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## **EDUCATION OF STUDENTS OF THE POLISH UNIVERSITIES IN THE FIRST WEEKS OF THE COVID-19 PANDEMIC CAUSED BY THE SARS-COV-2 CORONAVIRUS**

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### **Abstract**

The main aim of the research was to answer the research questions: how the science went – studying Polish university students in the first weeks of the COVID-19 pandemic caused by the SARS-CoV-2 coronavirus and what were the main barriers to learning for Polish students during the COVID-19 pandemic. A survey method has been applied to collect empirical material among students. In the survey, CAWI (Computer-Assisted Web Interview) Internet questionnaire, sent via e-mail to students in the form of the invitation to the survey with a link to the survey, has been used in the survey. Research shows that the vast majority of the students felt anxiety, uncertainty about taking their maturity examinations, bachelor's and master's degree examinations and having the academic year credited on time. The main inhibitor preventing the respondents from learning at home during the ongoing pandemic was a lack of silence – quietness due to the noise of the siblings as well as remote work of the parents who had to perform their remote work during the students' classes.

### **Key words**

education • students • Poland • COVID-19 • e-learning

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### **Introduction**

The global COVID-19 pandemic caused by the SARS-CoV-2 coronavirus that has already affected over 85 million people in 191 countries and territories of the world (status as of 4 January 2021), has significantly influenced and will probably continue to have a long-term impact on the economy, culture, education, health, tourism, sport and the

socio-psychological behaviour of the inhabitants all over the world. At least until the COVID-19 pandemic situation is over, considerable changes in daily life, work, education, leisure and recreation should be expected.

Conversations with the students of the major of 'Tourism and Recreation' of the Pedagogical University of Krakow in the first weeks of the outbreak of the SARS-CoV-2 coronavirus pandemic in Poland have constituted

the reason for undertaking the research. As academic staff members, conducting lectures and didactic classes in remote forms from 12 March 2020, we observed a great anxiety among students concerning the present epidemic situation in Poland and in the world, fear for their health and health of the members of their families as well as concerns related to studying, implementation of the field exercises, and even the future of the studied major (tourism and recreation).

The survey questionnaire was made available through Google forms on 8 April 2020. As early as on the first day, 41 students replied to the questionnaire. We decided to complete the survey one month later, i.e. on 7 May 2020. This period was the most difficult for Poles in the course of the COVID-19 pandemic in Poland to date, due to the applicable strict restrictions at that time (Sleszyński, 2020). On 14 March 2020, pursuant to the Ordinance of the Minister of Health, the state of epidemic hazard was introduced within the territory of the Republic of Poland, and on 20 March 2020, an epidemic state was introduced. On 11 March 2020, Mateusz Morawiecki, the Prime Minister of Poland and Jarosław Gowin, the Minister of Science and Higher Education informed about the closure of universities for a period of two weeks (i.e. from 12 March 2020 to 25 March 2020) – this period was extended to 24 May 2020. On 25 March, strict restrictions related to the coronavirus, e.g. ban on moving around, except for performance of occupational activities or tasks, meeting the necessary needs concerning the current affairs of daily life as well as the ban on gatherings of more than 2 people, were introduced in Poland. Restrictions regarding movement by means of public collective transport and on foot as well as participation in religious ceremonies for up to 5 people were also introduced. On 8 April 2020, when we started the survey, according to the data published by the Ministry of Health of Poland, the following were registered: 5205 people infected with coronavirus, 159 fatalities and 153,390 people in quarantine

([https://pl.wikipedia.org/wiki/Pandemia\\_COVID-19\\_w\\_Polsce#cite\\_note-ilosc-3](https://pl.wikipedia.org/wiki/Pandemia_COVID-19_w_Polsce#cite_note-ilosc-3)). It should also be noted that outbreak of the COVID-19 pandemic and strict restrictions fell on the Lord's Resurrection period that has been celebrated very solemnly in Poland for centuries. For the first time since the end of the World War II, lay Catholics stayed at home and did not (personally) participate in the liturgy and rites of the Holy Week and Easter. The order for each person to cover the mouth and nose in a public place became effective from 16 April 2020.

The first phase (out of the four planned ones) of abolition of the restrictions has been started since 20 April 2020 and it concerned trade and shopping as well as possibilities of moving around for leisure purposes in forests and parks. It has been possible to conduct classes in the traditional form at universities for students of the last years of studies as well as classes that cannot be conducted as e-learning since 25 May 2020 [<https://www.gov.pl/web/nauka/od-25-maja-mozliwe-jest-prowadzenie-czesci-zajec-w-tradycyjnej-formie>]. Diploma examinations at universities in Poland were held online.

The objective of the research was to provide answers to the following research studies:

- How did learning – education of the students of Polish universities in the first weeks of the COVID-19 pandemic caused by the SARS-CoV-2 – proceed?
- What were the main barriers in relation to learning encountered by Polish students during the COVID-19 pandemic?
- Did isolation during the COVID-19 pandemic influence development of new skills among the Polish students?
- Does the outbreak of the COVID-19 pandemic in Poland and in the world have an impact on rebranding – change of the fields of study?
- How did the manner of spending free time by students during the introduced epidemic state change?
- What was the mood (mental condition) of the students during their stay in isolation like?

Online education continues to grow, assessments of this pedagogical modality become increasingly important. While the issues of online education are both complex and multi-dimensional, even small scale research efforts can prove beneficial in adding to the knowledge base (Singh & Hurley, 2017). Degago and Kaino (2015) illustrate how effectiveness of teaching has potential for enhancing the scope of student engagement or involvement in the learning process by making them interact through discussion boards instead of sitting passively in the classroom. Bergman and Sams (2012) note that there are some advantages to online teaching such as the fact that 'flipping' the classroom to an online mode ensures students receive a personalized education tailored to their individual needs.

### **E-learning and specificity of distance education – literature review**

The legal conditions (*Rozporządzenie Ministra Nauki i Szkolnictwa Wyższego..., 2007*) mean that it is not possible to conduct the whole major of studies solely in virtual form in Poland, however, these types of classes are acceptable as an important supplement and development of the educational offer of universities. As regards other modes of education in the form of the courses, trainings, post-graduate studies, the legislator has not introduced any limitations and they can be run fully in the form of distance education (particularly as e-learning). However, introduction of this form of education on a larger scale constitutes a kind of revolution for universities, requiring adjustment changes in the organization, principles of functioning and relations with stakeholders. The improper implementation of the e-learning programme may be ineffective, in the worst case it may lead to lowering of the level of education to such an extent that it results in loss of reputation.

As a consequence of the global socio-economic changes, the didactic methods applied

in the educational process have changed. The era of the Internet has introduced new didactic tools to education, however, is modern technology sufficient to make the process of education and learning more effective? Specialists handling the e-learning research prove that an important element of creating the digital learning content is, apart from modern technology, first of all, knowledge about the methods of learning with its application. In the study by the Department of Education, Science and Training-DEST) entitled *No Place for Egos and Islands* we can read: 'The main emphasis in discussions on e-learning should remain on the word 'education', not on the word 'electronic'.

Analyzing the elaborations devoted to e-learning at universities, both in Poland and worldwide, it is possible to notice that this notion is used very freely. It covers very different forms of distance education, defining both the whole curricula and tools supplementing the educational process with this term. There are numerous definitions of e-learning; what is more, they change over time with development of various forms of education. In general, it is perceived as a way of delivering the educational content through electronic media, such as the Internet, the intranet, satellite transmission, interactive television, audio or video tapes or CD-ROMs (Urdan, Weggen, 2000, p. 8). E-learning is also regarded as a synonym for the concepts, such as web-based learning (WBL), Internet-based learning (IBT), online learning (OL) or open/flexible learning (OFL) (Khan, 2001).

Therefore, the concept of e-learning includes both synchronous (online) and asynchronous teaching methods with the application of modern information technologies. However, due to technological progress, what is considered to be modern technology in a specific moment, changes. Historically speaking, the forms of distance education have evolved from the non-stationary ones (extramural studies/training, correspondence courses, part-time mode), through the use of traditional media (radio, television)

and personal computers regarded as more modern devices – programmed learning (Dede, 1996), to e-learning in its pure form (Internet) and currently implemented mode: m-learning (mobile devices) (Komorowski, 2013) and *social network (social media)* (Anderson et al., 2005). The future trends in e-learning include: cyborgisation (e.g. broadening the functions of human memory and senses) and virtualization of education, i.e. systems teaching without a teacher-man (Klichowski & Przybyła, 2013).

However, there are also opinions that question the possibility of the complete elimination of the human factor as ‘it is hard to suppose that electronic teaching will replace completely traditional teaching. In teaching, the human element in the form of a tutor-teacher or an instructor is embedded too strongly to be replaced by an existing technology’. (Mielcarek et al., 2004: 9). Table 1 presents the functions of various forms of distance education in relation to full-time education.

Depending on the approach adopted at the university, e-learning may have the following functions: supportive, complementary or partially replacing traditional full-time education. Each of these functions can be implemented at the level of both specific subjects as well as the whole majors or as a whole at the university, as it was practised, e.g. in England.

While the solutions at the level of specific subjects, especially those serving a supporting

or complementary function, can be implemented individually by particular lecturers, the more massive application of these solutions within the university as a whole requires actions, related to both organizational and technical changes as well as remodeling of the organizational culture as it was the case at each Polish university since April 2020 during the introduction of the epidemiological state and stationary closure of all universities in Poland.

It is worth distinguishing between e-learning and distance education, i.e. conducting distance learning without the personal participation of learners. Distance education and e-learning are based on two educational models. The model of distance education consists in teaching a large number of students by teachers where most of them do not communicate with students at all. E-learning emphasizes the direct relationship between a small number of students and teachers. Distance education is directed to students who are in various places and are physically separated from teachers. On the other hand, e-learning can be easily used by students, both in and outside the laboratory as well as on campus. According to Holmberg (1989: 3), the term ‘distance education’ includes ‘[...] different forms of studies at all levels that are not under constant supervision of teachers present with their students in the classrooms or on the same premises’. The interpretation of the term ‘distance education’ covers all forms of education in which classes within

**Table 1.** Functions of various forms of distance education in relation to full-time education

Supporting full-time education	Supplementing full-time education	Replacing full-time education
<ul style="list-style-type: none"> <li>• curricula</li> <li>• schedule</li> <li>• mail</li> <li>• obligatory materials (cases, slides)</li> <li>• sending the student's works</li> <li>• providing grades</li> </ul>	<ul style="list-style-type: none"> <li>• examinations, assessments, tests</li> <li>• chatter groups</li> <li>• chats</li> <li>• video conferences</li> <li>• additional materials</li> <li>• e-books</li> <li>• databases</li> <li>• repetitories</li> </ul>	<ul style="list-style-type: none"> <li>• e-courses</li> <li>• lectures</li> <li>• laboratories</li> <li>• seminars</li> </ul>

Source: based on: Adamska (2017: 83-95).

an educational institution are not the primary means of education (Daniela, 1990).

Distance learning is mostly work at home, from time to time working on the premises of the educational facility whereas conventional education is most often conducted at school; sometimes it is studying at home. In conventional education the main role is played by a teacher, in distance education – by an institution.

Focus on the needs of specific groups that – for various reasons – may not always attend the classes taking place in the premises of the university constitutes the second distinguishing feature of distance learning. The contact between the parties of the educational process may be made by correspondence. Distance education means physical separation of students from the teacher at specific stages of their learning.

The third main feature of distance education at university level is its potential, facilitating access to higher education by providing economies-of-scale (Guri-Rosenblit, 2005). Distance education is mainly based on a change in the medium of knowledge transfer and on flexibility of the transferred content that is provided by openness of the platform and possibility to adapt the content to the problems that arise during the educational process.

European e-learning plan is defined as: '[...] the application of new multimedia technologies and the Internet to improve the quality of teaching by facilitating access to educational resources and services as well as by enabling remote change and cooperation'. (CBOS 2009, I). Holmes and Gardner (2006: 14) simplify the definition of e-learning stating that it is: '...online access to educational resources – everywhere and anytime'. Regardless of the definition of this phenomenon, e-learning creates new opportunities for teachers and learners (students) by enriching their experiences with the virtual environment that provides support, not only transferring knowledge but also promoting it. The next stage in the development of distance education is the concept of m-learning where online access would be implemented with

the use of quality mobile phones, i.e. palm phones (Metcalf & De Marco, 2006).

Two trends can be distinguished taking into account the analysis of factors determining effectiveness of distance education. On the one hand, barriers preventing its accomplishment are examined (which the authors of the text also pointed out in their research), and on the other hand, attention is focused on finding the key factors of success. As Adamska states (2017: 91), 64 factors hindering this development were identified in one of the studies concerning the barriers to development of distance education. As a result of the detailed analysis of the issue, it was concluded that the most significant factors include: a lack of adaptation of the procedures and organization of the university to the change of the manner of its functioning, problems related to technology, a lack of the proper remuneration system for teachers that would take into account the necessary additional involvement (time and development of skills), legal aspects related to the transfer and protection of the intellectual property rights and a lack of support for students (Muilenburg & Berge, 2001).

The second approach that mainly focuses on the elements determining success, not the barriers, is visible in the research on the success factors of distance education in academic training (Selim, 2007). The initially identified potential factors of success were divided into four main groups: a lecturer (13 factors), a student (22 factors), information technology (13 factors) and university support (5 factors). Eight factors were selected as key ones, out of 53: the attitude of the lecturer towards technology and his/her skills in this field, teaching style of the lecturer, motivation of the students and their technical competence, interactive cooperation of the students, content and structure of the e-learning course, ease of access to the Internet within the campus, efficiency of IT infrastructure and university support within the area of e-learning activities.

The research related to effectiveness of distance learning in universities initially

focused on its comparison with traditional classroom teaching. The results most often led to the conclusion that educational outcomes are the same (Clark, 1983), they rarely indicated one or another form as more effective. However, this one-dimensional approach to the analysis of the issue has caused that the results of this research are often questioned due significant methodological errors. The objections most frequently concern a lack of analysis of the exogenous factors that can influence the educational outcomes and as well as taking into consideration the opinions and assessments of only those participants who have completed the specific course (Phipps & Meristotis, 1999). However, over time, apart from the approach based on simple comparison approach, more criteria-based studies have begun to appear and various dimensions of the educational process have been analyzed.

The subject literature presents results of the research discussing the issue whether distance education is more effective than traditional form of teaching. Allen et al. (2002), suggest that conducted research confirms that students assess forms of teaching providing interaction better and – as a result – they prefer classroom teaching to distance education (Allen et al., 2002).

While analyzing e-learning process, we can state that it has a great potential to generate the social benefits. Due to elimination of barriers in access to education, it allows to meet the educational needs of numerous people, including those belonging to disadvantaged groups, for whom traditional forms are inaccessible (inconvenient or too expensive). Moreover, e-learning may constitute an attractive alternative of the stationary forms of education for working people, enabling to supplement education within the framework of lifelong learning.

Ellis et al. (2009) think that there are relatively few studies related to the influence of online learning on the results obtained by the students. Without these fundamental findings, evaluation of effectiveness of e-learning, as compared to conventional education, may

be flawed. There is a need for the research concerning the methods of assessment of the creation and design of the e-learning components to improve their quality.

Distance education has numerous advantages, also with regard to academic education. Attention should be drawn to the following aspects: standardization of classes translating into comparable and objectively measurable educational outcome, greater flexibility of the content (the option of exclusion of specific material and possibility of its multiple reproduction). E-learning also allows for adjusting the intensity of learning to the individual needs and abilities of the student as well as possibility of choosing non-standard places and times of learning, which results in a potential increase in the group of people who are studying (Smith, Smith, Boone, 2000). On the other hand, e-learning has also drawbacks: a lack of direct contact between teachers and students, a large amount of work of the lecturer in preparing complex classes as well as possible technical problems and a lower level of control over participants' activity, increasing the risk of malpractice on the part of students.

However, traditional teaching methods prevail in the offer of universities. J. M. Mischnke (2009) states that broad and systemic emergence of e-learning in universities will not only constitute a signal of improvement of the system, yet, it will also allow the society to regain the benefits that are lost in the current system. Above all, reliable preparation of graduates to the requirements of the labour market and the position of science as the benefit. Polish higher education institutions that have conducted the classes in the traditional form in the vast majority so far, after the necessity of introducing online teaching in the present situation, may undergo transformations and, once the epidemiological state of Poland ceases, they will retain this form of teaching permanently in their courses of study.

In the first months of the COVID-19 pandemic, numerous studies were conducted at universities around the world to analyse

distance education efficiency during the pandemic (Bayrakdar et al., 2020; Giovannella, 2020; Motunrola Bolumole, 2020; Asanov et al, 2020; Grätz & Lipps, 2021; Wößmann et al., 2021). In Poland, the research on distance education in the period of COVID-19 was conducted in May and June 2020 by P. Długosz and G. Foryś. Results of the research were published in the report entitled 'Remote Teaching at the Pedagogical University of Krakow from the Perspective of Students and Lecturers' (Długosz & Foryś, 2020).

## **Methodology of the research**

Results of the surveys conducted in the group of students of higher education institutions in Poland constitute the empirical base of the elaboration. The research used a questionnaire form prepared by the authors of the presented elaboration that consisted of three parts: a short information about the objective of the research, a set of 45 questions and particulars. The closed questions, both with quantitative and categorical answers (disjunctive and conjunctive cafeteria) concerned:

- assessment of the current situation related to the outbreak of the COVID-19 pandemic in Poland (isolation, fear of infection, anxiety connected with daily life),
- expressions of anxiety – the stress associated with uncertainty of passing and possible extension of the academic year,
- effectiveness of distance education in the first weeks of the COVID-19 pandemic,
- obstacles – learning barriers in the form of distance education in the first weeks of the COVID-19 pandemic.
- forms of spending free time by students during the pandemic.

The survey questionnaire also included a number of questions regarding the students' physical activity and rest during the pandemic, their holiday plans and assessment of the actions undertaken by the Polish Government to limit the spread of the COVID-19 pandemic in Poland. The results of this part of the study are not included in this elaboration.

There was a deliberate sample for the research. The research covered students of the higher schools in Poland who were reached via the Internet by the authors. Pilot studies were conducted during the period from 5 April to 7 April 2020 and their main objective was to verify the prepared questionnaire. The relevant survey online research via Google forms was carried out from 8 April to 7 May 2020. In total, we have received completed online questionnaires from 535 students. However, due to the fact that 8 respondents did not answer all the key questions, the analysis included the answers of 528 students.

A survey method has been applied to collect empirical material among students. In the survey, CAWI (Computer-Assisted Web Interview) Internet questionnaire, sent via e-mail to students in the form of the invitation to the survey with a link to the survey, has been used in the survey. The sampling method was non-random. The sample for the research was purposive – as the research covered students of Polish universities who the authors reached via the Internet. Both full-time and part-time students who agreed to fill in the questionnaire participated in the research. Younger students and undergraduate students took part in the studies more frequently. Among the students, questionnaires were most frequently completed by students of social sciences and humanities.

The materials collected during the research have been organized and statistically compiled in the graphic form and in the form of result tables. Methods of graphic presentation have been applied here. The descriptive-analytical and dynamic-comparative methods have been used to present the results.

## **Features of the examined group**

As it has already been mentioned, the analysis included 528 students from 34 universities in Poland, i.e. AGH University of Science and Technology in Krakow, the Karol Szymanowski Academy of Music in Katowice, University

of Physical Education in Krakow, State University of Małopolska in Oświęcim, The Jesuit University Ignatianum in Krakow, State Higher Vocational School in Nowy Sącz, State Higher Vocational School in Tarnów, The Koszalin University of Technology, Krakow University of Technology, Rzeszów University of Technology, Warsaw University of Technology, Wrocław University of Technology, The Podhale State Higher Vocational School in Nowy Targ, State Higher School of Technology and Economics in Jarosław, Warsaw University of Life Sciences, University of Social Sciences in Łódź, Warsaw School of Economics, Adam Mickiewicz University in Poznań, University of Economics in Katowice, University of Economics in Krakow, The Jagiellonian University in Krakow, The Maria Curie-Skłodowska University in Lublin, Medical University of Lublin, Medical University of Łódź, Pontifical University of John Paul II in Krakow, Pedagogical University of Krakow, Agricultural University of Krakow, University of Rzeszów, University of Warsaw, Medical University of Warsaw, The Higher School of Management and Banking in Krakow, Higher School of Applied Informatics and Management in Warsaw under the auspices of the Polish Academy of Sciences.

Women constituted almost ¾ of the total number of the respondents (74.6%), men – 25.4%. Nearly 90% (463 respondents) of the students were aged 19-24 years. The age of 25-29 was indicated by 50 people, 7 people were aged 30-39 and 8 people were over 40 years of age.

In the case of assessment of material situation, the majority of students (51.3%) assessed their material living conditions as 'good', almost 1/3 of the respondents (31.8% – 168 people) regarded them as 'average' and 65 people – as very good. Only 6 people evaluated their material situation as 'very bad' and 18 students (3.4%) as 'bad'.

Most questionnaires were completed by second-year students of the first-cycle studies (27.3%), followed by first-year students of the first-cycle studies (21.8%). The share of the following students of the second-cycle studies (supplementary master's degree courses):

second-year students (18.2%) and first-year students (14%). The questionnaire was also filled in by 89 third-year students of the first-cycle studies (16.8%) and 7 students of the third-cycle studies (doctoral studies).

The questionnaires were most often completed by students of tourism and recreation, economy, finance and accounting, physiotherapy, geography, instrumentalism, state security, biotechnology, pedagogy and law. However, it should be noted that the total number of majors of the respondents participating in the research amounted to 99.

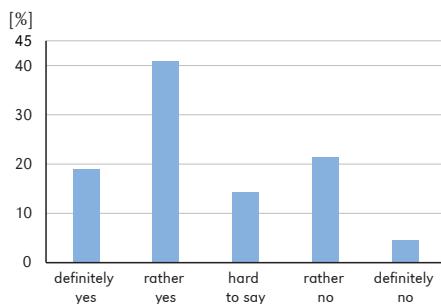
## Results

The outbreak of the COVID-19 pandemic in Poland since the beginning of March 2020, closure of universities, institutions, parks and sports facilities, introduction of strict restrictions related to movement have had a significant influence of the level of stress and anxiety among Polish residents. Numerous online interviews conducted with students confirm that a considerable proportion of academic youth did not leave their homes for even a dozen of days during the peak of the pandemic. Therefore, one of the first questions posed to the respondents was: "Does the situation related to the SARS-CoV-2 coronavirus in Poland cause great anxiety to you?". As the results of the survey confirmed, 40.9% (216 people) answered that rather yes, and 18.9% (100 people) that definitely yes. Only 24 people among the respondents (4.5%) answered that it definitely did not cause anxiety to them, and 113 people (21.4%), considered that it rather did not. Analyzing this question, it can definitely be said that among the respondents, a larger half of them felt anxious about the SARS-CoV-2 coronavirus in Poland (Fig. 1).

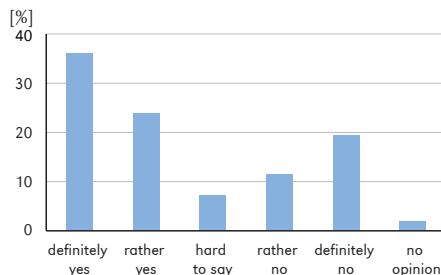
The next question was related to fear, uncertainty among the respondents as to completion of the maturity examinations, defense of the bachelor's and master's degree examinations and having the academic year credited on time. It turns out that the largest number of people answered that they

definitely feel anxious about the above factors. These answers were provided by as many as 191 people (36.2%) out of 528 respondents (Fig. 2). 126 people (23.9%) answered that they were rather afraid whether the academic year would be credited on time, and 38 people (7.2%) stated that it was difficult for them to provide explicit answers. The next 10 people (1.9%) declared in their answers that they were not afraid of having the academic year credited on time, while 102 (19.3%) said that they definitely did not feel any stress, anxiety or uncertainty about having the academic year credited on time, taking examinations or defending them.

In the research, the authors also asked the students whether they were considering the possibility of rebranding, changing

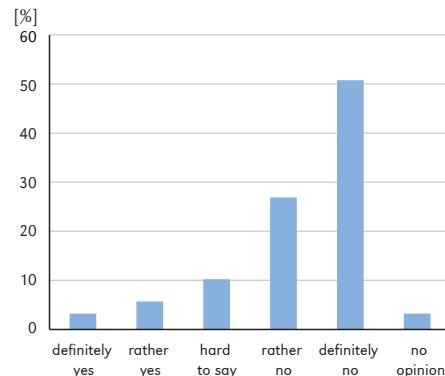


**Figure 1.** Distribution of the respondents' answers to the question: 'Does the situation related to SARS-CoV-2 coronavirus in Poland cause great anxiety to you?'



**Figure 2.** Distribution of the respondents' answers to the question: 'Are you stressed by uncertainty related to passing the bachelor's and master's degree examinations, having the academic year credited or extending the academic year?'

the majors in connection with the situation caused by coronavirus? The analysis of the results confirmed that only 17 people (3.2%) stated that they were definitely considering this option and 30 people (5.7%) that they were rather doing this. Most of the respondents replied that they definitely did not consider the possibility of changing the majors and the need for rebranding. There were 268 people (50.8%) and 142 people (26.9%) who replied that they rather did not think about that. 17 people (3.2%) did not have the opinion concerning the subject and 54 people (10.2%) answered that it was difficult for them to say (Fig. 3). The answers to this question confirmed unequivocally that the students did not want to change their studies due to the existing epidemiological situation in Poland and did not intend to change their academic plans.

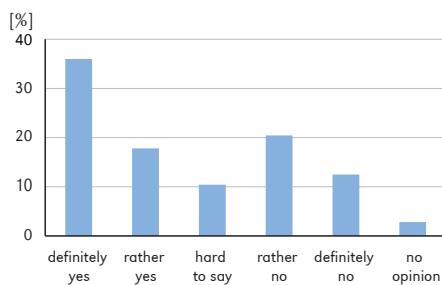


**Figure 3.** Distribution of the respondents' answers to the question: 'Do you consider the possibility of rebranding, changing the major due to the situation caused by coronavirus?'

The next question in the survey questionnaire concerned the issue related to students' participation in the online classes. As the results of the survey show, as many as 494 respondents (93.6%) answered that they participated in them, and only 34 respondents stated that they did not take part in them.

One of the objectives of the research was to check whether online learning takes students more time than conventional methods

of learning (including assigned tasks). The results indicate that for almost 1/3 of the respondents, i.e. 190 people (36.0%), distance education took much more time than conventional traditional teaching, and for 94 people (17.8%) it rather did. 66 people (12.5%) had a different opinion and believed that online learning definitely did not take up more time than conventional educational process and 108 respondents (20.5%) answered that it rather did not. 15 respondents (2.8%) had no opinion in this matter and 55 people (10.4%) stated that it was difficult to specify clearly which educational form was more time-consuming (Fig. 4).

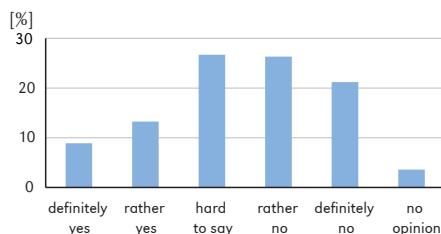


**Figure 4.** Distribution of the respondents' answers to the question: "Does 'learning online' take more time than conventional one (including assigned tasks)?"

Another question asked to the respondents concerned the issue of time they spent in front of the computer during the COVID-19 pandemic. The question was: "How much time do you currently spend in front of your computer/laptop/mobile phone using various applications, games, social networking sites (excluding classes, online lessons) in relation to the state before the introduction of the epidemic state in Poland?". Almost half of the respondents, 211 people (39.9%) answered that it was much more than before, 134 people (25.4%) that rather more, and 142 people (26.9%) stated that they spent as much time in front of the computer as before the outbreak of the pandemic. Only 33 people (6.3%) answered that rather less, and eight (1.5%) out of 528 respondents indicated that during the pandemic they used a computer/

laptop/mobile phone much less than before the outbreak of the epidemic.

Another question asked to the students was: "Is home learning during the COVID-19 pandemic more effective in your case?". The results of the research show that the majority of the students believe that distance education in home conditions is not definitely more effective. There were as many as 112 answers (21.2%) stating the above, and 139 people (26.3%) stated that it was rather not. Only for 47 people (8.9%) time of distance education definitely had a more effective educational effect, while 70 people (13.3%) answered that time spent at home was rather more effective than before. 141 people (26.7%) thought it was difficult to answer this question, and 19 (3.6%) of the 528 respondents did not have an opinion regarding this issue and could not clearly indicate which time was – in their opinion – spent more effectively on learning (Fig. 5).



**Figure 5.** Distribution of the respondents' answers to the question: "Is home learning during the COVID-19 pandemic more effective in your case?"

One of the questions asked to the respondents was whether they take part in additional online courses or webinars during the pandemic in order to develop their skills or improve their qualifications. A vast majority, as many as 376 people (71.2%) replied that they did not. Only 129 people (24.4%) answered that they found time to participate in additional online courses and – as a result – they improve their skills and qualifications during the pandemic. This was also one of the forms of spending free time by students during that period.

The survey questionnaire was prepared by the authors in the way enabling to get to know the inhibitors preventing the respondents from learning at home during the ongoing pandemic. In this question, the respondents were able to indicate several answers. 186 respondents (35.2%) answered that during the pandemic and distance education at home they did not encounter any obstacles or barriers that would prevent them from learning at home. On the other hand, among the most frequently mentioned barriers limiting the free learning of the students at home was a lack of silence – quietness due to the noise of the siblings or remote work of the parents. This answer was provided by 124 respondents (23.5%). The next places were respectively: a lack of learning equipment (laptop, computer, speakers, microphone) – 61 answers (11.5%) and a lack of Internet access – 26 answers (4.9%).

The authors of the text asked about opinions of the respondents regarding the issue of closing down kindergartens, schools and universities for several weeks during the COVID-19 pandemic in Poland. 302 respondents (57.2%) regarded this as a very good idea, 102 people (19.3%) thought it was a good idea and 39 people (7.4%) of all respondents stated it was difficult for them to answer the question explicitly. Only 6 people (1.1%) thought it was a very bad idea and 13 people (2.5%) said it was a bad one. 6 people (1.1%) had no opinion on the subject and did not express their opinion in this matter.

The authors were interested in what the students lack most during the isolation related to the state of the epidemic in Poland. It was possible for the respondents to indicate several answers to this question. The results show that they missed social meetings the most. This answer was provided by as many as 452 people (84%). The second place was taken by the lack of free movement outside. This was stated by 403 people (74.9%). The following answers were as follows: impossibility to travel, make tourist trips – 332 persons (61.7%); a lack of school or university classes – 226 persons (42.0%); a lack

of opportunity to develop passions, hobbies (e.g. training in sports clubs, rehearsals of the theatre club, music band, etc.) – 170 people (31.6%); impossibility to meet the family – 168 people (31.2%); impossibility to practise spots – 166 people (30.9%); impossibility to participate in religious practices in churches – 151 people (28.1%).

## **Discussion and conclusions**

The global COVID-19 pandemic triggered by the SARS-CoV-2 coronavirus has affected nearly all areas of life for almost each person of the Earth. Development of the pandemic has resulted in unprecedented changes at all levels of education. The first weeks of the development of the COVID-19 pandemic constituted the most dynamic time of these changes. Introduction of remote teaching, lectures and consultations in the online form was accompanied – for both pupils and students as well as teachers – by fear for their health and health condition of their loved ones as well as fear for their future academic and professional careers and material conditions. We are convinced that the research we carried out in these first weeks of the first wave of the development of the COVID-19 pandemic (from 5 April to 7 May 2020) in a group of more than 520 students is of great importance. After the author's research conducted on a group of Polish students who were forced to stay at home and study using distance education due to the COVID-19 pandemic caused by the SARS-CoV-2, there are the following conclusions:

- students definitely experienced anxiety caused by the SARS-CoV-2 coronavirus in Poland;
- the vast majority of the students felt anxiety, uncertainty about taking their maturity examinations, bachelor's and master's degree examinations and having the academic year credited on time;
- the vast majority of the respondents did not take into account rebranding or changing their studies in relation to the coronavirus situation in Poland;

- the vast majority of the students (over 94%) confirmed their active participation in online classes;
- online learning took students more time than the conventional methods of learning used so far (including the assigned tasks);
- during the ongoing COVID-19 pandemic, Polish students spent much more time in front of a computer/laptop/mobile phone, using various applications, games, social networking sites (excluding classes, online lessons) as compared to the state before the outbreak in Poland;
- for the majority of students, distance education in home conditions definitely was not more effective than traditional learning during the classes at the university;
- in most cases, students did not participate in additional online courses or webinars during the pandemic in order to develop their skills or improve their qualifications;
- the main inhibitor preventing the respondents from learning at home during the ongoing pandemic was a lack of silence – quietness due to the noise of the siblings as well as remote work of the parents who had to perform their remote work during the students' classes;
- in connection with the introduction of the COVID-19 pandemic in Poland, during the ongoing isolation, social meetings and free movement constituted two factors that students lacked most.

The results shown in the presented elaboration mostly coincide with the studies conducted by Długosz and Foryś (2020). The research including 1927 respondents confirms that the vast majority of respondents assessed distance education worse than traditional classes. Only one in five students considers the solutions introduced during the pandemic to be better than traditional classes conducted in the full-time form at the university. Few respondents also believe that distance education has not introduced changes in studying. Distance education is negatively evaluated and students would prefer to study in a traditional form. Distance learning does not constitute a competition or threat

to traditional teaching. These results coincide with the research of the authors of the text that shows that only 20% of the respondents have indicated distance education as a good and effective form of education.

The research conducted by Długosz and Foryś at the Pedagogical University of Krakow has indicated a high degree of mental exhaustion in students, especially those who do not have adequate conditions at home to participate in distance education. The most common feelings accompanying the students participating in the research included fatigue, mood swings and mental exhaustion. The research also confirms that students report deteriorating relationships with peers and lecturers. They are also less motivated to study and find it longer and more difficult to complete various tasks. The main benefit perceived by the students while studying remotely is the gain in the form of time saved for reaching the full-time classes whereas distance learning is not conducive to increasing concentration and students more rarely see advantages in the fact that they can study independently. As students have noticed, distance education rarely facilitates benefiting from assistance of other people who can explain problematic issues that have not been understood during the lectures. The biggest disadvantages mentioned by the students include the excessive burden with teaching material they have to learn. The fact that the respondents have to master and understand the material themselves constitutes an equally important disadvantage (Długosz & Foryś, 2020). The main inhibitor preventing the respondents from learning at home during the ongoing pandemic was the lack of peace and quiet due to the hustle and bustle of the siblings as well as the remote work of parents who had to perform their remote work during the time of the students' classes. This was indicated by every fourth respondent (Długosz & Foryś, 2020).

Carlo Giovannella from the University of Rome (2021) has presented different findings in his research. 101 undergraduate students in pedagogy who have taken part in his

research have stated that despite the fact they have missed their peers and contact with the lecturers, they find more benefits in distance education than in traditional teaching. Many of them do not see the need to return to traditional teaching and want to keep online learning for the rest of their studies.

Igor Asanov et al (2020) conducted a telephone survey with over 1500 secondary school students aged from 14 to 18 in Ecuador to find out how students spent their time during the quarantine period, explore their access to distance education and measure their mental health. The results show that 59% of students have access to the internet at home. Closure of schools and social isolation in Ecuador constitute two main problems faced by students, with 16% of them experiencing serious mental health problems that indicate depression. As the results of the research confirm, students spend on average 4 hours a day on distance education, which is significantly less time as compared to students in Poland who spend at least twice as much per day.

M. Grätz and O. Lipps (2021) have conducted similar research among 261 students and pupils aged 14-25. Their results have confirmed that the students have reduced their time spent on stationary learning, on average, from 35 hours per week to 23 hours of distance education. Similar analyses are provided by the results of the studies conducted among German students. Wößmann L. et al (2020) proved that primary and secondary school students in Germany reduced their learning time from 7.4 to 3.6 hours per day during the closure of schools. The analysis of the authors of this article shows that

65% of the students participating in the studies have stated that online learning takes them much longer than the conventional form of education.

The results of the survey conducted by the Authors of the presented study in a group of Polish students showed both similarities and differences in relation to the results of research conducted by researchers abroad (Asanov et al., 2020; Giovanella, 2021; Wößmann et al., 2020; Grätz & Lipps, 2021). Most of the respondents in the study showed anxiety due to the development of the COVID-19 pandemic and also emphasized that online learning is more time consuming than conventional existing learning methods. However, it should be noted that it is almost impossible to draw general conclusions related to the education pupils and students during the COVID-19 pandemic on an international scale. A comparison of education of even two selected countries requires taking into account the epidemic situation in a given country along with a number of factors – social, economic, socio-psychological, political as well as historical.

The presented study constitutes both a contribution to the new literature on education during the COVID-19 pandemic as well as an impulse for further research related to this issue. As a result, it seems necessary to continue this research after the year of the COVID-19 pandemic – hopefully this will be post-COVID time.

#### Editors' note:

Unless otherwise stated, the sources of tables and figures are the authors', on the basis of their own research.

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