the fact that online learning was introduced suddenly and unexpectedly, participation in the classes and conducting them was new and stressful for everyone. That is why, the above presented and discussed experiences of the students, which were gained in the time of online learning, indicate that there are still many solutions we could introduce into our practice and everyday academic work.

A constructive use of strengths and weaknesses of remote learning, as well as elimination of problems and threats related to online learning will definitely be a good solution for the future. Perhaps it would be useful and creative to introduce only a few elements of remote learning, e. g. online lectures into the academic practice. Also, we can conduct hybrid learning, i. e. combine classroom learning with online classes. This may facilitate the acquisition of IT and digital competences, as well as help students develop their activeness, independent learning and self-discipline.

The analysis of the results from the author's empirical research definitely shows that one has to be careful in thinking about fast development of remote academic learning. However, the author's conclusions may be treated as suppositions being the starting point and inspiration for further research concerning the advantages, disadvantages, opportunities and threats of online education. Thus, it is important to further reflect on whether those negative and positive experiences of the students will be reflected in specific approaches to carrying out remote classes in future. It will definitely depend on many different factors. That is why, it is important to conduct more detailed longitudinal studies on online learning from the perspective of both students and teachers. It is worth emphasizing that "the pandemic reveals various weaknesses related to material, organizational and relational resources. Some of them may be removed more easily, while others require greater material and organizational efforts. All of them require creating (reinforcing) the atmosphere of cooperation and team work" (Karwińska, Karwiński, 2020, p. 243). Also, the pandemic resulted in a serious social and economic crisis, and it revealed new solutions to problems related to forced isolation, the lack of communication, being cut off from the external world, and participating in the process of education. Remote education is definitely a huge challenge in terms of technical and logistic aspects. In the present situation in which the educational process is carried out, we can refer to very true and adequate words of Jędrzej Witkowski: "Remote education is a discipline which we are all learning (almost none of us

has taught others only online before). It is similar with the organisation of online learning – we have no experience or solutions in this area. Let us admit this and be kind to one another. Let us allow one another make mistakes and correct them. What can save us in this situation is peace and open communication among all the interested parties" (Witkowski, 2020, p. 92).

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