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Crisis Remote Education from the Perspective of One-year Experience of Students

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***Abstract*—The article presents the results of the questionnaire research carried out after the first and repeated after the second semester of crisis remote education, conducted at The Maria Grzegorzewska University. Students participating in the study indicate a significant increase in their IT competences and the level of remote education. They declare a similar, high level of commitment and independence during classes. They indicate that commitment, activity, contact with the lecturers, regularity and quality of work, as well as the adequacy of the grades given are better during traditional education, although their timeliness is higher during distance education. The computer equipment of students and the way of accessing the Internet have not changed significantly. 20% of respondents admitted to using unauthorized assistance during exams. In the statements of students, on the one hand, there is a desire to return to social contacts and traditional classes, and on the other hand, a desire to maintain remote education, associated with the comfort of home-based learning and independence.**

***Keywords*—crisis remote education, higher education, distance teaching, distance learning, emergency e-learning, students, COVID-19, SARS-CoV-2**

I. Introduction

From March 20, 2020, there is an epidemic in Poland (Journal of Laws of March 20, 2020, item 491), which imposes several restrictions on the society, including those related to the possibility of travel, but also access to education. The effects of the restrictions related to the epidemic also affected universities, which in the first period suspended stationary education and then implemented solutions for crisis remote education.

This sudden, forced and unexpected change from traditional to distance learning, despite the problems and technical limitations, was accepted by students with great understanding and flexibility, because in their opinion their IT competences were sufficient to cope with the new situation [1-3]. An attempt at adapting universities to the new, pandemic educational reality consisted, among others, in the development of unified guidelines on how students are to participate in classes, student support by the university and the organization of midterms and diploma examinations [4]. Their effects did not appear immediately, which could result among students in a feeling of being lost and perceiving the process of remote knowledge transfer as qualitatively worse than in traditional education [5]. It was also a difficult situation for lecturers - many of them declare that despite saving time on commuting, in practice there is more work [6], and by blurring the boundary between work and home, it is more difficult to maintain a healthy work-life balance [7]. On the other hand, students complained about problems with the availability of lecturers, who did not reply to messages or conduct classes in an asynchronous manner [5]. There were also voices calling for a reduction in tuition fees for remote studies [4].

The pandemic has accelerated the inevitable development and implementation of distance learning. Until now, it existed on a smaller scale [8] and at first, it was introduced rather slowly [9], but in recent years its use has become more and more frequent [10]. Initially, models of hybrid learning were proposed [11], it was postulated to create and use open educational resources in academic education [12], or even self-education through incidental e-learning was promoted [13]. The most important determinants of readiness to apply e-learning in higher education turned out to be the skills of the staff and the appropriate approach to the subject of the implementing institution [14]. The technical aspect, which includes software, hardware, connectivity, security, skills and technical support as well as the possibility of collecting data, is also important [15].

After the end of the first semester of crisis remote education, a survey was carried out among students of The Maria Grzegorzewska University in Warsaw. The research focused on respondents' reflections on the first months of crisis online learning during the summer semester [5]. Based on the results, several recommendations were developed for university authorities, lecturers and students. These recommendations were implemented at the beginning of the following winter semester of the 2020/2021 academic year [4]. This article presents the results of research carried out after the next semester of the crisis remote education and compares the opinions of students on the experiences related to remote education which was implemented following the recommendations, in a synchronous mode, in accordance with a systematic schedule of classes.

II. Method

The research aimed to learn about the experiences of students related to crisis remote education from the perspective of its annual implementation at the university. This was to evaluate the introduced regulations and improvements from the perspective of students, as well as to develop individual threads appearing in the statements of respondents obtained in June 2020. The case study was used again and the research was limited to one institution, and the measurement was repeated

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using the diagnostic survey method based on the questionnaire technique. The previously used tool was modified and updated, adapting it to the needs of the study. The link to the questionnaire was sent by e-mail to the university students' addresses. The research was conducted in February 2021, after the exams ending the winter semester.

In the survey took part 496 people, which constitutes 11.5% of students. The youngest respondent was 19 years old, and the oldest 55 (M = 23.86, Me = 22, Mo = 21). Most of the respondents were women (464 people, 93.5%), and the minority were men (32 people, 6.5%). Most of the respondents were first-year students (261 people, 43.5%). Second year students accounted for 18.1% (90 people), third year students to 15.7% (78 people), fourth year to 14.3% (71 people), and final, fifth year to 8.3% (41 people). Almost two-thirds of the respondents (322 people, 64.9%) are full-time students, and more than one third (174 people, 35.1%) are part-time students.

III. Results

Students evaluate their IT competences after the second semester (M = 3.86, Min = 1, Max = 5, Mo = 4, Me = 4, Ske = -.439, K = -.177) of conducting crisis remote education significantly higher (F = 10.678, p <.001, t (1001.915) = -2.047, p <.041, Hedges g = .13) than after the first (M = 3.75, Min = 1, Max = 5, Mo = 4, Me = 4 , Ske = -.586, K = -.026). The respondents, when asked to assess the change in their IT competence level on a five-point scale (from definitely decreased to definitely increased), indicate its increase (M = 3.62, Min = 1, Max = 5, Me = 4, Mo = 3, Ske = -.058, K = -.006).

Students declare a significant increase in the level of remote education (F = 1.142, p <.286, t (1009) = -10.685, p <.001, g Hedges = .67) offered by the university in the second semester of crisis distance learning (M = 3.64, Min = 1, Max = 5, Me = 4, Mo = 4, Ske = -.653, K = -.002) compared to the first semester (M = 2.92, Min = 1, Max = 5, Me = 3, Mo = 3, Ske = -.080, K = -.718). Compared to the summer semester (M = 3.89, Min = 1, Max = 5, Me = 4, Mo = 4, Ske = -.875, K = .549), their declared level of involvement in remote education did not change (F = .363, p <.547, t (1009) = -.909, p <.364), still assessed as high in the winter semester (M = 3.95, Min = 1, Max = 5, Me = 3, Mo = 3, Ske = -.787, K = .163). The same applies to the declared level of independence (F = 1.094, p <.296, t (1009) = -1.088, p <.277), which in the winter semester (M = 4.30, Min = 1, Max = 5, Me = 4 , Mo = 5, Ske = -1.417, K = 2.367) remained similar to the one declared in the summer semester (M = 4.24, Min = 1, Max = 5, Me = 4, Mo = 5, Ske = -1.235, K = 1,350).

When assessing six elements common to remote and traditional education, respondents indicated in which case they were more visible. The students' indications after the first and second semester were compared regarding their involvement in learning, student activity, contact with the lecturer, regularity of work, timeliness and quality of task performance. Most of the differences turned out to be statistically significant (Table I).

TABLE I
THE SIGNIFICANCE OF DIFFERENCES IN THE EVALUATION OF EDUCATIONAL ELEMENTS

	Levene's test		t Test			Hedges'
	F	p	t	df	p	g
Involvement	.310	.578	5.241	1009	.001	.33
Activity	.749	.387	5.610	1009	.001	.35
Contact with the lecturer	3.246	.072	.449	1009	.654	
Regularity of work	5.877	.016	-2.273	1008.941	.023	.14
Timely execution of tasks	.425	.514	-2.981	1990	.003	.19
Quality of task performance	3.904	.048	-2.450	1008.841	.014	.16

Students assessed their involvement and activity after the second semester significantly lower, which means that they believe that in their opinion they are more visible in the case of traditional education. They assessed systematic work and the quality of task performance significantly higher, but the average rating came close to indicating that the given elements are similar in traditional and distance education. In the case of timeliness students found it higher in the case of distance education (Table II).

TABLE II
DESCRIPTIVE STATISTICS FOR EVALUATION OF EDUCATION ELEMENTS

	Summer semester 2020							Winter semester 2021						
	M	Min	Max	Me	Mo	Ske	K	M	Min	Max	Me	Mo	Ske	K
Involvement	3.21	1	5	3	3	-.194	-1.190	2.75	1	5	3	3	.280	-1.107
Activity	3.26	1	5	3	3	-.194	-1.150	2.78	1	5	3	3	.170	-1.112
Contact with the lecturer	2.33	1	5	2	1	.604	-.782	2.29	1	5	2	1	.666	-.605
Regularity of work	2.66	1	5	3	3	.297	-.890	2.84	1	5	3	3	.073	-.784
Timely execution of tasks	2.99	1	5	3	3	-.043	-.385	3.20	1	5	3	3	-.080	.118
Quality of task performance	2.80	1	5	3	3	.052	-.466	2.98	1	5	3	3	-.044	-,363

After the second semester of remote learning, students also found that the adequacy of the grades given was slightly higher in the case of traditional education (M = 2.69, Min = 1, Max = 5, Me = 3, Mo = 3, Ske = .117, K = -.130).

The technical abilities of students related to participation in the classes have not changed significantly. More (84.1%) students have a personal computer (vs 79.1% in the first semester). A similar number of people use mobile devices (55.4% vs 56.4% in the first semester). Slightly fewer people (12.9% vs. 19%) share the computer with other household members. With the way of connecting to the Internet, not much has changed either. A cable modem or optical fiber is used by 64.3% (vs 60.3%), and a mobile connection by 38.1% (vs 39.7%). Slightly more people use the Internet provided by a smartphone (30% vs 27.3%).

The results of previous research revealed the need to organize support from universities in the field of distance learning. The vast majority of participants (94.8%) declared that they did not use it. Individuals benefited from training (16 people, 3.2%), technical assistance (9 people, 1.8%), and shared equipment (2 people, 0.4%). Five people (1%) did not know that they could benefit from the support of the university. One person benefited from the support of a psychologist, and one wrote that they were supported by Information Technology classes.

The students' assessments from the summer semester 2019/2020 and the winter semester 2020/2021 on various forms of remote education were also compared. Only people who participated in a given form of classes were taken into account (Table III).

TABLE III
THE SIGNIFICANCE OF DIFFERENCES IN THE ASSESSMENT OF REMOTE EDUCATION FORMS

	Levene's test		t Test			Hedges'
	F	p	t	df	p	g
Virtual group meetings	1.912	.167	.420	888	.674	
Virtual individual meetings	.610	.435	-.437	739	.662	
Individual phone calls	.761	.384	-.678	609	.498	
Chat	1.077	.300	-.513	900	.608	
Instructions sent by e-mail	7.314	.007	-4.092	966.933	.001	.26
Individual work in designated channels of communication	2.077	.150	-5.391	963	.001	.34
Group work in designated channels of communication	.795	.373	-2.829	949	.005	.18
Links to important content from lecturers	5.356	.021	-5.176	982.933	.001	.33
Author's materials from lecturers	5.306	.021	-6.547	993.641	.001	.42
Materials by authors other than lecturers	17.962	.001	-7.277	958.562	.001	.48
Recordings of lectures	.097	.755	-2.255	767	.024	.15

In the winter semester, students were significantly more willing to work both individually and in groups. They were also more willing to work with materials received from lecturers (Table IV).

TABLE IV
DESCRIPTIVE STATISTICS OF THE ASSESSMENT OF REMOTE EDUCATION FORMS

	Summer semester 2020							Winter semester 2021						
	M	Min	Max	Me	Mo	Ske	K	M	Min	Max	Me	Mo	Ske	K
Virtual group meetings	3.60	1	5	4	4	-.751	.103	3.57	1	5	4	4	-.782	.041
Virtual individual meetings	3.35	1	5	4	4	-.510	-.459	3.39	1	5	3	3	-.302	-.535
Individual phone calls	3.14	1	5	3	3	-.185	-.969	3.20	1	5	3	3	-.162	-.859
Chat	3.74	1	5	4	4	-.742	.115	3.78	1	5	4	4	-.882	.217
Instructions sent by e-mail	3.26	1	5	3	4	-.295	-1.095	3.60	1	5	4	4	-.631	-.551
Individual work in designated channels of communication	3.28	1	5	3	4	-.350	-.749	3.68	1	5	4	4	-.736	-.168
Group work in designated channels of communication	3.13	1	5	3	4	-.297	-.994	3.37	1	5	4	4	-.470	-.884
Links to important content from lecturers	3.59	1	5	4	4	-.567	-.407	3.96	1	5	4	5	-1.065	.472
Author's materials from lecturers	3.69	1	5	4	4	-.780	-.121	4.16	1	5	5	5	-1.382	1.287
Materials by authors other than lecturers	3.44	1	5	4	4	-.474	-.744	4.00	1	5	4	5	-1.089	.490
Recordings of lectures	3.78	1	5	4	5	-.770	-.079	3.96	1	5	4	5	-.880	-.075

The introduction of remote education in the form of systematic synchronous classes made the respondents more aware of the positive importance of not having to travel to the university, the related time saving and the appreciation of the convenience of learning from home (Table V). Studying at home is associated not only with physical and mental comfort but also allows to focus better, as other students are not distracted by the learning process.

TABLE V
ADVANTAGES OF REMOTE EDUCATION - COMPARISON OF DATA FROM THE FIRST AND SECOND SEMESTERS

Response categories	Summer semester 2020		Winter semester 2021	
	number of indications	percent[a]	number of indications	percent[b]
organization and implementation of the students' learning process	226	43,88%	228	45,97%
aspects related to didactics	81	15,73%	100	20,16%
no necessary travel	122	23,69%	240	48,39%
the opportunity to stay and learn at home	89	17,28%	66	13,31%
saving time	97	18,83%	156	31,45%
comfort and convenience	43	8,35%	131	26,41%
financial savings	13	2,52%	47	9,48%
communication	43	8,35%	34	6,85%
sense of security	21	4,08%	23	4,64%
no advantages	49	9,51%	11	2,22%
no answer	11	2,14%	8	1,61%
organization of work at the university	17	3,30%	1	0,20%

[a] N = 515; [b] N = 496

In terms of advantages, students after the second semester wrote more about aspects related to teaching ("Online lectures are amazing - in my opinion, their quality is the same or even better"; "Some lecturers have great ideas for conducting classes (e.g. statistics classes in the form of tutorials), thanks to which we understand a lot more about statistics than when it was stationary, because we have material that we can watch many times, but also time to ask questions. This makes learning more effective and we do not waste time" and financial savings. At the same time, the percentage of people who do not see the advantages of this type of education decreased.

Students also referred to the disadvantages of remote education (Table VI).

TABLE VI
DISADVANTAGES OF REMOTE EDUCATION - COMPARISON OF DATA FROM THE FIRST AND SECOND SEMESTERS

Response categories	Summer semester 2020		Winter semester 2021	
	number of indications	percent[a]	number of indications	percent[b]
teaching and competences of lecturers	361	70,10%	125	25,20%
no direct contact with people	111	21,55%	343	69,15%
technical problems	91	17,67%	154	31,05%
problems related to the attitudes and needs of students	73	14,17%	130	26,21%
communication with lecturers	116	22,52%	29	5,85%
university as an institution	56	10,87%	42	8,47%
exams	45	8,74%	55	11,09%
difficulty in group work	13	2,52%	11	2,22%
information chaos	34	6,60%	0	0,00%
lecturers' attitudes	90	17,48%	34	6,85%
health problems related to sitting in front of a computer	25	4,85%	69	13,91%
irresponsible approach of lecturers to time	21	4,08%	1	0,20%
no disadvantages	9	1,75%	22	4,44%
no answer	6	1,17%	8	1,61%
no opinion	---	0,00%	1	0,20%

[a] N = 515; [b] N = 496

Compared to the first semester of crisis remote education, after the second semester, the percentage of people who see disadvantages of remote education related to didactics, the level of competences of lecturers and communication with teachers and their attitudes, as well as a sense of information chaos decreased significantly. This can be considered a success of the systematic introduction of synchronous education and the implementation of subjects according to the plan in a uniform MS Teams application and the introduction of the necessity to use university e-mail by lecturers and students. On the other

hand, there has been a significant increase in the percentage of people who feel severe lack of contact with other people (lecturers, students) and with health problems related to prolonged sitting in front of a computer. This group also includes more people who place technical problems that arise (perhaps more often than before) in terms of defects.

The surveyed students also referred to the difficulties generated by remote learning. The results of the two studies are presented in Table VII.

TABLE VII
DIFFICULTIES OF REMOTE EDUCATION - COMPARISON OF DATA FROM THE FIRST AND SECOND SEMESTERS

	Summer semester 2020		Winter semester 2021	
Response categories	number of indications	percent[a]	number of indications	percent[b]
technical problems	238	46,21%	348	70,16%
functioning in remote education	180	34,95%	179	36,09%
difficulties in contacts and communication	121	23,50%	91	18,35%
general remote education issues	79	15,34%	33	6,65%
didactics	82	15,92%	35	7,06%
low competences of lecturers and students	61	11,84%	33	6,65%
the attitude of the lecturers	53	10,29%	12	2,42%
exams and midterms	21	4,08%	27	5,44%
difficulties equal to disadvantages	5	0,97%	---	0,00%
no difficulties	17	3,30%	22	4,44%
no opinion	5	0,97%	6	1,21%
no answer	---	0,00%	10	2,02%

[a] N = 515; [b] N = 496

The comparison of the categories of difficulties that accompanied remote education over two semesters reveals an increase in the scope (number) of technical problems. This is illustrated by the statement “Not everyone has high-quality computer equipment that can ensure good quality of meetings. The application does not work well, internet connection breaks, it is often impossible to join the meeting, problems with microphones are not only for students but also for the teachers. A situation happened where a five-hour lecture was given by a malfunctioning microphone, none of the students was able to understand the words." At the same time, after the second semester, there are much fewer difficulties related to distance education in general (e.g. limitations in practical education, access to materials or unfavorable timetables), didactics, IT competences and lecturers' attitudes.

The students' declarations related to their assessment of various aspects of knowledge and skills verification were also analyzed. One-fifth of students (95 people, 19.2%) admitted that they had used unauthorized help while writing final papers or taking exams during remote education. Four-fifths of the students (401 people, 80.8%) declare that they have been honest when passing the exams. The benefits of online exams were also asked. As regards positive answers, the highest value of online exams is attributed to greater comfort (434; 87.50%) (e.g. less stress, the possibility of staying at home, no need to travel to university, better concentration), time (78; 15.73%) (faster results, better deadlines, short duration of exams), exam level (49; 9.88%) (easier, better graded, with the ability to download and use scripts and notes), technical and organizational issues (39; 7.86%) (e.g. typing on a computer, easier writing and checking) and the form of the exam (37; 7.46%) (more favorable, using essays or drafts instead of examinations, using tests). Individuals found the novelty of experience, more reliable results and the possibility to test their integrity as an advantage of online exams. The advantages of online exams are described by the sentence "I felt the exams pleasantly, probably because I did not feel any tension and stress in my surroundings, I could feel at home during the exam".

When referring to the disadvantages of online examination, the students most strongly emphasized the unpredictability of devices, software and the Internet (320; 64.52%), including system and application freezes, "kick" from MS Teams and problems with the Internet connection during the exam. The second category of defects is related to the time (177; 35.69%), in particular, the respondents believe that the time allocated to questions (single and for the entire exam) is too short and they consider it unfavorable to close the exam after a specified (too short) time. A certain group of students (127; 25.60%) mentions the difficulties that accompany the exams, which include, for example, high level of stress, difficulty in concentrating, lack of separation between the university and home, the need to write on the computer (slower typing); less motivation to learn due to the possibility of cheating and no direct contact with the lecturer during the oral exam. For 99 (19.96%) of the respondents, the level of exams is a disadvantage. In this category, they indicate: the lack of reliability of online exams in reflecting the actual state of the student's knowledge, the possibility of cheating, a more difficult level of exams, the inadequacy of the test form, less possibility of passing the exams orally, lack of knowledge of students and graduates. The last category related to the disadvantages of remote examinations concerns the attitudes of lecturers (58; 11.69%). Students complain, among other things, about the lack of direct access to the lecturer (e.g. feedback or ongoing problem solving), accusations by lecturers, changes in the rules of assessment and scoring as well as unclear requirements and assessment criteria and low IT competences of teachers. It is worth emphasizing that, in the opinions of students, the forms of protection used by lecturers against lack of independence during exams bring the opposite effect - because students have too little time to think about the questions, they feel that they have to use aids that will allow them to quickly enter the answers.

Students were also asked to declare their expectations regarding subjects that could also be conducted remotely in the future. A detailed list is presented in Table VIII.

TABLE VIII
SUBJECTS THAT CAN BE TAUGHT REMOTELY IN THE FUTURE

Response categories	number of indications	percent
specific subjects	176	35,48%
lectures	157	31,65%
all	55	11,09%
none	54	10,88%
information technology	34	6,85%
language courses	28	5,65%
most of the exercises	18	3,63%
seminar	16	3,23%
I do not know	15	3,02%
person-led subjects	11	2,22%
no answer	10	2,01%
all well taught	8	1,61%
exercises	8	1,61%
faculties	8	1,61%
all not related to the specialty	7	1,41%
almost all	5	1,01%
non-directional items	2	0,40%
workshops	1	0,20%

The largest group of respondents mentioned specific names of subjects that can be carried out remotely in the next semester. Nearly one-third of the respondents indicated lectures, while slightly more than 10% - stated that all subjects can be realized remotely and a similar percentage that none of the subjects should be taught remotely.

Finally, it is worth adding that in the additional statements in which students could share their reflections on distance education, two extreme different positions prevail. One is expressed in the longing for classes at the university and among people, and the other - in the desire to maintain remote education for as long as possible, which is associated with comfort and building independence and self-discipline.

IV. Discussion

The introduction of remote education solutions based on the synchronous mode changed many aspects of the functioning of universities, lecturers and students themselves in the opinion of the respondents.

Students believe that their level of general IT competences has increased, and their level of commitment and independence is still very high. At the same time, compared to traditional education, they consider their commitment and activity lower, and the timeliness of tasks - much higher. Students, as young people, seeking new knowledge and eagerly experiencing new things, are perceived as open to innovation in education, but also as those who are able and willing to seek knowledge on their own [16]. Their assessment of the functioning of universities is also positive: after the second semester they indicated that the level of remote education had increased, but in their opinion, the adequacy of assessments was higher in the case of traditional education. First-year students evaluate the level of education significantly higher than those in higher years ($F = 1.354$, $p < .245$, $t(1009) = -2.905$, $p < .004$, Hedges $g = .18$), which may result from the lack of comparison, but foreign studies indicate that younger students prefer remote learning while older students prefer to learn traditionally [17]. In terms of achieved results, students are also differentiated by their adaptation, organization and self-awareness skills [18].

Despite the nearly one year of remote education, the technical conditions of students have not changed significantly (their access to the Internet and computer equipment), which is also a problem for students of other Polish universities [19]. Moreover, only few respondents used the technical support of universities: training, technical assistance and equipment, despite the fact that they were available. Perhaps the reason for this was the necessity to travel to the university in order to be able to use local computers, while the lack of necessity of commuting is one of the most appreciated advantages of this mode of education.

The experiences of two modes of remote education - crisis and systemic, have also brought changes in the assessment of advantages, disadvantages and difficulties that accompany this method of learning. After the second semester, students appreciated to a greater extent the convenience of learning at home, no need to travel to the university and saving time and money. They also notice the advantages related to the teaching of distance learning, especially online lectures and modern methodological solutions implemented by some lecturers to a greater extent. A hybrid approach is postulated, with greater involvement of students and lecturers through interactive exercises [20]. At the same time, however, the lack of systematic face-to-face contacts with other people and health problems resulting from long time spent in front of the computer are severe for a larger group of people. Permanent technical problems are also problematic, and technical problems, including those with the Internet connection, are still mentioned as the main difficulties.

The results concerning examinations and the use of unauthorized assistance during tests turned out to be interesting - this was declared by nearly 20% of the respondents. As the main benefits of verifying the effects of online education, students indicate the comfort of being at home, better solutions related to time, more accessible level of exams and introduced technical solutions. On the other hand, they consider as unfavorable the unreliability of Internet connections, hardware and software, inadequate (too short) time given by lecturers to write exams,. They indicate the difficulties and too high level of exams as difficulties accompanying the process of verifying knowledge.

Conclusion

The research focused on remote education shows changes in educational culture - students and lecturers have found out that the quality of some classes does not decrease if they are conducted remotely, and that appropriate methodological solutions can also help to activate students during classes [21]. Remote education has become a necessity that revolutionizes thinking about the directions and methods of transferring and acquiring knowledge [16]. It has also become apparent that

online exams, like all remote education, generate extremely diverse opinions. Similar solutions and elements, depending on the personal experiences of students, are accepted either enthusiastically or, on the contrary, with extreme dislike and criticism.

It should be assumed that the significantly better evaluation of remote education after the second semester is the result of the systemic solutions introduced for all university entities, based on the work and technical proposals of the IT and Media Department, including the introduction of a uniform system for remote education (MS Teams for synchronous education, fulfilling shifts, individual meetings, university e-mail, USOS). The support of the technical team is essential for the smooth functioning of online universities [21].

In the assessment of remote education, similarly to younger participants of this type of education, the feeling that cognitive, social and emotional needs are not being met [22], and caring for relationships should become a priority, regardless of the age of pupils and students [23]. Hence, it is advisable to take actions that will increase the mental well-being of students, such as strengthening mental resilience by teaching coping strategies, building a peer support network, using technology for remote diagnosis and systemic support, cooperation with professional mental health centers and government support [24].

It was surprising that the students did not decide to improve their equipment and Internet access after the first semester - their quality is comparable to that from the summer semester. Simultaneously with this omission, they did not use the university's support in this regard. Moreover, they consider problems related to the Internet connection and equipment as one of the important shortcomings of remote education. This discrepancy can be explained by economic differences among students, but also by the belief that remote education is temporary. Meanwhile, in their work plans for the coming years, universities already take into account the developed solutions, selecting the scope of subjects that will be permanently implemented online in the academic offer and the learning outcomes that can be verified remotely. This means that no matter how students evaluate and adopt online learning, it will become a permanent feature of the university's educational offer.

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