The Perspectives of Distance Learning in Higher Education: Lessons Learned from the COVID-19 Pandemic

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Abstract: The COVID-19 pandemic has triggered changes in higher education and put to light the question of the future of education. The goal of the research was to gather the opinions of students, who are the main stakeholders of education, concerning their perception of various forms of education in the context of distance learning and their preferences and predictions on the future shape of education. 1005 students of the Cracow University of Economics, Poland, share their opinion participating in the survey. The results point to a diversification of the student population as far as their perception of distance learning is concerned: students with greater experience in traditional higher education and part time students favored distance learning more and foresee it as the future of education, which is in line with the necessity of facilitating life-long learning. Hence, universities have to adjust their offer to different student preferences in order to survive.

Keywords: Poland, COVID-19 pandemic, students, distance learning

1. Introduction

The COVID-19 pandemic forced educational institutions to elaborate emergency plans for conducting educational processes in a distance form. It seems that the pandemic speeded up some unavoidable processes, such as the transformation of education related to the enhancement of information and communication technologies (ICT) skills, changes in the youth lifestyle, and changes in labor market expectations. The current graduates will have to requalify a number of times during their working life (Regmi, 2015). Besides, the growing number of secondary school graduates prefer to start work early to quickly gain practical experience (some of them come back to formal education after a gap), or decide to combine work with studies (part-time students). This phenomenon is in line with employers' requirements who value candidates with experience (Helyer & Lee, 2014). These premises imply the necessity of lifelong learning and infrastructure that facilitates it. Hence, the lessons learned from the COVID-19 pandemic concerning the students' perception of distance learning might comprise a valuable foundation for the future teaching strategy development by universities. There is a number of research works that tackle the distance learning domain, including students' wellbeing (Herbert et al., 2021; Conrad et al., 2021; Liu et al., 2021), grading (Vander Schee & Birrittella, 2021), and new possibilities of distant communication (Ackerman & Gross, 2021). However, to the best of our knowledge, there is no comprehensive research that addresses the role of distance learning in a multifaceted way, taking into account students as the main stakeholders of the learning experience. Hence, the goal of our research was to gather students' feedback concerning the effectiveness of various components of learning (form of classes, assessment, and communication) as well as students' preferences concerning the forms of learning. More specifically, we would like to answer the following research questions:

- RQ1: What is the students' opinion concerning the different forms of teaching applied in traditional and distance education?
- RQ2: How do the students perceive the suitability of various forms of teaching for distance learning?
- RQ3: What are the students' preferences concerning distance and traditional learning?
- RQ4: How do the students predict the role of distance learning in education?

We answered the research questions on the basis of data gathered from 1005 students of the Cracow University of Economics, Poland.

2. Related Work

The spring of 2020 connected with the beginning of the COVID-19 pandemic put high pressure on the educational institutions all over the world. The educational organizations in general and the higher educational institution (HEIs) in particular, had to enter the new paradigm of educational content delivery called emergency remote teaching (ERT) (Code et al., 2020; Rapanta et al., 2021). This imposed high tension on both the students and the teachers. Therefore, it put to the attention the problem of personal comfort and mental wellbeing. During the pandemic, 52% of students declared depressive symptoms (Herbet et al., 2021). Loneliness and isolation have also been harmful factors before the pandemic, but during this period they have increased. The main reason for this was the closing of campuses (Rippe et al., 2021; Stewart & Lowenthal, 2021). Naddeo et al. (2021) have identified the factors that affected online teaching, learning, and general wellbeing during the pandemic in Italy. These factors include, among others, problems in interactions with colleagues, adaptation of homes for online work, malfunction of e-learning platforms due to high Internet traffic and/or large number of online classes, using multiple devices, or inappropriate posture and clothing. Stress, anxiety, depressive symptoms, self-reported worry, grief, generalized anxiety and post-traumatic stress disorder symptoms were confirmed by Conrad et al. (2021) and Lee et al. (2021). Liu et al. (2021) have proposed a model of students' psychological wellbeing. It consisted of six negative and three positive predictors. Negative ones include perceived worry about mental health, restriction stress, perceived sufficiency of distance communication, white/European ethnicity, dietary changes, and social isolation, whereas positive ones contain physical health status, emotional support, and resilience. The remaining factors, i.e. gender, age, educational level, and international status, do not reveal any significant influence on the analyzed phenomenon. The pandemic imposed negative effects also on the faculty. The teachers had to respond to the need of ERT even though their mother institutions were closed. For this reason, the level of technostress among the faculty increased during the pandemic (Boyer-Davis, 2020).

The time since the start of the pandemic allows us to draw some conclusions concerning the suitability of certain teaching and education management methods. One of such challenges is grading (Vander Schee & Birrittella, 2021). The authors found peer group grading as a fair and time saving assessment tool. The results proved that grades assigned by students were not significantly different from those assigned by a teacher. The other important finding is that students perceive group grading as a fair solution. Meshram et al. (2022) have examined the influence of a crisis, such as a pandemic, on students' self-regulated learning and grade expectations. The outcomes of the research indicate direct and significant impacts of self-regulated learning and its components on grade expectations. There are also examples of research that aim at the verification of certain theories in the context of distance learning. An interesting example of enriching commonly used educational methods is the use of a synchronous online discussion board as the primary mode of teaching and learning (Ackerman & Gross, 2021). The results showed that student achieved higher examination results compared with the learning delivered by Zoom. On the other hand, students experienced frustration with the interface. Another important factor referred to online teaching and learning is the analysis of lecturers' productivity (Afrianty et al., 2022). The results indicate that it is important to enhance digital skills of the academic staff to achieve better results of online teaching and learning.

After a certain period of online teaching during the pandemic a question arises, whether the online form is only a temporary trend or will it become the reality for education institutions. The study by Agarwal et al. (2021) showed that the proponents and opponents of distance learning are divided in half. Therefore, if the educational institutions want to convince the undecided, they should promote online courses and fine-tune their offer to make it more suitable for online education. Krishnamurthy (2020) advocates the same opinion. According to the author, the educational system in the post-COVID-19 world needs a major redesign. The components of the online offer include artificial intelligence, machine learning, and automation. Hence, in the future, teachers might be partially replaced by sophisticated software. Code et al. (2020) has conducted research on the impact of ERT on technology-oriented courses. They indicate the inadequacy of pure online strategies in this matter. The future of online education demands providing the answers to several questions (Rapanta et al., 2021).

For example, do HEIs need to be more digitized or pedagogically prepared for the new challenges? It is also vital to ask whether the educator should strengthen their 'hard' or 'soft' skills for innovative learning. The design of the post-COVID learning environments, whether they are online or hybrid, is a challenging and complex endeavor. Spais and Paul (2021) have studied a crisis management model on the teaching of marketing in the higher education landscape. The authors provide crisis management examples from the three stages of crisis management i.e., identification, confrontation, and reconfiguration. The main concerns coming from the presented approach are the balance between short-term defensive and preventive actions and long-term strategic activities in the education domain. Therefore, the main tasks for crisis management are to secure educational continuity planning.

3. Research Methods

The aim of the study was to assess the impact of the pandemic on attitudes towards distance learning. The situational advantage was that all students were forced into this form of learning, regardless of their previous preferences and experience in this field. This gives a deeper picture of the students' attitudes, as it encompasses the whole student population regardless of their skills and previous attitude towards distance learning.

The starting point for the research was the development, on the basis of a literature review and the authors' own over 20-year experience in higher education teaching, of a list of potential factors that may affect the students' attitude towards distance learning. The list includes the following factors: gender, age, form of studies, self-assessment of ICT skills, technical conditions (Internet availability), and previous experience with the traditional (on premise) form of study. In addition, we would also like to take into account the students' attitudes towards online communication and their self-perceived change in general wellbeing related to the pandemic. We developed a survey that addresses these factors. The vast majority of questions in the survey was designed following a five-point Likert balanced and symmetric scale principle (Joshi et al., 2015). Its items relevant to the presented research are listed in Appendix. It should be noted that the questionnaire items reflect the needs stated in the research questions. Their goal was to gather the students' opinions concerning various phenomena and not to specifically assess these phenomena.

The survey was implemented using the Microsoft Office 365 tool. The questionnaire was sent to all Cracow University of Economics students (in total about 12 190 students, including bachelor, master, and PhD students). Data were gathered in May and June of 2021. We received 1005 responses, which gives an 8% global response rate (among full-time students the response rate was 10% and among part time-students 5%). For such values, with a statistical significance of alpha equal to 0.95, the error margin is 3% (broken down into full-time and part time students it is 3% and 6%, respectively). The preliminary results of the research that tackled the social aspects of online learning of Polish students were published in (Dymek et al., 2021). In this research, we would like to focus on the differences between full-time and part-time students and students with different previous experience in traditional learning, in the perception of the effectiveness of various forms of learning and preferences concerning the future form of learning.

4. Respondent Structure

Table 1 presents the respondent structure. It is worth noting that part-time students comprise mostly of working people, with some professional experience. They are much older than full-time students (on average they are approximately 3 years older, they are at age 24+, i.e. after the traditional educational age). In Poland students usually finish bachelor studies at the age of 22, master studies at 24 (2 year master studies in Poland). Many people start working right after finishing bachelor studies, sometimes continuing their education outside of the universities or coming back to formal university education after a break. Part-time students might be perceived as people who follow the idea of life-long learning. Therefore, the majority of part-time students is above 22 years old, while a significant part of the full-time students is in the range 19-22.

On average, students reported a deterioration of self-perceived wellbeing during the pandemic. However, some differences might be observed between groups. Interestingly, students with high experience in traditional learning seem to be the less affected group as far as wellbeing is concerned (43 percent reported deterioration), whereas the medium experience group is highly affected (58% reported

deterioration) (Dymek et al., 2021). However, the biggest differences were noticed between full-time and part-time students, the latter reported more often improvement in their wellbeing (Figure 1).

Table 1. *Respondents' Structure*

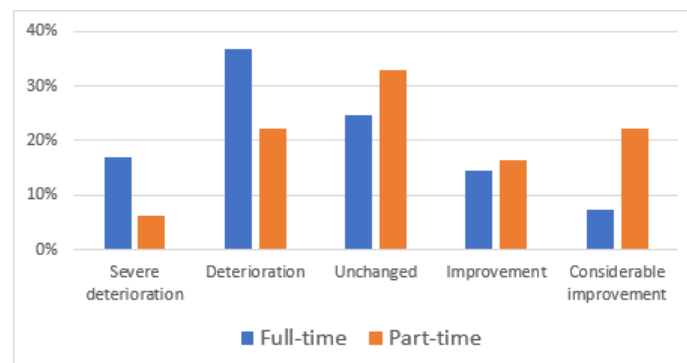| Variable	Category	No.	%
Gender	Female	643	64.0%
	Male	357	35.5%
	Not specified	5	0.5%
Age	< 20	143	14.2%
	20 - 24	727	72.3%
	25 - 30	99	9.9%
	30+	36	3.6%
Form of study	Full-time	766	76.2%
	Part-time	239	23.8%
Experience in a higher education traditional form of studies	Low (lack of experience)	375	37.3%
	Medium (about half a year experience)	154	15.3%
	High (at least 1.5 year experience)	476	47.4%

Figure 1. Students' Wellbeing in Relation to the Form of Study.

The preliminary data analysis shows that the number of respondents indicating an insufficient level of ICT skills or insufficient level of technical conditions was very small (2.4% and 2.8%, respectively), hence we excluded these criteria from further analysis.

5. Results

5.1 RQ1: Students' Evaluation of the Different Forms of Teaching in Distance Learning

Respondents assessed workshops and labs as being worse in distance learning, no matter how experienced they had been in the traditional form of learning (Table 2). However, more than half of the respondents with low or high experience perceived lectures as better performed in distance learning. As far as seminars are concerned, respondents were almost evenly distributed according to their opinions in this matter.

Table 2. *Students' Evaluation of the Different Forms of Teaching in the Distance Learning Form in Relation to Students' Experience in Traditional Learning*

	Workshops				Lectures				Seminars				Labs			
	L	**M**	**H**		**L**	**M**	**H**		**L**	**M**	**H**		**L**	**M**	**H**	
Worse	57%	58%	51%		23%	31%	25%		32%	28%	31%		52%	41%	51%	
Neutral	19%	12%	17%		20%	30%	22%		35%	31%	31%		23%	29%	18%	
Better	24%	30%	32%		57%	39%	53%		33%	40%	38%		25%	29%	31%	

L – Low; M – Medium; H - High experience in traditional learning

The biggest differences in respondents' assessment were noticeable between full-time and part-time students, the latter favoring distance learning more (Table 3).

Table 3. *Students' Evaluation of the Different Forms of Teaching in the Distance Learning Form by Full-time and Part-time Students*

	Workshops			Lectures			Seminars			Labs		
	Full-time	**Part-time**		**Full-time**	**Part-time**		**Full-time**	**Part-time**		**Full-time**	**Part-time**	
Worse	58%	44%		27%	20%		34%	22%		51%	44%	
Neutral	16%	19%		23%	20%		30%	34%		24%	16%	
Better	26%	38%		50%	60%		36%	44%		25%	40%	

Similarly, part-time students generally assessed various aspects of learning performed in a distance mode better than full-time students (Table 4). Especially, they noticed the better comfort during the classes and did not perceive a deterioration in commitment as much as full-time students. Furthermore, students with high experience in traditional learning seemed to be neutral or in favor of all aspects of learning being performed in distance form.

Table 4. *The Influence of Distance Learning on the Various Aspects of Learning*

		Experience in a traditional form of learning				Form of study		
		L	**M**	**H**		**Full-time**	**Part-time**	
Understanding of material	Worse	39%	53%	35%		43%	26%	
	Neutral	42%	31%	42%		39%	45%	
	Better	19%	17%	23%		18%	29%	
Team work	Worse	58%	50%	44%		54%	38%	
	Neutral	22%	22%	26%		22%	29%	
	Better	20%	28%	30%		24%	32%	
Interaction with the lecturer	Worse	57%	60%	52%		59%	41%	
	Neutral	29%	23%	30%		27%	33%	
	Better	14%	17%	18%		14%	25%	
Interaction with other students	Worse	75%	72%	71%		77%	59%	
	Neutral	17%	14%	18%		16%	23%	
	Better	8%	14%	11%		7%	18%	
Commitment during classes	Worse	54%	56%	49%		57%	37%	
	Neutral	27%	23%	33%		27%	37%	
	Better	18%	20%	18%		16%	26%	
Feeling of comfort during classes	Worse	17%	24%	19%		21%	11%	
	Neutral	15%	15%	15%		16%	13%	
	Better	69%	61%	66%		63%	77%	

L – Low; M – Medium; H - High experience in traditional learning

Table 5. *Effectiveness of Knowledge and Skills Verification in Distance Learning*

		Experience in a traditional form of learning					Form of study			
		L	**M**	**H**			**Full-time**	**Part-time**		
Oral exam	Worse	25%	27%	28%	■ ■ ■		28%	23%	▬ ▬	
	Neutral	52%	50%	50%	■ ■ ■		50%	53%	■ ■	
	Better	23%	23%	21%	▬ ▬ ▬		22%	25%	▬ ▬	
Multiple-choice test	Worse	26%	26%	27%	■ ■ ■		27%	23%	▬ ▬	
	Neutral	36%	40%	41%	■ ■ ■		40%	38%	■ ■	
	Better	38%	34%	32%	■ ■ ■		33%	40%	■ ■	
Exam with open questions	Worse	23%	21%	28%	▬ ▬ ■		26%	21%	▬ ▬	
	Neutral	46%	48%	46%	■ ■ ■		46%	46%	■ ■	
	Better	31%	31%	26%	■ ■ ▬		28%	32%	▬ ■	
Project and its presentation	Worse	13%	14%	12%	▬ ▬ ▬		14%	8%	▬ ▬	
	Neutral	35%	32%	42%	■ ■ ■		37%	42%	■ ■	
	Better	52%	53%	46%	■ ■ ■		49%	49%	■ ■	
Written final work	Worse	14%	12%	15%	▬ ▬ ▬		15%	13%	▬ ▬	
	Neutral	50%	45%	49%	■ ■ ■		49%	48%	■ ■	
	Better	36%	44%	36%	■ ■ ■		36%	39%	▬ ■	

L – Low; M – Medium; H - High experience in traditional learning

Part-time students evaluate each form of knowledge and skills verification more positively than full-time students, among which the neutral evaluation dominates (Table 5).

5.2 RQ2: Suitability of Various Forms of Teaching for Distance Learning

More than 64% of highly experienced students and more than 70% of part-time students believed that all forms of teaching might be performed in the distance form apart from labs (about 20% and 28% respectively) (in Tables 6 and 7 we did not include the answer "I do not know" as it did not bring new content). Full-time students were less optimistic in this matter.

Table 6. *Suitability of Different Teaching Forms in Distance Learning According to Respondents with Different Experience in Traditional Learning*

	Workshops				Lectures				Seminars				Labs			
	L	**M**	**H**		**L**	**M**	**H**		**L**	**M**	**H**		**L**	**M**	**H**	
Unsuitable	47%	43%	35%	■ ■ ■	9%	9%	7%	▬ ▬ ▬	12%	17%	16%	▬ ▬ ▬	27%	34%	33%	■ ■ ■
"It is OK"	33%	33%	37%	■ ■ ■	26%	34%	21%	▬ ■ ▬	9%	21%	28%	▬ ▬ ■	9%	7%	7%	▬ ▬ ▬
Optimal	16%	21%	27%	▬ ▬ ■	63%	55%	71%	■ ■ ■	15%	23%	45%	▬ ▬ ■	9%	9%	13%	▬ ▬ ▬

L – Low; M – Medium; H - High experience in traditional learning

Table 7. *Suitability of Different Teaching Forms in Distance Learning According to Full-time and Part-time Students*

	Workshops			Lectures			Seminars			Labs		
	Full-time	**Part-time**		**Full-time**	**Part-time**		**Full-time**	**Part-time**		**Full-time**	**Part-time**	
Unsuitable	46%	24%	■ ▬	8%	6%	▬ ▬	16%	9%	▬ ▬	31%	30%	■ ■
"It is OK"	34%	36%	■ ■	28%	14%	▬ ▬	19%	21%	▬ ▬	8%	7%	▬ ▬
Optimal	17%	38%	▬ ■	61%	79%	■ ■	25%	49%	▬ ■	8%	21%	▬ ▬

5.3 RQ3: Students' Preferences Concerning Distance and Traditional Learning

About 20% of respondents would rather avoid distance learning in the future. Students with high experience in traditional learning prefer a continuation of distance learning (Figure 2a). Similarly, a greater share of part-time students than full-time students prefers a continuation of distance learning (Figure 2b). A similar conclusion might be drawn in relation to respondents' preferences towards the future form of studies, however in each subgroup hybrid learning dominates (Figure 3).
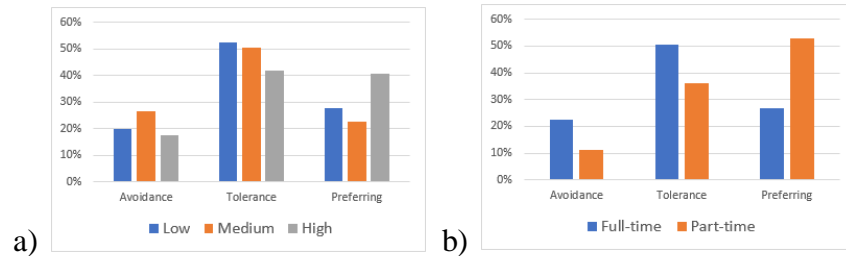
Figure 2. Attitude towards the Continuation of Distance Learning in Relation to
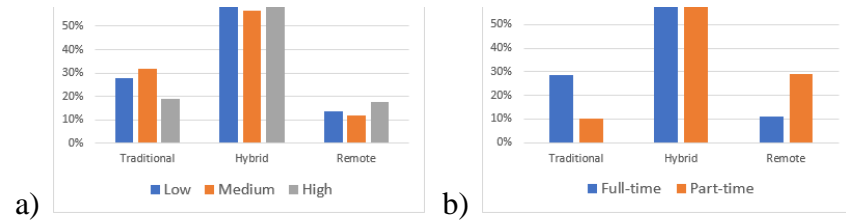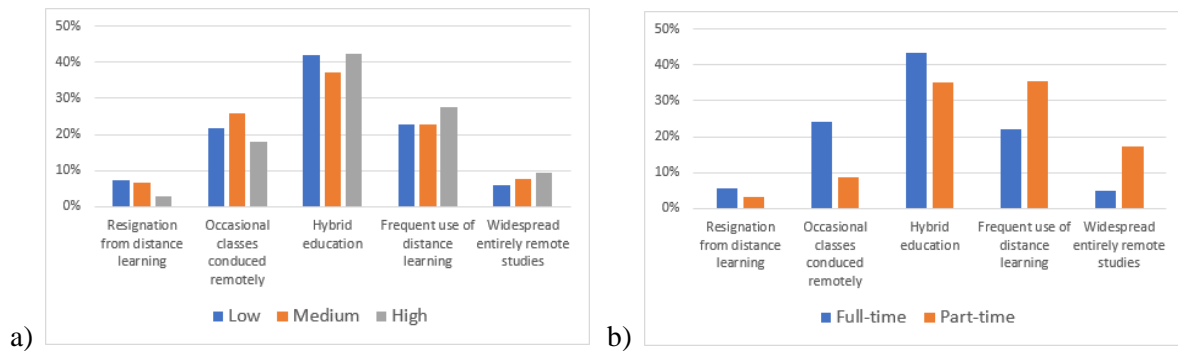(a) Experience with Traditional Higher Education and (b) Form of Studies.

Figure 3. Students' Preferences Concerning Future Learning in Relation to
(a) Experience with Traditional Higher Education and (b) Form of Studies.

5.4 RQ4: Students' Prediction of the Role of Distance Learning in Education

Respondents' predictions concerning the role of distance learning in education were diversified, with the domination of hybrid education (Figure 4). However, part-time students seem to be more inclined towards distance learning.

Figure 4. Students' Predictions of the Future of Learning in Relation to
(a) Experience with Traditional Higher Education and (b) Form of Studies.

6. Discussion

The basic criteria for the data analysis were experience with learning in the traditional form (on premise) and the form of studies (full-time, part time). These criteria are not fully independent, since a large proportion of part-time students have extensive experience in traditional education, especially among those who study at master level. Such interdependence is visible in some convergence of the results for students with extensive experience in traditional learning and part-time students. There is no decrease in wellbeing among part-time students, on the contrary, an improvement is noticeable; the difference from full-time students is clearly visible. This might be caused by the following factors: (1) their work – part time students usually have an additional group in social contacts (work colleagues) and have activities other than studies; (2) global overload - studies in the case of part-time students require more effort and resources than in the case of the full-time variant (weekend meetings, the entire weekend at the university), hence the remote form of studies might be perceived by them as a benefit - a kind of rest for them.

Among the types of classes in which the students participated, all distinguished groups of respondents agreed that "lectures" in the distance form are a better solution compared to the traditional form. In the case of activities requiring more personal interaction, such as "workshops" or "labs", distance classes were rated as "worse". The assessments of "seminars" are more varied, as this form of learning requires a more individualized form of cooperation between students and teachers; the differences in the assessment of seminars might result from various experiences and preferences concerning individual contacts. Taking into account various aspects of learning, in all the groups, in all aspects except the "feeling of comfort during classes", the "neutral" and "worse" assessments dominated; this applies in particular to the aspects of teaching that are based on the interaction among students or between students and teachers. This confirms the previous assessment with regard to the forms of classes. It can also be noted that although the lectures in the distance form were considered optimal, their role is not dominant in the educational process since a high percentage of students perceived distance learning as "worse" in the context of understanding the material. Against this background, the assessment in the aspect of "feeling of comfort during classes" indicates that participation in a traditional form of classes is associated with additional stress for many students, which may be caused by a stronger pressure from both the teachers and other students for proper behavior, attitude, or activity in class. In the assessment of the forms of skills and knowledge verification, for all assessed forms, the "neutral" rating dominates, with a predominance of "better" over "worse" ratings. This can be caused by a greater sense of comfort during the distance form of knowledge verification, which allows students to focus more on the test/exam content and not to be distracted by the necessity of additional requirements of the traditional form, such as dress-code or posture.

The assessment of the suitability of various forms of classes for distance learning coincides with the students' opinions about these classes, in which the students participated, conducted in the distance form. We can notice a very positive assessment of distance lectures, for which, in the opinion of the majority of respondents, the distance form is optimal. Taking into account the students' opinions on the different forms of teaching, we can conclude that maybe some other forms of teaching should be developed that might fit more to distance learning, which has been already suggested in previous studies (Krishnamurthy, 2020; Ackerman & Gross, 2021). New technologies, such as virtual or augmented (mixed) reality open up new possibilities of interactivity, and thus might eliminate the lowest-rated aspects of distance learning.

Part-time students more often than full-time students indicate the distance form of learning as their preference. At the same time, it should be noted that a significant percentage of students would try to avoid this form of classes, which indicates that it is not in line with their expectations or preferences. Most respondents foresee the hybrid form of learning as optimal (some remote classes, some on premise). Taking into account their previous opinions concerning the form of classes, it seems that the form should be adjusted to the type of classes. However, it should be noted that there are two extreme opinions concerning the future studies: there are students who would prefer only one form of learning, traditional or distant.

The main limitation of the study is sometimes using only one survey item to gather students' opinions on some phenomena, e.g. wellbeing. However, when designing the survey we had to have in mind the potential respondents, who are usually not willing to fill in overly long surveys. Besides, we gathered data only from one university, therefore any conclusions should be drawn with caution.

7. Conclusion

The research conducted among the students of the Cracow University of Economics, Poland, shows that although we can generally speak of a positive attitude towards remote education imposed by the pandemic, a significant group (about 20%) of students intend to avoid this form of education in the future. There is also a visible difference in the opinions between full-time and part-time students, which may result from their different stages of life development. While full-time students are mostly still at the formal educational stage, part-time students have mostly finished this stage, started working, and in their case studies should be included in the lifelong learning category (adult learning). It also means that these two groups differ not only in their motivation and commitment to the learning process, but (e.g. due to their age) have more precise expectations based on their own experiences (they know what they

want), they are also more independent and disciplined, but have a more limited time capacity (they often have to combine full-time work with studying).

Educational institutions must find themselves in this rather complex situation. They should not exclude anyone from access to education, which means that their offers should meet the expectations of both those who prefer on premise forms and those positively oriented towards distance forms. With regard to the types of studies, it can be suggested that universities should expand the offer of fully or partially remote studies in the form of part-time studies. In full-time studies, however, there is room to increase the role of distance learning, but this should not be in the form of resignation from on premise classes. The optimal solution would be to organize the teaching process in such a way that a student can choose the form of realization of individual classes, tailored to his/her preferences and abilities. This may cause a significant number of organizational and administrative problems and may also affect the costs of education and put more demands on teachers (one subject delivered in two forms), but in the longer term, taking steps to implement distance learning adjusted to individual needs of students may determine the future of educational institutions.

Acknowledgments

References

Ackerman, D. S., & Gross, B. L. (2021). Synchronous online discussion board as a primary mode of delivering marketing education: Responding to the COVID-19 pandemic and beyond. *Marketing Education Review*, *31*(4), 284-293.

Afrianty, T. W., Artatanaya I. G., & Burgess J. (2022). Working from home effectiveness during COVID-19: Evidence from university staff in Indonesia. *Asia Pacific Management Review*, *27*(1), 50-57.

Agarwal, A., Bansal, K. M., Gupta, A., & Khurana, R. (2021). Online education: A booming product for institutes post-COVID-19?. *Marketing Education Review*, *31*(3), 262-272.

Boyer-Davis, S. (2020). Technostress in higher education: An examination of faculty perceptions before and during the COVID-19 pandemic. *Journal of Business and Accounting*, *13*(1), 42-58.

Code, J., Ralph, R., & Forde, K. (2020). Pandemic designs for the future: perspectives of technology education teachers during COVID-19. *Information and Learning Sciences*, *121*(5/6), 419-431.

Conrad, R. C., Hahm, H. C., Koirea, A., Pinder-Amaker, S., & Liu, C. H. (2021). College student mental health risks during the COVID-19 pandemic: Implications of campus relocation. *Journal of Psychiatric Research, 136*, 117-126.

Dymek, D., Grabowski, M., & Paliwoda-Pękosz, G. (2021). Change of students' online behavioural patterns during the COVID-19 pandemic: Insights from Poland. In: Soliman (Eds.), *Proceedings of the International Business Information Management Association Conference*, *38*, (pp. 3263–3272), Seville, Spain.

Helyer, R., & Lee, D. (2014). The role of work experience in the future employability of higher education graduates. *Higher Education Quarterly*, *68*(3), 348-372.

Herbert, C., El Bolock, A., & Abdennadher, S. (2021). How do you feel during the COVID-19 Pandemic? A survey using psychological and linguistic self-report measures, and machine learning to investigate mental health, subjective experience, personality, and behaviour during the COVID-19 pandemic among university students. *BMC Psychology*, *9*(1), 1-23.

Joshi, A., Kale, S., Chandel, S., & Pal, D. K. (2015). Likert scale: Explored and explained. *British Journal of Applied Science & Technology*, *7*(4), 396-403.

Krishnamurthy, S. (2020). The future of business education: A commentary in the shadow of the COVID-19 pandemic. *Journal of Business Research*, *117*, 1-5.

Lee, J., Jeong, H. J., & Kim, S. (2021). Stress, anxiety, and depression among undergraduate students during the COVID-19 pandemic and their use of mental health services. *Innovative Higher Education*, *46*, 519-538.

Liu, C., McCabe, M., Dawson, A., Cyrzon, C., Shankar, S., Gerges, N., Kellett-Renzella, S., Chye, Y, & Cornish, K. (2021). Identifying predictors of university students' wellbeing during the COVID-19 pandemic - A data-driven approach. *International Journal of Environmental Research and Public Health*, *18*(13), 1-10.

Meshram, K., Paladino, A., & Cotronei-Baird, V. S. (2022). Don't waste a crisis: COVID-19 and marketing students' self-regulated learning in the online environment. *Journal of Marketing Education*, January, 1-23.

Naddeo, A., Califano, R., & Fiorillo, I. (2021). Identifying factors that influenced wellbeing and learning effectiveness during the sudden transition into eLearning due to the COVID-19 lockdown. *Work*, *68*(1), 45-67.

Rapanta, C., Botturi, L., Goodyear, P., Guàrdia, L., & Koole, M. (2021). Balancing technology, pedagogy and the new normal: Post-pandemic challenges for higher education. *Postdigital Science and Education*, *3*, 715-742.

Regmi, K. D. (2015). Lifelong learning: Foundational models, underlying assumptions and critiques. *International Review of Education*, *61*(2), 133-151.

Rippé, C. B., Weisfeld-Spolter, S., Yurova, Y., & Kemp, A. (2021). Pandemic pedagogy for the new normal: Fostering perceived control during COVID-19. *Journal of Marketing Education*, *43*(2), 260-276.

Spais, G., & Paul, P. (2021). A crisis management model for marketing education: Reflections on marketing education system's transformation in view of the COVID-19 crisis. *Marketing Education Review*, *31*(4), 322-339.

Stewart, W. H., & Lowenthal, P. R. (2021). Distance education under duress: A case study of exchange students' experience with online learning during the COVID-19 pandemic in the Republic of Korea. *Journal of Research on Technology in Education*, *54*(sup1), 1-15.

Vander Schee, B. A., & Birrittella, T. D. (2021). Hybrid and online peer group grading: Adding assessment efficiency while maintaining perceived fairness. *Marketing Education Review*, (31), 275-283.

Appendix

1. Gender: male; female; prefer not to say
2. Study level: undergraduate; MA studies; doctoral studies
3. Form of studies: full time; part time
4. Year of study: first; second; third; fourth; fifth or higher
5. Age: under 20; 20 - 24; 25 - 30; 31+
6. I use information and communication technologies/tools at the level of: beginner; below average; average; above average; professional
7. My technical conditions (access to the Internet and equipment: PC, laptop, tablet, smartphone, etc.) I would describe as: I have constant problems; I have frequent problems; Sufficient for basic needs; I have occasional problems; I do not have any problems
8. How has your wellbeing changed after switching to distance learning? (Significantly deteriorated; worsened; no change; improved; significantly improved).
9. What is your attitude towards distance learning (not only organized forms but also e.g. training videos on YouTube)? (I don't like it and try to avoid/ I don't like it but I use it/neutral/ I prefer it/ I definitely prefer it); Before the pandemic | During the pandemic
10. Evaluate the effectiveness of the given forms of distance learning activities (workshops/lectures/seminars/laboratories/consultations) in relation to traditional learning on a scale (did not participate/unsuitable/slightly worse/same effectiveness/slightly better/optimal)
11. Which form of classes (workshops/lectures/seminars/laboratories/consultations) could be conducted remotely, in your opinion, after the pandemic is over? (Evaluate each of them on the scale: I don't have an opinion/unsuitable/"it's ok"/preferred form)
12. What do you think will be the trend in forms of education after the end of the pandemic? I think it will be (complete abandoning of the remote form of learning/frequent use of the distance learning form/hybrid form of learning/very frequent use of distance learning/spreading the popularity of using fully distance learning courses)
13. In your opinion, what form of studies will be preferred by future students after the pandemic is over? (Traditional (face-to-face classes with the occasional use of distance learning)/hybrid (face-to-face classes with significant use of distance learning)/remote (full studies using only distance learning))
14. In your opinion, how does the remote form of classes affect the quality of education (in the field of: understanding of the material/teamwork/interaction with the lecturer/interaction with other students/commitment during classes/feeling of comfort during classes). Rate it on the scale (much worse/worse/no difference/better/much better)
15. In your opinion, how do remote methods of completing the final exams (oral exam/multiple-choice test/exam with open questions/project and its presentation/written final work) affect the effectiveness of the verification of knowledge and skills? Rate on the scale (unsuitable/ decreases/no difference/improves/optimal)