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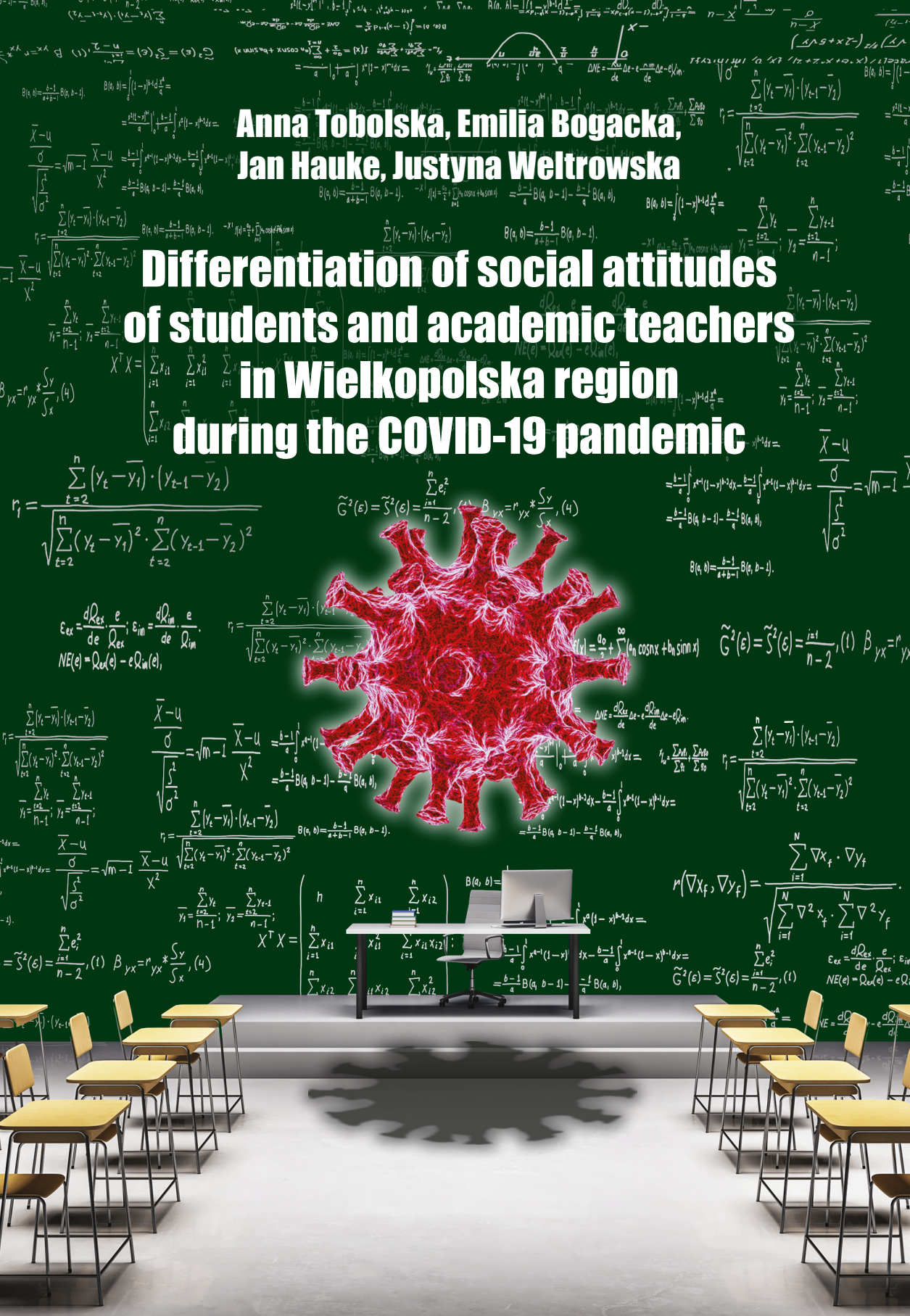

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Studia i Prace z Geografii nr 93

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Table of contents

1. Introduction

Unprecedented events in the entire world, including Poland, related to the COVID-19 pandemic have affected the daily lives of all people to varying degrees since the beginning of March 2020. This situation and the resulting restrictions, whose aim was to limit the spread of the pandemic, encourage reflection on numerous aspects of social life. One of the spheres strongly affected by the effects of the pandemic are educational services – by this term we primarily understand the functioning of primary, secondary and higher education institutions and their direct stakeholders i.e. teachers, school management, university authorities, pupils, students and students' parents. In the case of the present study, however, the focus was placed only on pandemic-related changes introduced in the higher education system. On 12 March 2020, i.e. two weeks after the beginning of the summer semester of the 2019/2020 academic year, the Ministry of Science and Higher Education announced the suspension of teaching activities at higher education institutions (HEIs) until 25 March. The decision was dictated by the need to prevent the spread of COVID-19. On 23 March, an ordinance was issued extending the suspension of full-time classes until 10 April and introducing the obligation of providing online education. At the beginning of April, the then Minister of Science and Higher Education, Jarosław Gowin, resigned, and in his place Prime Minister Mateusz Morawiecki issued another ordinance on 9 April, extending the restrictions until 26 April. Then, on 24 April, the new Minister of Science and Higher Education, Wojciech Murdzek, announced the extension of the restrictions until 24 May. Another ordinance was issued on 21 May – this time it modified the previous restrictions and allowed some classes to be conducted on site. During this period, rectors of individual HEIs issued detailed orders regarding the modification of the education process in various aspects – from the way of conducting online classes, laboratory and practical classes, through conducting credit and examination procedure, including diploma exams, together with extending the duration of examination sessions, or delaying the start of the new academic year, to the ways of contacting Dean's and administration offices. For example, at Adam Mickiewicz University, Poznań, the Rector issued an ordinance on the procedure and organization of diploma exams on 21 April 2020. Thus, the COVID-19 pandemic has remodelled the behaviour, functioning and organization of almost all education and higher education institutions, thereby affecting the lives of numerous families, whose members were associated with the system

of educational services. Above all, however, the execution of the didactic process began to take on different forms, forcing different behaviours from the various social groups involved. Before the pandemic, educational services made little use of e-learning methods, whereas during the pandemic they became the only possible teaching and learning tool. It can be assumed that after the highest wave of the pandemic has been over, the solutions implemented will become a permanent and important element of education.

This synthetically outlined picture of the problem became the basis for a research project undertaken by the authors of this study – employees of the Faculty of Human Geography and Planning at Adam Mickiewicz University, Poznań. Given the scale of the threat posed by the COVID-19 epidemic and its multifaceted consequences, we wanted to actively engage, within the framework of our scientific activity, in the empirical and explanatory recognition of selected aspects of the ongoing changes. Such activity is in line with public expectations of science being involved in solving real problems of the region and the country, as well as with the mission of our University. The presented monograph is therefore a report on the research carried out as part of the project titled "Differentiation of social attitudes in the area of educational services during the pandemic". Due to the scientific discipline represented and the specificity of geographical studies, the research problems were analysed from a regional perspective, i.e. they concern the entire Wielkopolska region, taking into account differences in the attitudes of the main stakeholders in educational services at the level of higher education, i.e. students and academic teachers. It needs to be added that the project implementation was possible due to the funding obtained through a competition announced by the Rector of Adam Mickiewicz University, Poznań, titled "Research on COVID-19", whose results were announced in September 2020.

1.1. Problem situation as the determinant of the research procedure in the light of selected concepts of socio-economic geography

As already mentioned, the presented study concerns the empirical research conducted among students and academic teachers of higher education institutions, both public and private, located in Wielkopolska. The concept organizing the research procedure referred to several trends in the socio-economic geography and spatial management studies, related to the so-called geography of education and behavioural geography. As for the first of these trends, i.e. the geography of education, the scope of research undertaken concerns issues related to the spatial organization of education, also at the tertiary level, as well as the hierarchy of academic centres and the spatial ranges of their impact, usually on a regional or subregional scale. An example of this type of research are the works of Zbyszko Chojnicki and Teresa Czyż, who studied e.g. the nature and role of research centres in Poland (Chojnicki and Czyż 1992), the spatial structure of science in Poland (Chojnicki and Czyż 1997), or regional changes in higher education during the systemic transformation (Chojnicki and Czyż 2000). Artur Bajerski,

an author from the same academic centre as those quoted above, i.e. from Adam Mickiewicz University, Poznań, has also published numerous works on the geography of education. Two of them concern the geographical approach to the issue in various historical contexts: one pertains to the interwar period in Poland (Bajerski 2016), and the other one – the transformations of the spatial structure of higher education in Poland in 1989 (Bajerski 2009). In his other papers, he analysed the establishment and location of state higher education institutions in the context of the decentralization of higher education in Poland (Bajerski 2012b), as well as the location factors of non-public higher education institutions (HEIs) in Poland (Bajerski 2011). The topics addressed by this author also included the impact of Poland's membership in the European Union on the internationalization of science and higher education in Poznań (Bajerski and Wawdysz 2014), as well as the competitive position of Poznań HEIs compared to other Polish and European metropolitan cities (Bajerski 2012a). His research shows that Poznań, as an academic centre, ranks third among the largest cities in Poland, and is a middle-ranking centre among European cities with a similar population. Researchers affiliated with academic centres outside Poznań, who studied issues related to higher education in geographical terms, included Nowosielska (2002), who explored the development of HEIs in the 1990s in cities of various sizes, and Borowiec (2010), whose work concerned the functioning of HEIs in Kraków and Rzeszów academic centres in light of the bipolar systems concept.

The other trend, aligning with the research topic undertaken in the present work, is the behavioural direction, developed in the research of socio-economic geographers since the beginning of the 1960s, especially in the Anglo-Saxon geography (Domański and Libura 1986). This research direction is related to, among others, the analysis of social attitudes towards various phenomena occurring in the local or regional space. In the Polish geography, the behavioural trend in social attitude studies was presented in the works by, among others, A. Jagielski (1977), B. Kortus (1981), Z. Taylor (1980), S. Misztal (1978), and B. Jałowiecki (1980) and concerned the attitudes of urban communities towards economic and natural phenomena. In the 1980s, studies by B. Domański (1983, 1985, 1989a, b, 1990) and B. Domański and G. Prawelska-Skrzypek (1986) were published. They provided a detailed analysis of the attitudes of urban communities towards industrialization (1990). Similar issues were also addressed in the works by A. Tobolska, who analysed the attitudes of employees of large industrial plants towards their privatization (Tobolska 1997, 2004), as well as the attitudes of local communities towards investments made by large international corporations (2017). One important finding resulting from the research conducted by geographers is that people's attitudes are not independent of the place (region, locality) in which they live – hence the behavioural analyses conducted by geographers focus on the perceptions and attitudes typical of local or regional communities, and above all on detecting regularities in the spatial differentiation of attitudes and preferences. It is therefore worth emphasizing that although analyses of attitudes belong mainly to the research field of sociological sciences and psychology, they are usually non-spatial analyses, unlike the studies of socio-economic

geographers. It should also be underlined that the basic findings, concerning both the terminology and the conceptual scope of the phenomenon of attitudes, have been formed on the grounds of sociological sciences and psychology. Based on the results obtained by representatives of these disciplines, attitudes can be defined as the expression of a person's cognitive-emotional state, connected with a specific tendency to act (Kocowski 1982, Balawejder and Popiołek 1992). The concept of an attitude reflects three basic aspects, namely knowledge about an attitude object, its evaluation and behaviours towards it. Thus, treating attitudes as a reflection of the three above-listed components, one can try to interpret them in the context of the influence of the attitude object on their formation. This approach is particularly well justified by the case of attitudes towards the so-called focal objects, i.e. those characterized by high psychological centrality and integrating properties (Kocowski 1982). In the case of our research project, new forms of education introduced in the times of rapid and radical changes caused by the COVID-19 pandemic, can be considered as such objects. Based on the presented concept of social attitudes and its application in previous research, we decided to use in this research project the category of attitudes to investigate the varied behaviours of the basic stakeholders in the higher education system, i.e. students and academic teachers, towards unexpected challenges related to the transition to new forms of online teaching and learning. The research also analysed the attitudes of graduates from some of the youngest age groups entering the labour market during the pandemic.

Therefore, while developing the research design within the project, changes in the applied forms and didactic methods caused by the situation related to the COVID-19 pandemic were adopted as the focal object of students' and academic teachers' attitudes. These changes mainly involve the use of online learning platforms and are linked to the suspension of traditional classes, i.e. those held in campus buildings. This new situation caused radical changes in the entire academic community regarding all three components of social attitudes, i.e. changes in the sphere of knowledge about new forms of online learning, changes in the perception and evaluation of these forms, as well as significant changes in the behavioural sphere of the subjects (i.e. students and lecturers) towards newly adopted forms of education. A graphical diagram of the research procedure in relation to selected explanatory concepts in the field of socio-economic geography is presented in Fig. 1.

When explaining the motives for adopting the conceptual and theoretical perspective outlined above, it should also be emphasized that the analysis of attitudes not only has a cognitive value, but may also be of practical importance for planning purposes, both at the level of individual HEIs and the entire national system of higher education, most often in cases when policymakers take actions to improve the functioning of certain systems. It is the cognitive value as well as the practical significance of research on social attitudes that should be considered a legitimate goal of the analyses carried out in our project.

It should also be emphasized that separate research topics related to changes in education due to the pandemic and not falling within the scope of the discipline

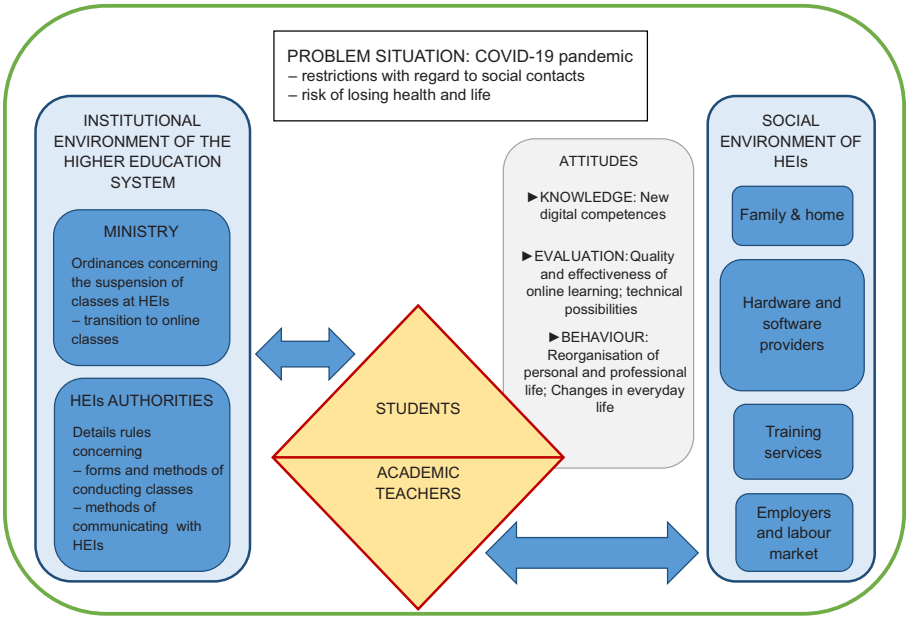

Fig. 1. Diagram of the research procedure in relation to the explanatory concepts in the field of socio-economic geography used in the project
Source: authors' own work.

represented by the authors (i.e. socio-economic geography and spatial management) certainly include those on the methodology of conducting classes in new forms (i.e. synchronous and asynchronous online classes) and in non-traditional conditions (i.e. outside the campus, most often at home). An entire range of social and psychological problems, which gradually have been emerging in the course of a prolonged period of online learning, also requires detailed specialist research. Therefore, the research problems we have addressed do not reflect the overall picture of changes in the sphere of education that have occurred in the pandemic, but are only a fragment that indicates several aspects of the situation, mainly of an organizational and behavioural nature. The need for broader and more detailed multi- and interdisciplinary analyses on all aspects of pandemic-influenced changes in education has also been pointed out by other authors of studies and reports that have already been published and whose synthetic overview is presented in Chapter 2.

1.2. Aim and scope of work

In view of the research procedure related to the problem situation and with reference to the conceptual assumptions adopted, the main aim of our study is to analyse the differentiation of social attitudes in the area of educational services at

the higher education level (i.e. those presented by students and academic teachers) during the COVID-19 pandemic.

In particular, the research aims to answer the following cognitive questions:

1) What are the social attitudes (knowledge, evaluation, behaviour) of students towards changes in the functioning of higher education institutions and teaching methods during the pandemic?

One of the detailed objectives of the project is to identify students' attitudes towards changes in the functioning of higher education institutions and teaching methods during the pandemic. In 2020, in mid-March, following the suspension of classes at HEIs, the academic community was faced with the dilemma of choosing new possibilities for continuing education and selecting its most suitable forms. Despite the fact that HEIs have made e-learning platforms available, a varying degree of their use, both by students and academic teachers, could be observed. Many student quickly accepted new forms of online learning, but some of them did not undertake any activity in this area for various reasons. The main problems that emerged were related to the technical and organizational possibilities of using new tools for continuing education. Given the basic objectives of higher education, it becomes important to identify the differing attitudes of students towards the new study conditions in the context of the new situation. In particular, it is important to:

- determine the scope of students' knowledge of new didactic tools, i.e. e-learning platforms, offered by HEIs for the delivery of classes;
- determine the extent to which students make use of new forms of online contact with the HEI, mainly with lecturers and other teaching staff;
- determine the scope of barriers preventing students from taking up classes in new e-learning forms;
- learn about students' evaluation of the forms of online learning offered and used (in different class groups, e.g. during lectures, laboratory classes, seminars);
- learn about students' evaluation of the organisation and delivery of online classes (including credits for each course and methods of examination, obtaining a diploma);
- learn about students' evaluation of new communication channels offered by HEIs;
- determine students' needs with regard to the organization of teaching in new online forms and their preferred methods of conducting classes;
- learn about students' opinions on new possibilities of using e-learning in the future and their impact on the organization of everyday activities of young people.

2) What are the social attitudes (knowledge, evaluation, behaviour) of academic teachers towards changes in the functioning of HEIs and teaching methods during the pandemic?

The task focuses on examining attitudes (knowledge, evaluation, behaviour) of academic teachers during the pandemic. The suspension of classes (practical classes, lectures and laboratory classes) in the traditional (offline) form at HEIs

took place around mid-March, and in the subsequent weeks, rectors of many of them issued relevant ordinances, making it possible to carry out some practical classes in the traditional form, although under conditions of a strict sanitary regime. In most cases, however, the majority of classes were transferred to the virtual sphere, which fundamentally changed the way teaching was conducted. Academic teachers with various technical skills and a varied degree of knowledge of e-learning platforms (few academic teachers had completed appropriate training authorizing them to conduct such classes) were obliged to conduct online classes practically overnight. In light of the existing situation, it becomes an important task to recognize the attitudes of academic teachers, in particular through:

- recognizing the knowledge of academic teachers about the tools that enable conducting online classes;
- analysing academic teachers' evaluation of their working conditions during the pandemic (availability of basic equipment for work, workplace);
- verifying the degree of academic teachers' readiness to work remotely, and conduct online classes in particular;
- learning about academic teachers' evaluation of the organization and methods of conducting online classes;
- analysing academic teachers' ability to combine remote work with everyday duties;
- identifying the advantages and difficulties of remote work experienced by academic teachers during the pandemic.

3) An additional research task, supplementing the overview of students' and academic teachers' attitudes, was also the analysis of the attitudes of the youngest graduates who entered the labour market under the conditions of the COVID-19 pandemic. In the study it was also decided to examine their assessment of new possibilities of using the acquired knowledge and competences in building their professional careers or continuing education based on new e-learning possibilities offered by numerous HEIs.

An important aspect of the work was to determine the spatial scope of the research due to the limited organizational and technical possibilities, i.e. a relatively small research team and a relatively extensive field of research issues related to the topic under consideration. The starting point was the statement that the general population of students and academic teachers to be studied is very large (almost two million people nationwide), and therefore it was necessary to decide only on a specific representative sample of the members of the researched communities, so as to collect as many answers as possible to the questions formulated in the survey within a specified timeframe. As a result, Wielkopolska region was selected as the research area, primarily for pragmatic reasons, i.e. due to the affiliation of the project team with the scientific community of the largest university in Wielkopolska region, i.e. Adam Mickiewicz University, Poznań. Another important factor was the size of this area – Wielkopolska region is the second largest region in the country, and in terms of population it ranks third. Thus, a detailed analysis of the research problems undertaken on the selected example of Wielkopolska region is also justified by its geographical potential.

The time frame covers the summer semester of the 2019/2020 academic year and the winter semester of the 2020/2021 academic year, i.e. the two most important semesters from the point of view of the changes introduced in the education system caused by the COVID-19 pandemic[1].

1.3. Research methods and source materials

The basic method used in the research is the survey method. A survey was conducted among students and academic teachers at HEIs in Wielkopolska region. Thus, it concerns a population of almost 115 thousand students and almost 9 thousand academic teachers who were associated with 31 HEIs located in Wielkopolska, including 10 public ones.

Before starting the actual survey, a pilot study was carried out with 46 students from 2 to 9 December 2020, and with 8 academic teachers from 7 to 9 December 2020. The pilot study allowed for establishing the final form of the questionnaire and to eliminating minor technical defects.

In the initial stage, based on the data about the number of students and academic teachers, the minimum sample size was established, assuming a 99% significance level and a 5% margin of error (Table 1). For this purpose, a calculator was used to calculate the sample size[2].

Table 1. The size of the population of students and academic teachers in Wielkopolska region in 2019 and the estimated minimum sample size

Group	Year	Population size (based on GUS data)	Sample size (99% significance level, 5% margin of error)
Students	2019	114856	662
Academic teachers	2019	8871	620

Source: own compilation based on Statistics Poland (GUS) data and https://www.surveymonkey.com/mp/sample-size-calculator/.

Invitations to fill in relevant questionnaires were sent to all higher education institutions, both public and private, operating in Wielkopolska region. The study was conducted with the use of Google Forms, with students from 12 January 2021 to 30 March 2021, and with academic teachers from 13 to 19 January 2021. 3398 responses from students and 726 responses from academic teachers were obtained. Basic information about higher education institutions participating in our research project and the number of respondents in both surveys are presented in Table 2 and in Figures 2 and 3. The basic characteristics of the

[1] By the decision of the Minister of Science and Higher Education, on 12 March 2020 the teaching activities of higher education institutions under the authority of the Ministry of Science and Higher Education were suspended throughout the country, while other methods of transferring knowledge were recommended, including online platforms and appropriate programmes.

[2] Calculator available at: https://www.surveymonkey.com/mp/sample-size-calculator/

students and academic teachers participating in the study are presented in Tables 3 and 4, respectively.

Table 2. Number of responses provided by students and academic teachers from individual higher education institutions in Wielkopolska region

Higher education institution	Type of establishment	Number of responses	
		students	academic teachers
President Stanisław Wojciechowski Calisia University	public	69	14
Ignacy Jan Paderewski Academy of Music in Poznań	public	101	36
Eugeniusz Piasecki University of Physical Education in Poznań	public	41	16
Collegium da Vinci	private	0	1
Gniezno Higher School Millennium	private	111	15
Stanisław Staszic University of Applied Sciences in Piła	public	27	15
State University of Applied Sciences in Konin	public	182	21
Jan Amos Komenski University of Applied Sciences in Leszno	public	1	15
Poznan University of Technology	public	11	21
Magdalena Abakanowicz University of the Arts in Poznań	public	180	23
Poznań University of Economics and Business	public	104	15
Adam Mickiewicz University, Poznań	public	2350	406
Karol Marcinkowski University of Medical Sciences in Poznań	public	15	23
University of Life Sciences in Poznań	public	5	19
WSB University in Poznań	private	0	44
University of Security in Poznań	private	92	1
Kazimiera Milanowska College of Education and Therapy in Poznań	private	77	8
Academy of Hotel Management and Catering Industry in Poznań	private	0	2
Samuel Bogumił Linde College of Modern Languages in Poznań	private	0	2
Poznań School of Logistics	private	0	5
Michal Iwaszkiewicz University of Social Sciences	private	0	2
School of Management and Banking in Poznań	private	0	7
no data		32	15
Total		3398	726

Source: own compilation based on the results of the survey.

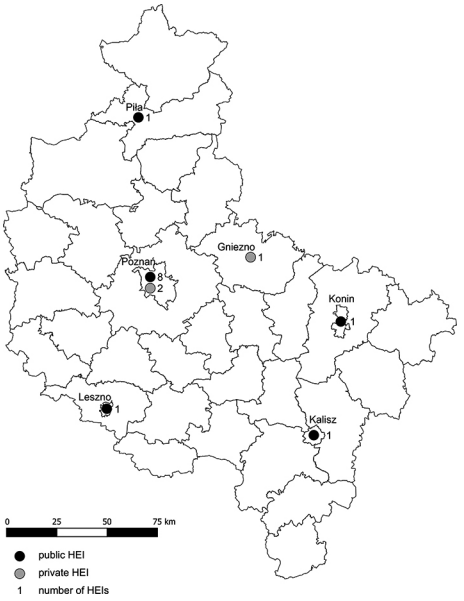

Fig. 2. Number of public and private HEIs, whose students provided responses to the survey questionnaire
Source: authors' own work.

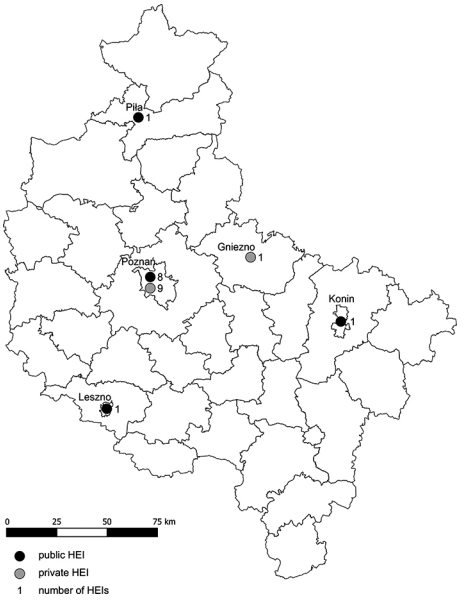

Fig. 3. Number of public and private HEIs, whose employees (academic teachers) provided responses to the survey questionnaire
Source: authors' own work.

Table 3. Basic characteristics of the students participating in the study

Gender	female	73.8%
	male	26.2%
HEI type	public	91.7%
	private	8.3%

Source: own compilation based on the results of the survey.

A complementary task undertaken within the study was to identify the social and economic behaviours, and specifically the career steps, of higher education graduates during the pandemic. Within this task, the survey method was also used and requests for filling in the questionnaires were addressed to all HEIs, both public and private, operating in Wielkopolska region. Before starting the actual survey, a pilot study was carried out with 3 graduates from 10 to 11 December 2020. The pilot study allowed for establishing the final form of the questionnaire and eliminating minor technical defects. The survey was conducted using Google Forms and as a result, 134 alumni responses were obtained. Many schools refused to send out questionnaires to their graduates, motivating it with the protection of personal data. When characterizing the sample of graduates participating in the survey, it should be noted that the vast majority, 69.7%,

Table 4. Basic characteristics of the academic teachers participating in the study

Gender	female	57.2%
	male	42.8%
Age	younger than 30	4.3%
	30–34 y.o.	11.2%
	35–39 y.o.	13.8%
	40–44 y.o.	19.1%
	45–49 y.o.	16.1%
	50–54 y.o.	12.3%
	55–59 y.o.	9.4%
	60–64 y.o.	5.9%
	65 or above	8.0%
Experience	< 5 years	12.0%
	5–10 years	14.6%
	11–15 years	14.5%
	15–20 years	14.9%
	21–25 years	15.6%
	> 25 years	28.5%
Position	research and teaching	65.6%
	teaching	34.4%
HEI type	public	87.8%
	private	12.2%

Source: own compilation based on the results of the survey.

graduated in 2020, and 15.9% in 2019, whereas 4.5% in 2018, and 3% in 2017. The remaining 6.9% of respondents graduated in the previous years. When it comes to the courses, 30.8% of respondents completed courses in the field of natural sciences and the same number in the field of social sciences, 18% in the field of engineering and technical sciences, 12% in the field of humanities, 3.8% in the field of medical sciences, 3% in the field of exact science, 1.5% in the field of art. The vast majority of respondents indicated Poznań as their place of residence (56.3%). The results obtained are discussed in Chapter 5.

Sample questionnaires are included in the appendices: 1 (Classes during the pandemic. Experiences, reflections, perspectives) and 2 (Attitudes of academic teachers during the pandemic) and in 3 (The importance of completing higher education during the pandemic).

The analysis and processing of the results were performed with the use of the following statistical and mathematical methods:

- non-parametric statistical methods were used for qualitative data
- parametric and non-parametric statistical methods were used for scale data (e.g. Likert scale data)
- parametric statistical methods, including multivariate methods, were used for quantitative data obtained as a result of transforming empirical data.

2. Higher education during the pandemic in current publications and reports

The present paper is not the first and not the only one that discusses the functioning of the higher education system during the pandemic. What sets it apart is the regional approach to the research problem characteristic of socio-economic geography. The authors focus on a selected geographical region – Wielkopolska region. The research perspective selected, i.e. referring to categories of social attitudes of participants of the education process at HEI level, namely students and academic teachers, seems different to what has been published to date in other articles on various aspects of higher education during the pandemic. Since the introduction of restrictions in the teaching process and the move from face-to-face to online and blended teaching, new articles and reports prepared based on empirical research have been published on this unexpected and quite radical change in the organization of programmes and the functioning of higher education institutions. One of the first publications of this kind was the report prepared by a group of sociologists from the Adam Mickiewicz University, Poznań published in June 2020, entitled "Everyday life during the pandemic" („Życie codzienne w czasach pandemii", Drozdowski et al. (2020[3])). However, their work applied to the general population of Poland and the authors focused on issues including the reorganisation of Poles' everyday lives caused by the COVID-19 epidemic and how the adapted to change. The research was conducted in two phases. The first phase took part between 19 and 24 March 2020 and involved an Internet survey created using Google Forms. The second phase took part between 31 March and 8 April 2020. In total, 1294 people presented their opinions on changes in work and regarding employment as well as changes in their everyday behaviours. The respondents also evaluated the actions taken by others as well as described the emotions they experienced. The research shows that the respondents experienced major changes in their work mode and social isolation. In their answers, they listed the lack of contacts with other people as the biggest problem they are experiencing (about 60%), while at the same time they said that having more

[3] http://socjologia.amu.edu.pl/images/pliki/Zycie_codzienne_w_czasach_pandemii._Raport_z_drugiego_etapu_badan_wersja_pe%C5%82na.pdf

time for their relatives and a slower pace of life were the biggest advantages of the pandemic situation (about 30%).

Among the first Polish articles that focus on the functioning of higher education instead of presenting a general view of the social situation during the pandemic are the reports "The duality of the teaching process during the coronavirus pandemic" ("Dualność procesu nauczania w czasie epidemii koronawirusa", Jurczak 2020) and "Education in the time of coronavirus. Case study of a university." ("Edukacja w czasie zarazy. Przypadek uniwersytetu", Kobylarek 2020). There are also preliminary studies in academic literature around the world on the changes occurring in education during the pandemic, e.g. A.E. Al Lily et al. 2020, "Distance education as a response to pandemics: Coronavirus and Arab culture", Basilaia and Kvavadze 2020, "Transition to online education in schools during SARS-CoV-2 Coronavirus (COVID19) Pandemic in Georgia" and R.H. Huang et al. "Handbook on Facilitating Flexible Learning During Educational Disruption: The Chinese Experience in Maintaining Undisrupted Learning in COVID-19 Outbreak". These publications focus mostly on the organisational and technical issues related to introducing online teaching in the authors' countries and regions as well as on the attitudes of e.g. students towards new educational challenges (e.g. Tran et al. 2020, "Sustainable Learning during School Suspension: socioeconomic, occupational aspirations and learning behaviour of Vietnamese students during COVID-19").

In the following months, after our team has commenced this research project, an increasing number of articles became available, focusing on various aspects of functioning of the higher education system during the pandemic as well as the limitations and new opportunities that presented themselves in the pandemic situation. First, it is worth mentioning the results of the study by Pawlak (2020), "The opinions of lecturers of public higher education institutions in Poznan on remote teaching methods during the COVID-19 pandemic" ("Zdalne metody kształcenia podczas pandemii Covid-19 w ocenie wykładowców publicznych szkół wyższych miasta Poznania"). The author presents quantitative and qualitative results of representing the familiarity of academic teachers working at public higher education institutions in Poznań with online teaching methods and tools as well as their application by teachers. The research was conducted in 2020 and involved a survey published in Google forms cloud in which 668 academic teachers provided their answers. The results obtained indicate that 84% of academic teachers decided to conduct their classes and lectures in the most innovative and interactive form of a webinar (i.e. live-streaming their classes) as early as in the first month after the suspension of traditional classes and lectures. The applications used for this purpose most frequently include Skype (96.1%), Moodle (77.4%), Microsoft Teams (76%) and Zoom (73.2%). The data collected also indicates that 73.2% of teachers acquired skills in organizing classes on their own, using trial and error, and 65.2% used guides available on the Internet. Considerably fewer people (44.9%) used the materials provided by their higher education institution or published on their HEI's website. The remaining teachers (25.4%) learned to use Internet platforms from their co-workers, and a small

number (0.5%) learned to use them with the support of students. The majority of respondents (61%) shared a positive view on online teaching methods involving the use of Internet platforms when comparing them to traditional methods. The respondents also highlighted other positive aspects of online teaching such as recording classes which allows them to be replayed later by students at times favourable to them. Also mentioned was the environmental benefit of students not having to commute to their HEI and lower consumption of paper. The disadvantages included the problems with conducting classes that require specialist laboratories (or sometimes the inability to conduct such classes at all). Also mentioned were the lack of social aspects and the inability to form correct attitudes in students. The majority of academic teachers (83%) said that conducting online classes requires more work on their part than traditional teaching. In his article the author also notices that "distance learning" requires greater self-awareness, motivation and better organisation skills on the student's part. At the same time, online teaching has a number of benefits such as the flexibility in following the course curriculum in accordance with the students' personal schedules and at a pace that meets their aptitudes. There is also no need to commute and there are additional savings on the costs of food and accommodation. The disadvantages of the new system listed by the author include problems with access to computer equipment and lack of Internet access. Another problem that limits the potential of online teaching is the insufficient skills of teachers. The author concludes that there are too few comprehensive articles discussing the issue of online teaching in the context of higher education institutions. We can therefore assume that to a large extent the project undertaken by our team addresses the shortcomings listed by J. Pawlak and the certain aspects of his results can be used in comparison with the results presented herein.

Another interesting article discussing the conditions in which higher education institutions operate during the pandemic is the paper "Remote internationalisation? Educational mobility of students in the time of change." ("Zdalne umiędzynarodowienie? Mobilność edukacyjna studentów w obliczu zmian") by Zapotoczna. However, this article focuses on one specific aspect, i.e. internationalisation. Presented therein is a compilation of data from recent European studies devoted to the impact of COVID-19 on internationalisation strategies, with a particular emphasis on international mobility of students. The reference materials studied contain prognoses and recommendations directed towards finding effective solutions, limiting the impact of the crisis and supporting adaptations to functioning in new conditions. The author's conclusions provide a very interesting view that paradoxically the present experiences of higher education institutions can improve their international activity and provide new abilities to increase their potential in an international environment.

There are numerous research reports and experts' opinion reports among publications related to studying and students during the pandemic. One of the earliest reports of this variety detailing the opinions of Polish university authorities was "How will COVID-19 affect studying in the 2020/21 academic year?" ("Jak COVID-19 wpłynie na studia w roku akademickim 2020/21") prepared

by the EFEKTY Centre for Education and Development at the beginning of the 2020/21 academic year. The study involved 135 representatives of HEI authorities (rectors, deputy rectors, deans, deputy deans, chancellors), most of them representing public higher education institutions (82% of respondents). It is worth noting the opinions of respondents regarding the preparation of their HEI for online teaching – 66% of them said that their faculties and HEIs are very well prepared for online teaching. At the same time, one third of respondents said that their institution is completely unprepared for the new academic year. Additionally, 38% of respondents representing public HEIs said that at least some classes cannot be conducted properly using e-learning (this number was almost three times higher than in the case of private institutions – 13%). Meanwhile, a considerable number of respondents stated that it "depends on the teacher" (37% in the case of public HEIs and 13% in the case of private schools) which, according to the authors of the report, indicates the need for introducing systemic solutions focusing on modern online teaching methods in a considerable number of higher education institutions and faculties.

A comprehensive report from research on "emergency online teaching" in the first months of remote teaching at Polish higher education institutions has been prepared by Marta Klimowicz PhD, who specialises in sociology of the Internet. Based on focus group interviews with 17 academic teachers representing various faculties conducted in June 2020, the author formulated a number of observations and conclusions regarding their experiences and problems they had to face at that time related to using modern technologies in their didactic process. Using the information collected, the author distinguished five phases which reflect the general experiences of teachers participating in her study: Phase I: "Uncertainty and chaos", Phase II "Support (or lack thereof)", Phase III "The new normal", Phase IV "Overload", Phase V "Coming to terms with the situation and drawing conclusions". When characterising the individual phases the author lists the problems appearing over time such as: surprise, fear of losing one's job at a private institution, return of students to their home towns, selection of tools – online teaching platforms, lack of institutional guidelines and passing the responsibility on to teachers, technical difficulties (e.g. new tools did not work on old computers), frustration and lack of ongoing technical support, excessive number of on-line teaching courses vs. own experience in using online teaching tools gathered in practice, support from colleagues, digital exclusion of older faculty members, technical difficulties experienced by students at their homes (lack of access to computer equipment and fast Internet connections), "talking to a screen", "dead souls" – students who pretend to be attending classes, additional difficulties in communicating with foreign students, being overloaded with work related to preparing classes or lectures, discovering new functionalities of online platforms, doubts regarding turning cameras on and revealing private spaces, increased supervision and bureaucracy, the need to redesign classes, waiting for systemic solutions, verification of knowledge in the context of students' "creative approach" to examinations. The in-depth analyses of problems encountered in each of the aforementioned phases provided in the report make it possible to

draw up comparisons with the results of the present project. Over its course we identified several similar problems despite the time that passed between the two studies.

The report "The Future of Higher Education: Digital Transformation is Critical to Learner and Institution Success" by R. Yesner was published in August 2020. It was prepared as an "IDC White Paper" for the International Data Corporation (a global information technology and services and telecommunications advisory company), sponsored by Salesforce.org (a non-profit organisation offering support to educational and goodwill institutions). The results were based on a study conducted as part of the project "Digital Transformation Strategies" focusing on educational strategies. The study was conducted in the years 2019 and 2020 using surveys sent to several global educational institutions as well as using telephone interviews with key employees of Salesforce and leaders of digital transformation at the Arizona State University (ASU), BI Norwegian Business School, Monash University and London School of Economics and Political Science (LSE). In principle, the report focuses on the evaluation of digital transformation in higher education as a general trend occurring in response to the changing needs of students and employers, leading to changes in the higher education institutions' business model. It has been noticed that the pandemic made it even clearer that increased flexibility in offering online education services is needed and that "agility" is required, i.e. the ability of higher education institutions to react quickly to major crises, so that they can continue with their mission. Additionally, the results indicate that the COVID-19 pandemic has become a turning point in the digital transformation of higher education institutions, a "wake-up call" that forced them quickly switch their didactic models to online teaching, remote work and moving entire education processes online. The answers provided by respondents indicate that the situation during the pandemic forced higher education institutions to react in innovative ways and also made them aware that some aspects of their functioning will not return to how they were before and the result will be the "next normal". The COVID-19 pandemic also convinced institutions to consider what their most urgent needs in accelerating digital transformation are. In the study conducted in April 2020, higher education institutions stated that their first priority was to "enhance the capabilities of software for digital innovations" and the second was to "create new remote office- and company-wide cooperation systems". According to the respondents, addressing these key areas will provide long-term resistance to future crises. Therefore, we may conclude that although the results of this report do not correspond directly to the goals of the project presented herein, they demonstrate the general situation of higher education from a global perspective, which to a large extent also reflects the situation in our region during the first months of the pandemic.

The report prepared by Mazur (2020) and the Polish analytical group 300RESEARCH, part of the information portal 300GOSPODARKA (https://300gospodarka.pl), is similar to the study mentioned before. Based on documents prepared by various institutions, different agendas and a number of thematic publications (e.g. ministry reports, Independent Students' Association report,

Deloitte reports) the 300RESEARCH report characterised the capabilities and strategies for digital transformation of Polish higher education institutions (the report refers to them as the "ecosystem of digital research") as well as the expectations of businesses regarding the digital competences of graduates. Even though the report focuses on the general digitalisation level of higher education institutions in Poland, it also discusses the conditions for digital transformation during the pandemic. One of the conclusions formulated in the report in the context of higher education institutions' adaptation to new forms of remote teaching applies to competing for e-students: "The accelerated implementation of online teaching caused by the pandemic may serve to intensify the globalisation of competing for students. If it became possible to graduate from some of the best HEIs by attending classes in the virtual world, the position of Polish higher education would change dramatically. Caring about teaching quality and introducing student-oriented solutions are key components in competing for students' interest" (ibid. p. 23).

Several valuable articles were published at the Pedagogical University of Krakow. It is worth noting that each of them focused on a different phase of the pandemic. The first report, published by Długosz (2020a), focused on the attitudes of students in Krakow facing the hazards of a coronavirus pandemic (the respondents were students of the Pedagogical University of Krakow). The study conducted as early as 18–21.03.2020 demonstrated that students were very interested in the coronavirus pandemic. In relation to the report presented herein, two parts of that study are particularly interesting. First, the one devoted to the psychosomatic condition of respondents stating that the students are mostly satisfied with their life quality and that their behaviour in the new situation is mostly based on common sense. Secondly the part devoted to the life of students in the digital world and their activity outside the web, which states that in the initial phase of the pandemic the students used the Internet not only to read their emails or follows social media, but also used it to maintain contact with their friends and family. It was very uplifting that over 1/3 of students focused on helping the elderly with shopping and other errands. The study on students' attitudes in a hazardous situation by Długosz (2020b) was repeated in 26.05–07.06.2020 with the survey supplemented with questions regarding their opinion on online teaching. The results indicate that the attitudes and psychological condition of students changed. The respondents were less interested in the issues related to the pandemic, their life satisfaction was lower and their stress levels were higher. From the standpoint of the report presented herein the students' evaluation of online teaching is particularly important. The opinion of students from the Pedagogical University of Krakow on the new form of education was positive. They especially valued the time saved on commuting, working in comfortable conditions at home and freedom in choosing the time for studying. They also noticed the disadvantages of the situation: excessive load with material to learn, lack of contact with their peers and academic teachers and limited ability to interact with the latter. Burnout caused by this method of teaching was visible, as were the growing psychological fatigue, decrease in motivation and generally lowered effectiveness.

Another paper, by Długosz and Foryś (2020), focused on online teaching at the authors' alma mater, and included the students' and the teachers' perspective. An interesting issue discussed in that report was the technical conditions for online teaching. The majority of students has the computer equipment that allows them to participate in the teaching process. However, their opinion on the process itself is not unequivocally positive because most of the students have assigned it the "average" score. A significant majority of respondents claims that studying is not as good as it was when they attended face-to-face classes. MS Teams is the preferred method for conducting online classes live and many respondents also selected providing course materials, e.g. presentations as their preferred method. In the beginning of July 2020, the authors conducted a survey among academic teachers. They had mixed experiences during the first semester of online teaching. The authors notice a considerable, mostly negative, impact of the pandemic on professional activity. The teachers were positive about their competences in conducting online classes, even though their prior experience with this matter was rather limited. It is worth noting that the teachers devoted considerably more time to preparing classes in this new form of teaching. Many teachers indicated that they are willing to use online classes as a supplementary solution even after traditional teaching is possible once again. The teachers found more disadvantages than advantages of online teaching. The former include: lack of face-to-face meetings, lack of contact with students and work colleagues, inability to directly verify students' knowledge, difficulties in getting feedback during classes, and excessive workload related to preparing classes. The latter are: saving time on general preparations to go to work and commuting.

A detailed view of higher education institutions and students in Poland during the pandemic was presented in experts' reports published in economics periodicals e.g. in "Biznes DGP", a supplement to the "Dziennik Gazeta Prawna" journal, published on 1.10.2020, entitled "Go study" ("Na Studia"). In his article "Academic year dominated by COVID-19" ("Rok akademicki pod znakiem COVID-19"), P. Otto summarises his interviews with spokespersons from several largest Polish higher education institutions (including the University of Warsaw, University of Gdańsk, Wroclaw University of Economics and Business, Vistula University in Warsaw, University of Information Technology and Management in Rzeszów) and identifies a number of crucial issues which had to be resolved by HEIs organising blended programmes in the new academic year, with the majority of classes still conducted online. The critical issue was the preparation of uniform IT tools and obligating academic teachers to use them when teaching online as well as preparing recommendations or guidelines for the organisation of online classes. Apart from the above technological challenges, there were also methodological issues which applied to conducting classes and lectures and interacting with students who are now "on the other side of the screen", not in a lecture hall. This is important, as studying at a higher education institution is more than just mechanically acquiring knowledge and the entire teaching process is based to a large extent on interpersonal relations which are more difficult to maintain using just a Zoom window. An additional problem was self-discipline:

within the walls of their institution the students motivate each other, it is more difficult to find motivation when at home. The article also points out that numerous students work as well as study and they are also experiencing the economic effects of the pandemic, mostly caused by the lockdown and the same applies to their families that help support them.. All representatives of higher education institutions interviewed stated that COVID will forever change life at higher education institutions and that the existing situation accelerated many processes and the introduction of solutions which will stay part of the education system. Experiences of the summer semester also showed that remote work is well suited for many applications and that many solutions will become part of the teaching process and organisation of research. However, they will be used mostly as a supplement to traditional methods. The interviewees said that nothing will replace traditional teaching because nobody wants this to happen – neither the teachers nor the students. Another article, "A higher education institution must provide young people with conditions for development" ("Uczelnia musi stwarzać młodym ludziom możliwości rozwoju") by Otto and Topoliński was also prepared based on interviews with experts (including the undersecretary of state at the Ministry of Science and Higher Education, president of the Polish Academic Economic Forum, president of the Students' Parliament of the Republic of Poland). It lists a number of pragmatic and economic aspects of the switch to online teaching. In many cases, higher education institutions are the largest employers in a city and students are the most numerous group using e.g. public transport, dormitories and leisure infrastructure including the catering industry. As a result, functioning of the higher education institutions in a strict sanitary regime, including online teaching, affects the functioning of entire cities and academic centres. Online teaching also has consequences for graduates because the new form of teaching impacts their competences, qualifications, and preparedness for the needs of the labour market. The accelerated pace at which students acquire digital competences, learn to use multiple sources of information, adapt to electronic (remote) forms of work, gain skills in organising their time are certainly the benefits of the situation that will improve their situation in the labour market. On the other hand, it is expected that their skills in effective direct communication, group work and cooperation in a diverse environment will be poorer. Closing down higher education institutions also resulted in digital exclusion caused by a number of different factors. It is estimated that several per cent of students were unable to participate in classes for various reasons, and some (although very few) academic teachers were also excluded.

An interview with the dean of the Faculty of Business and International Relations at the Vistula University, which has offered a number of online programmes for over 6 years, provides an interesting view on the shift to remote forms of teaching (ibid. "Studying online – access to education has never been so easy" [„Studia online – dostęp do edukacji nigdy wcześniej nie był tak łatwy"]) and offers an interesting view on the changing forms of teaching. Higher education institutions witness continuous and growing interest in online programmes, especially among young people who work hard, travel, have small children or live far

from academic centres. During the pandemic the biggest benefit of online classes is safety. In the interview the dean also said that studying online offers unprecedented access to knowledge. It offers studying "unrestricted by geographical conditions", as students can learn from and work with teachers to whom they did not have access before because of the physical distance.

Another report on online teaching and the impact of the COVID-19 pandemic on the higher education system was published in 2021 by the University of Warsaw Incubator (Mazur 2021). The report was created using the *desk research* method and it provides a number of references to research projects, reports and analyses developed by HEIs and other institutions. These include citations from the International Association of Universities 2020, National Forum for the Enhancement of Teaching and Learning in Higher Education 2020, and the publications include the Report by the Polish Bank Association: "Student's Wallet 2020", Independent Students' Association Report 2020, research conducted at the University of Zadar – BFUG 2020, initial report from the study conducted under the direction of Małgorzata Dragan PhD of the Faculty of Psychology at University of Warsaw – "Psychological health during the Covid-19 pandemic, 2020. The author of the report states (on p. 12) that "although the situation in which online teaching became the dominant or the only available form of teaching has lasted for several months, there is very little data and study results that provide an in-depth look at the effects of using this method. Conducting reliable analyses is a time-consuming process and the dynamics of ongoing changes should make us refrain from drawing hasty conclusions. Therefore, the discussion below is based on a careful approach to the information available and preliminary research results". We agree with the opinion that the results and data originating from various analyses and presented in the report are the result of initial observations of the situation, which is caused mostly by very limited experience. However, it is worth noting a few of the conclusions. The characteristics of each higher education institution, their autonomy and the different needs of various disciplines make it difficult to discuss general trends in the switch of the higher education system to online teaching. For example, the results presented in the report of the Polish Bank Association regarding the impact of the pandemic on the financial situation of students (published in October 2020) indicate that the financial situation of 53% of respondents has deteriorated in the preceding three months. In the section of the report devoted to students' preferences regarding online lectures during the pandemic, 57.43% of respondents declared their preference for synchronous teaching. This result was obtained in a survey conducted by the University of Zadar, in which 9000 students from different European countries participated (BFUG 2020). An identical answer was selected most often when asked about seminars, practical exercises and consultations. Similarly, the majority of students of the Faculty of Artes Liberales at the University of Warsaw (66.7%) said that synchronous online meetings are the best way to conduct classes online. The results published by the Bologna Follow-Up Group indicate that the workload related to studying is greater than it was when classes were conducted in campuses in the case of over 50% of respondents (BFUG 2020).

When 5000 students from the University of Bonn (2020) answered an identical question, 66% of them agreed that their workload has increased. The report in question also discusses the impact of the pandemic on other aspects of students' lives. To this end it uses the results of a study conducted in spring 2020 by professor Zbigniew Izdebski (University of Warsaw 2020) which demonstrated that as many as 44% of respondents in the age group 18–29 said that they experience more melancholy and depressive states than before and 41% said that they experience more loneliness than before. The report also presents the issues facing academic teachers, e.g. 39% of academic teachers experienced problems when conducting classes. Another obstacle was the discrepancy between the recommendations to reduce the workload of students related to their own work and the need to complete the material prescribed in curricula. The final section of the report contains a number of important conclusions drawn by the author, e.g. that the pandemic highlighted the existing backlog and all the shortcomings present in the area of digitalisation of higher education institutions as well as the lack of soft competences and relation-building skills. At the same time, it turned out that it is possible to quickly and effectively reorganise life at higher education institutions. The author also states that further reflection is needed on the role of the higher education system in the period of digital transformation and in the light of global e-learning trends. Platforms containing learning materials presented in an attractive and friendly form (such as Coursera or Edx.org) are becoming easily available and may become competitors of programmes organised by higher education institutions. Additionally, it is expected that it may soon become easier to graduate from foreign HEIs without leaving one's home and this has to be taken into consideration when creating development strategies for online teaching. The development of tools and processes related to digitalisation and individualisation of teaching and developments in the personalisation of knowledge acquisition are fairly quick. On the other hand, the results of the studies cited indicate that in the time of limited interpersonal contacts, classes that still provide the ability to meet in a group of people (albeit online), are a form of remote teaching that is appreciated by the students. Even though the importance of new technologies in teaching will continue to grow, it does not seem that teaching will become a fully automated process.

In December 2020 the Brightspot's Student Experience Snapshot was published. This report contains the results of a country-wide survey on the experiences of students in the 2020 autumn semester and asking how they compare to that of the previous winter semester (i.e. the period when online teaching was introduced at HEIs because of the COVID-19 pandemic) ("The Impact of COVID-19 on the University Student Experience", 2021). There were 400 respondents – students of B.A. programmes in the United States. Additionally, information was collected on how higher education institutions adapted to the COVID-19 situation, what procedures and strategies they introduced as well as information on dormitories and the teaching environment. The results were as follows: in the 2020 autumn semester 85% of respondents (students) attended at least half of their classes online, half of the students studied mostly or fully online, one third

studied in the blended model, while 16% had face-to-face classes and lectures. When it comes to accommodation, 45% of students lived at home, while the rest, 55%, lived on campus or in rented apartments. The survey also covered the general satisfaction of students with their programmes. In autumn 2020 the number of satisfied students was 27% lower than in the spring of the same year. The two most common reasons for this decrease in satisfaction were the lack of personal contacts during classes and lectures and the lack of time spent with friends. On average, the scores reflecting the students' academic growth, personal growth and social experiences decreased by 14–21% when comparing the 2020 spring semester and the 2020 autumn semester. The results of the survey also demonstrated that the switch to online classes made it more difficult for students to socialise and connect with other persons with similar views. Students expressed interest in the HEIs creating "safe zones" in which they would be able meet in their free time. The few students who had access to organised safe spaces outside their homes and their campus considered their performance above average. The same students assigned the highest scores among all students surveyed to the ability of their HEI to make them feel part of the academic community. A conclusion may be drawn from the survey conducted that the largest higher education institutions should care about all aspects of student life: those that are related to classes and lectures as well as those related to life on campus and the student's free time. The results of the survey presented in the report apply mostly to issues related to the reactions of higher education institutions to the pandemic, their functioning in the new conditions and how the new initiatives and actions undertaken by HEIs affect the satisfaction of students (expressed through their self-assessments). Therefore, these results indicate the aspects on which higher education institutions should focus during the pandemic (and beyond).

Another interesting report on the functioning of higher education institutions during the pandemic is "Psychological health at Polish higher education institutions" ("Zdrowie psychiczne na polskich uczelniach" 2020) published by the Polish Patients Ombudsman, which identifies the most common problems in psychological wellbeing of students and HEI employees. The report was created based on survey responses sent to the Ombudsman by 40 higher education institutions between May and October 2020. The collected information indicates that psychological problems are increasingly common among the academic community and that they are caused by high pace of living and stress. According to HEIs' responses, the most prevalent problems include: low self-esteem, stress, suicidal thoughts, anxiety disorders, depressive states, neuroses, adaptation problems and personality disorders. Other problems include: crises in relations with colleagues, in relationships and in family life; loneliness; difficulties in communicating with peers; family issues; reliving problems experienced by others as well as lack of empathy and discrimination against people with disabilities. Also mentioned were eating disorders, overweight, obesity and the complexes they bring. Members of the academic community also struggle with addictions (to alcohol, cigarettes, narcotics, gambling, sex, Internet). Additionally, they experience exhaustion, lack of concentration, lack of perspectives and opportunities

for development. The emergence of new problems that the academic community had to face because of the pandemic resulted in creating programs at higher education institutions providing support to those who need it. HEIs organised pandemic support hotlines and on-line consultations with experts, as well as qualified HEI employees and 4th and 5th year students of psychology and psychiatry programmes.

Another specialist report is "Internationalisation during the pandemic. Influence of COVID-19 on foreign students in Poland and the admission process in the 2020/21 academic year" („Internacjonalizacja w czasach pandemii. Wpływ COVID-19 na studentów zagranicznych w Polsce i rekrutację na studia w roku akademickim 2020/21") prepared as part of the "Study in Poland" programme ran by the Conference of Rectors of Academic Schools in Poland and the "Perspektywy" Educational Foundation. The report presents the situation of foreign students in Poland after two months of the pandemic and identifies the problems related to admission of foreign students for the 2020/21 academic year. The publication is a very detailed analysis of survey responses sent by 45 higher education institutions. The survey provided answers to many questions related to internationalisation of HEIs, e.g. how many foreign students remained in Poland, how many have left, do they suspend their participation in programmes or do they abandon them, are they able to participate in classes and lectures, how they see their future at Polish HEIs, etc. In the results analysis the reports by international organisations such as the European University Association (EUA), European Association of International Education (EAIE) and Institute of International Education (IIE) are also referred to. The report indicates that between 5% and 50% of foreign students from each of the HEIs studied returned to their home countries. However, according to the higher education institutions, the majority of these students do not want to abandon their programmes and declare that they will return when the restrictions are lifted. The survey showed that higher education institutions consider themselves well prepared for conducting online classes regardless of the teaching language (1/3 of them). The main problems reported by HEIs are related to technical issues (lack of computer equipment, unsatisfactory quality of Internet connections, necessary technical solutions not implemented) and to teaching (inability to verify the engagement of students in online classes, unwillingness of students to learn on their own). The report's general message is to treat the pandemic crisis as an opportunity to rapidly improve the quality of teaching by introducing new techniques and methods. The authors emphasize the fact that changes caused by the pandemic can be an impulse for higher education institutions to modernize and the results of this modernisation will also be felt after the return to "normal". Already many are saying that there is no return to the fully traditional model of teaching face-to-face on campus because innovations such as virtual classrooms, online discussions, and presentations available as VOD are simply better and more attractive than reading scripts and spending time in lecture halls.

In 2020 the Marek Dietrich Institute of Contemporary Civilization Problems published a bulletin containing collection of essays[4] discussing a broad spectrum of problems as well as presenting topics for further discussion and reflection related to teaching at higher education institutions during the pandemic. In an approach characteristic of humanists – scholars of cultures past, Krystyna Bartol, author of the essay "Nihil novi sub sole? Old questions. What are the answers?" ("Nihil novi sub sole? Stare pytania. Jakie odpowiedzi?") suggests looking at the challenges related to e-learning through the prism of dilemmas faced by contemporaries of Plato and Socrates. The author compares contemporary adoption of new forms of online teaching to the civilizational transformations of ancient times. At that time a conflict raged between two models of knowledge transmission, which were at first considered mutually exclusive and hostile towards each other. The first model was the oral transmission of knowledge, the second was the increasingly popular written transmission model that allowed the reader to come into contact with the thoughts of other people remotely, without the need of meeting them in person. The author believes that similarly to ancient methods which began to coexist and supplement each other, modern methods of online teaching will be used alongside traditional forms of teaching which will not disappear, as they have a number of advantages important for the teaching process. The arguments in favour of this scenario for future changes are as follows: conducting classes in a form of a video-conference is only a substitute of actual intellectual interactions and the goals of teaching can only be fully reached by following the Socratic principles of working together in a lively, improvised discussion between a master and a student, freely joining discussions, and the mutual influencing of personalities which is impossible in remote contacts. According to the author, being present at the same location, spontaneous, often unpredictable situations affected by specific locations, items, sights as well as observations of non-verbal cues in mutual contact are indispensable components of building intellectual creativity. The author's general conclusion is that in the case of teaching and higher education, remote techniques will only be a supplementary didactic form that cannot replace real classes and lectures held within HEI buildings.

Jan Łaszczyk the author of "Remote education – a chance or a necessity" ("Edukacja zdalna – szansa czy konieczność"), another essay from the same collection, also discusses the transition to remote teaching while focusing on the humanistic aspect of educational goals. The author notices that online education fits well in the pragmatic and or even utilitarian tendencies. Courses offered on educational platforms are built following certain principles, e.g. they precisely define their teaching goals in behavioural categories, i.e. by specifying the desired behaviours of the learner and selecting the knowledge being conveyed so that it is adequate to external needs and omitting information that are not important for the functioning of the learner in the predicted situations. The author acknowledges the tendencies that limit the function of education to pursuing the goals of

[4] http://www.ipwc.pw.edu.pl/pliki/Nauczanie-po-pandemii-2020.pdf

practical preparation of individuals to the needs of the labour market and juxtaposes them with the concepts developed in Polish pedagogy. According to these principles, education cannot abandon its duty of forming the ability to perceive the world in students, teaching them to make their own judgements regarding events in society and related to other people, developing a harmonious individuality and the orientation for growth. The author is fairly critical of the new trends in education which are based on the assumption that the social usefulness of a person is based on their practiced, relatively narrow, repertoire of behaviours.

In the essay "Heritage to last forever – answers from antiquity to old and new questions" ("Dorobek na zawsze – antyczna odpowiedź na stare i nowe pytania") Marciniak discusses the situation in the Polish education system in correspondence to the spirit of antiquity and with numerous references to literature and heroes of ancient Greece and Rome, using them to enumerate the advantages and disadvantages of applying IT tools in teaching. The project "Our Mythical Childhood" implemented at the Faculty of Artes Liberales at the University of Warsaw is presented as an example of innovative didactic forms and its author (at the same time the author of the essay) discusses in detail the didactic activities as well as interdisciplinary and blended teaching.

In the essay "Education in light of the pandemic" ("Edukacja w świetle pandemii") Wojciech Cellary describes remote teaching during the COVID-19 pandemic as an experiment conducted on a great social scale, i.e. affecting all groups of learners. The author notices a number of great educational challenges to which online teaching can be a solution. These include life-long learning and opposing digital exclusion of large number of society members, especially pensioners. The author highlights the importance of digital competences in graduates as the labour market in the era of electronic economy based on knowledge requires them to be independent, capable of cooperation, to constantly update their knowledge and remain innovative and creative. These qualities can be best developed in students by assigning projects and group assignments, which are actually the methods used most frequently in remote teaching. In this context, experiences acquired through online teaching during the pandemic have a positive influence on the future professional life of graduates.

A number of questions regarding the nature and capabilities of online teaching and an attempt to interpret and answer these questions can be found in the article "Remote higher education: still looking for new answers to old questions" ("Kształcenie wyższe na odległość: jednak poszukiwanie nowych odpowiedzi na stare pytania") by Gruszczyńska. The author focuses on the problems of quality and availability of education provided online during the pandemic. One of the first problems discussed is the rapid conversion to remote teaching, without any methodological and technological preparations. Because of this, it may be perceived as "emergency online teaching" and as a result, it is commonly believed that teaching quality in remote teaching is inferior. However, the author claims that the skills of the teacher are actually the fundamental factor which influences the quality of education and the achievements of students. We should not let ourselves be fooled by record-breaking attendance during online lectures. Students,

hidden behind their cameras, become viewers rather than active participants and it is a challenge for the teacher to keep them focused. The situation is even more complex when it comes to classes and practical exercises, as it is hard to replace experimentation and *in vivo* learning. The author also highlights the difference between e-learning being used as a methodologically justified element of the curriculum and the current, emergency application of online teaching. In the case of the latter it is the resources available to HEIs and students that affect the quality of education. Additionally, the author notes that in the current situation the quality of online teaching is the result of an enormous struggle, engagement and flexibility of teachers and students facing the lack of any alternatives. In this context another problem becomes visible: the so called *Zoom burnout*, i.e. a specific type of fatigue experienced by academic teachers for whom conducting online classes is a greater load not only because of the increased number of hours spent sitting in front of a computer but also because of the increased need for self-control that stems from continuous exposure and the losing a clear division into work and personal life. Another problem mentioned in the article is cybersecurity and the issues of protecting the teachers' image and the protection of personal data collected by higher education institutions. New problems also include the reliability of methods used in the verification of teaching results, e.g. online examinations and the search for effective tools protecting against cheating. The author also discusses new opportunities provided by online teaching in higher education, especially the availability of programmes in which one can potentially participate from anywhere in the world without incurring the added costs of living. On a local scale, online teaching allows to save time and money usually spent on commuting, which is particularly beneficial for participants of extramural programmes as well as those who have to face different kinds of health or family related limitations. Additionally, e-learning gives the flexibility to adapt the learning process to the students' daily rhythm and weekly schedule. However, in the conclusions the author states that the availability of online teaching with its potential equalitarianism does not mean that everyone will be able to benefit from it in the same way because it is a tool that has a preference for persons with greater individual and social resources.

Several important issues have been raised in the essay "Remote teaching – a blend not a single malt" ("Zdalne nauczanie – blended nie single malt") by Jemielniak. Although, the author examines issues that have already been discovered and discussed, e.g. the benefits of online teaching related to commuting that results in reducing the costs of studying at a higher education institution but, as the author points out, the savings only apply to students, not to the HEIs, other important issues are discussed. One of them is the social context of education. It requires trust that is very hard to build during online classes. Higher education is much more than conveying knowledge – it also involves networking and interpersonal relations and you cannot have these when using only remote forms of contact. The author also highlights the importance of tools supporting the teaching process, however in his opinion the future of technology in education lies in the blended learning approach.

Questions related to the quality of online education during the pandemic were presented in detail in the article "On the quality of teaching during the times of Coivid-19: old answers to new questions" ("O jakości kształcenia w czasach Covid-19: stare odpowiedzi na nowe pytania") by Kraśniewski. The basis for the author's deliberations is the notion that remote teaching in higher education is nothing new but during the pandemic this method was used on and unprecedented scale. From the point of view of education quality the most important issue is to batter plan the online teaching process, not simply "move" various forms of traditional lectures and classes to cyberspace in an emergency (in the process called emergency online learning). The author suggests that in the discussion about the new teaching model at higher education level too much emphasis is put on the tools (which is explained to a certain degree by current needs) and too little emphasis is put on the proper conceptual organisation of classes and using the appropriate methods. Additionally, the author lists several problems that present themselves following the switch to online teaching, already discussed in other publications including: the difficulty in conducting practical exercises online, problems with verification of teaching results, difficulties faced by teachers and students in adapting to the new situation which stem mostly from insufficient technical competences. Also mentioned are the results of a survey conducted among students of the Warsaw University of Technology in May 2020. They indicate that 59% of respondents did not experience any technical problems and only 39% said that they definitely preferred traditional classes and lectures at their institution. The article also lists some positive aspects of the current exceptional situation (these include time saved on commuting, rapid development of digital competences in employees and students) which are consistent with the observations of other authors. The author concludes the essay with the remark that it would be good to continue the transformation of the teaching model and reshape the emergency online solutions into high quality blended learning approach.

It is also worth noting one of the problems of online education discussed in the essay by Olenderek. According to the author, the technical aspects of teaching are not the most important. Instead we should develop methods for eliciting knowledge and skills and focus on the ethics of students (e.g. cheating, only attending to have the "student status" or "passing and forgetting"). The author also highlights the fact that the application of communication technologies depends on the scientific discipline and specific programme, e.g. in geodesy, cartography and spatial planning it is already possible to use resources available online (e.g. geoportal), which not only makes the education process more rich, but is now a necessity.

Piwowarska, in her essay "Teaching after the pandemic: an opportunity to introduce important changes in academic teaching" ("Nauczanie po pandemii: szansa na wprowadzenie ważnych zmian w dydaktyce akademickiej"), describes the events occurring at higher education institutions over the past few months as an opportunity to introduce technological and ideological changes as the commonly used didactic methods are increasingly unsuitable to address the needs of learners. Current students are members of generations who are at home in the

Internet (generation Z and generation C). They use IT tools with ease and they see the Internet as the main source of knowledge. The most important thing for modern students is quick and flexible access to large quantities of necessary information, at the same time they expect high quality teaching materials. They begin to view the traditional way of studying as "archaic". When it comes to academic teachers, the author suggests that their approach to online teaching is different and she refers to the studies conducted in May and June 2020 at the Warsaw University of Technology which demonstrated that teachers experience technical difficulties related to online classes more often than students. However, the scale of mobilisation among teachers was great and only about 10% of them (according to the studies mentioned above) did not start teaching in the new formula. The author also highlights that online teaching will not replace traditional teaching completely and, similarly to other authors, she suggests that blended learning is the best approach, while other effective techniques include e.g. flipped classroom. Among the many shortcomings of teaching using modern IT tools there is the problem of lack of integrated technical solutions and systems at higher education institutions as well as the abundance of online teaching platforms offered by different suppliers, which results in problems with copyright and personal data protection.

Among the essays published in the Marek Dietrich Institute of Contemporary Civilization Problems bulletin (issue LXXII) there is also an article presenting the students' opinion on the changes in the forms of teaching during the pandemic (Leżański and Sobolewska 2020). The authors (students, representatives of the Students' Parliament of the Republic of Poland) discuss the issue of quality of knowledge, skills and competences they will acquire during online classes because not all teaching goals can be achieved in this new formula. They also point out the difficulties in conducting classes and laboratory exercises online and the fact that not all students have access to high quality computer equipment that can run specialist software. This last issue is highlighted as a problem that may result in exclusion of students without the required resources from participating in classes. Another problem discussed by students is their lower and ever decreasing interest in research and the restrictions in travel– it is more difficult to meet with people and the majority of conferences were simply cancelled. The students also listed advantages of remote teaching, i.e. the ability to participate in classes wherever they are, potentially limiting costs, while the disadvantages include difficulties in acquiring social skills that will be useful in the labour market.

3. Social attitudes of students towards changes in the operation of higher education institutions and teaching practices during the pandemic

In the first part of the study, we present an analysis of survey results obtained from students, in the order of the questions formulated, grouped into several thematic modules (according to the titles of the following subsections). We present aggregated responses regarding the entire population surveyed, which is mainly due to small differences between individual categories of students, i.e. depending on the ownership type of a given higher education institution (public and private), although in some cases we also try to highlight such differentiation of statements. On the other hand, spatial differentiation turned out to be a relatively insignificant feature when it comes to response diversification, mainly due to the fact that: most of the institutions included in the study are located in Poznań, i.e. 10 (out of 15); most of the respondents study in Poznań, i.e. 69.2% (and 55% of the academic teachers).

3.1. Online education and traditional classes

An important issue worth addressing after the first months of remote learning is the question of student acceptance for the new forms of classes, i.e. using distance learning methods and techniques. In the student sample analysed, more than one third, i.e. 35.7%, expressed an opinion in favour and preference of online classes over traditional forms of studying, with 16.5% clearly preferring this form of classes. The remaining students in this group (i.e. 19.2%) also accepted it, although slightly less strongly ("rather yes" response – see Fig. 4. However, the majority of students (51.4%), expressed the opposite opinion, i.e. they preferred traditional forms of classes to remote ones. These respondents also included a subgroup of strong supporters of traditional education (27.8%) and a subgroup of those less determined, but also preferring traditional forms (23.6%). Gender-wise, there are more men than women (by 7.1%) who prefer traditional classes to remote ones. There is also a certain group of students, relatively the smallest, i.e. 12.9%, who find it difficult to define their preferences in this regard.

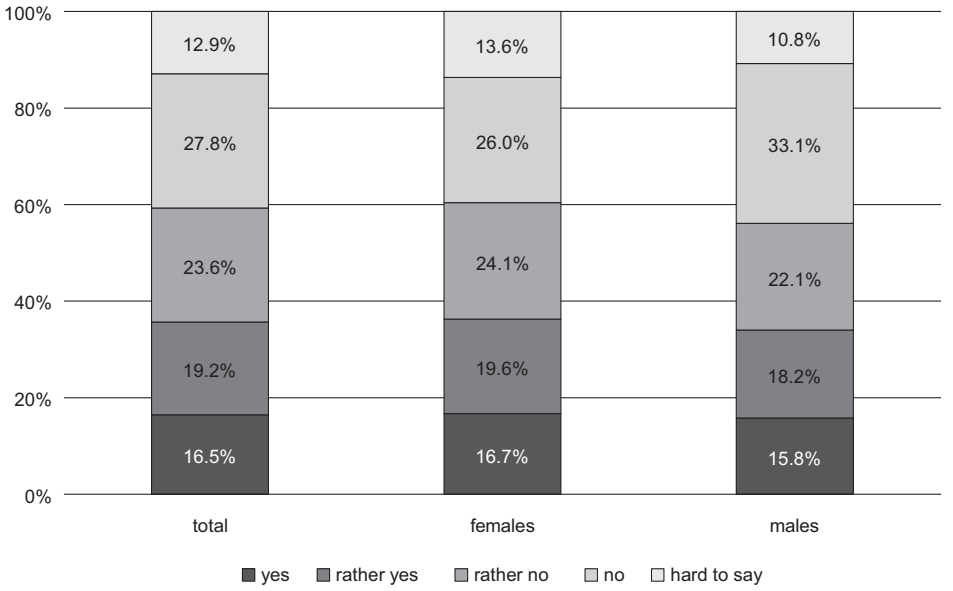

Fig. 4. Breakdown of responses to the question: Do you generally prefer distance learning to traditional classes?
Source: own work based on results of the survey.

Although the group of students who unequivocally prefer traditional forms of teaching is the largest (27.8%), only every ninth of them (11.4%) declared unequivocally that they did not like and did not accept any forms of online education, while the rest accepted some of these forms. Lectures have the highest acceptance for remote delivery – almost 3/4 of students (74.4%, cf. Fig. 5) liked such form of online education. Classes are much less accepted – only 1/3 (33.7%) of students liked them. The respondents were even less fond of remote discussion classes and language courses – only 20.9% (1/5) and 14.9% of students enjoyed them, respectively. The least liked and accepted were remote field classes, as well as workshops

Table 5. What form of distance learning do you like? Multiple answers can be selected. Breakdown of respondents' answers by gender

Type of class	Females	Males
Lectures	75.5%	71.2%
Classes	34.9%	34.0%
Discussion classes	21.7%	18.7%
Language courses	15.0%	14.8%
Workshops	8.5%	8.6%
Laboratory exercises	6.1%	12.2%
Field classes	3.3%	3.1%
I do not accept/like any of them	10.2%	14.4%

Source: own study based on the results of the survey.

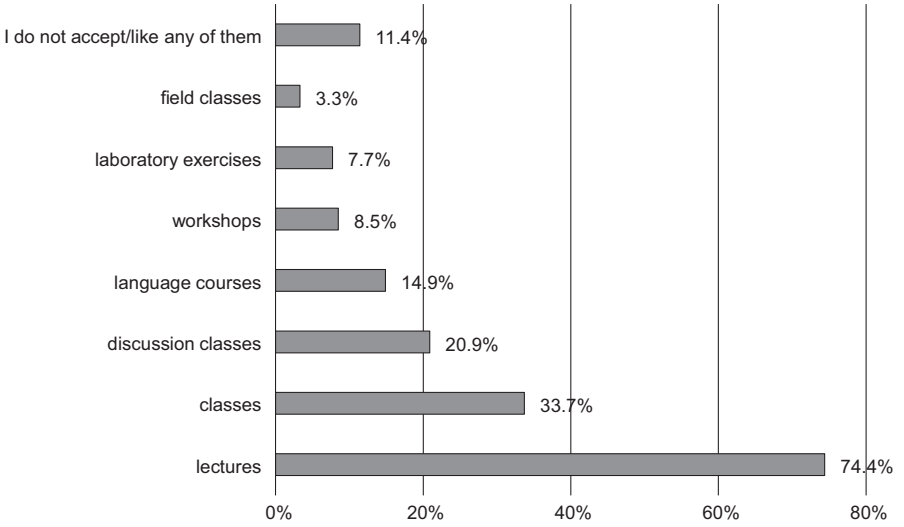

Fig. 5. Breakdown of responses to the question: What form of distance learning do you like? Multiple answers can be selected
Source: own work based on results of the survey.

and laboratory exercises, which are highly practical classes – less than 10% of students accepted them. In general, women's acceptance for most types of activities was higher than men's (except for workshops and laboratory exercises). Detailed responses of respondents by gender are provided in Table 5.

These rather varied attitudes of students and their evaluations of online teaching are also reflected in their opinions on the possibility of continuing online

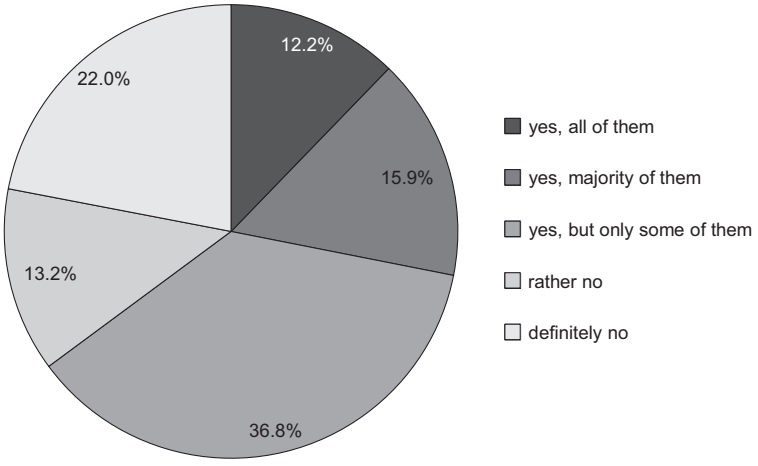

Fig. 6. Breakdown of responses to the question: Would you like to continue taking online classes after the end of the pandemic?
Source: own work based on results of the survey.

learning after the pandemic has ended. There are a little more than 1/5 (22.0%) of determined opponents of the continuation, and even a smaller group of its firm supporters, only 12.2% (i.e. every eighth student, cf. Fig. 6). Others expressed less decisive opinions, and the largest group (36.8%) was in favour of conducting only some of the classes remotely.

Another issue evaluated by the students was the way of delivering online classes, in particular the involvement of academic teachers and their use of various possibilities of connecting to the Internet by referring to examples and electronic sources. Almost half of the students surveyed, i.e. 44.5% (see Fig. 7) noticed that teachers conducted online classes better than offline ones, i.e. in classrooms. However, only a relatively small subgroup (5.6%) expressed such an opinion with regard to nearly all the teachers. The other respondents noticed the difference with regard to many of the teachers or only some of them. On the other hand, 37.1% of the respondents did not notice any greater involvement of teachers in online classes as compared to offline education, which may indicate that teachers were able to meet the new requirements of distance learning without any major problems and without compromising the quality of their classes. In addition, it should be noted that for a relatively large group of respondents (18.4%) it was difficult to determine the differences in the quality of the classes conducted, which may result e.g. from the lack of comparison – it should be noted that in October 2020 newly recruited students might not have had the opportunity to participate in offline classes.

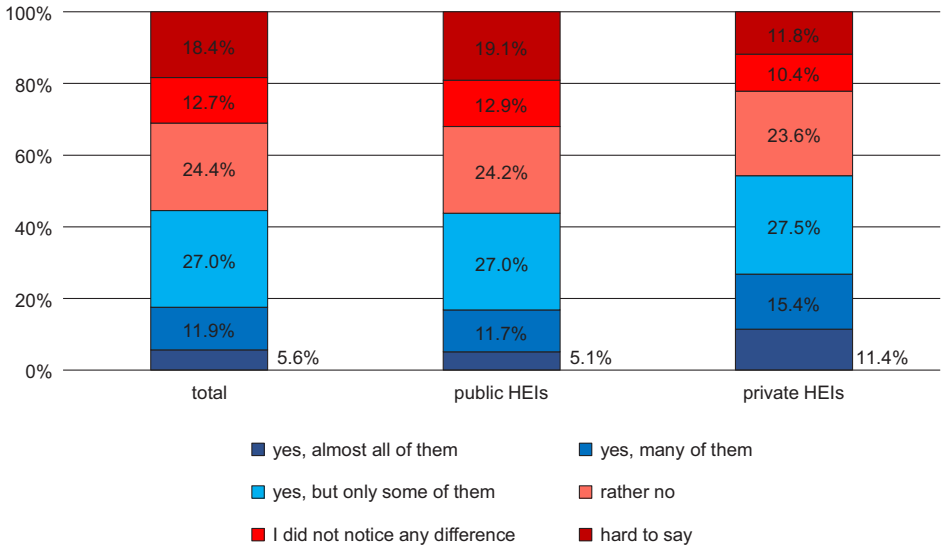

Fig. 7. Breakdown of responses to the question: Do you think teachers conduct online classes better (e.g. they are more engaged, use more examples, links to electronic sources) than offline classes?

Source: own work based on results of the survey.

Students at private HEIs more often believed that teachers were better at conducting online classes. This was the opinion of 54.3% of those studying at these establishments as compared to 43.8% studying at state-owned establishments.

Apart from the quality of the classes, another interesting issue is the change of students' own workload following the introduction of online classes. Approximately 30% of the respondents confirmed such a relationship, i.e. noticed a greater number of assigned tasks for individual or group implementation, and another 34.6% also confirmed this increased association, although not as a permanent rule, but rather one that is applicable in some cases (cf. Fig. 8) A group of similar size, but still the largest, i.e. 35.1%, did not notice an increase in requirements towards students or an increased number of assigned tasks. Thus, it can be concluded that for most students the shift towards online education does result in increased demands regarding their own work, at least to some extent, which corroborates the established and quite common patterns associated with online education, existing already in the earlier, pre-pandemic period.

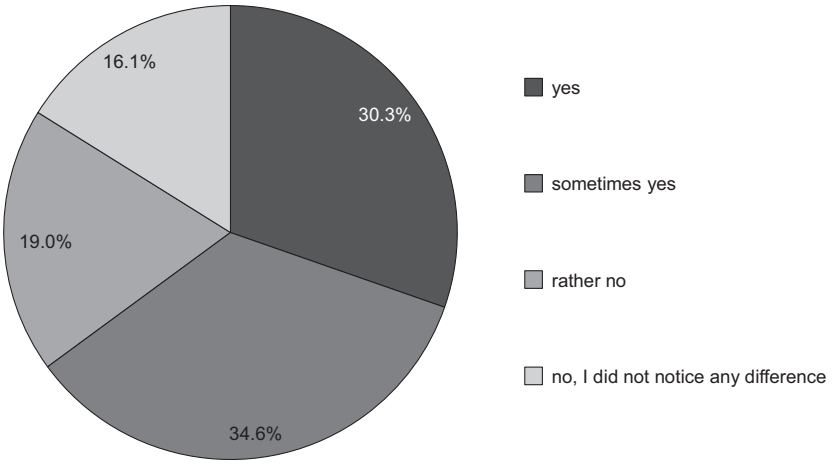

Fig. 8. Breakdown of responses to the question: Do online classes result in a greater number of assigned individual or group work tasks?
Source: own work based on results of the survey.

3.2. Participation in online education

Online classes certainly require a different way of organizing time on the part of the student, as well as different preparation in numerous aspects. When analysing the attitudes of students towards online education in the behavioural dimension, we took into account their persistence in participating in online classes, which create many opportunities for different behaviours, completely different from those that are natural and obligatory when students are in classrooms. First, we analysed how long they were able to participate in remote classes. It turned

out that the largest group, 42.9% of the students surveyed (see Fig. 9), managed to sit all the planned classes in front of the computer. Among these students, 18.7% said it was not an exceptional effort ("no problem" answers), and the remaining 24.2% stated it was "rather" not a problem, which means that to a great extent they also participated in all the planned classes. Gender-wise, men (46.9% of them answered "yes" and "rather yes") are characterized by greater endurance in participation in online classes than women (40.7%).

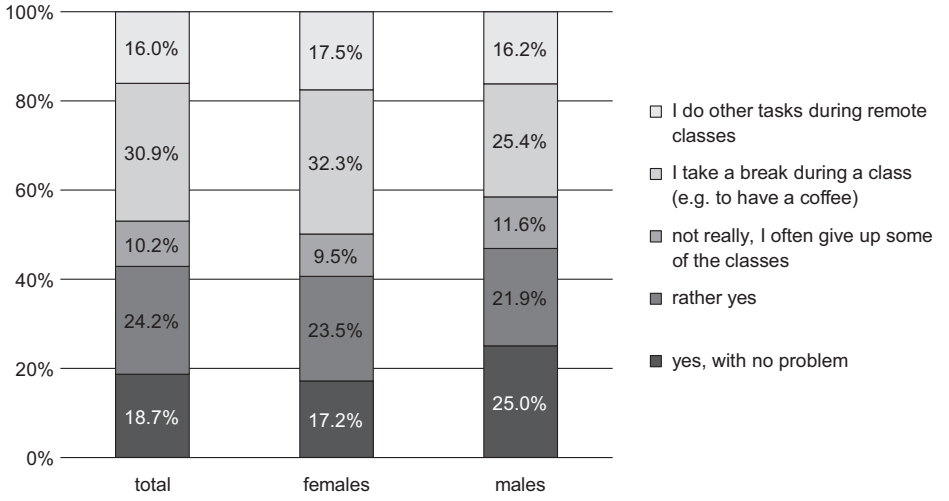

Fig. 9. Breakdown of responses to the question: Are you able to endure all the scheduled classes in front of the computer?
Source: own work based on results of the survey.

The second largest group of students (30.9%) declared that they took a break during a class (e.g. to have a coffee), which in turn means that they did leave their workstation and moved to other places (e.g. to the kitchen), and thus lost concentration and focus when it comes to the reception of the content conveyed. The research also shows that 16% of the students performed other activities and tasks during remote classes, which is not typical of traditional classes in classrooms, and therefore their focus on the content was only partial. On the other hand, every tenth student (10.2%) admitted that participation in classes in a remote form was an effort that they could not bear, and they often gave up these classes. Thus, the obtained results indicate that at least a quarter of the students found it difficult to maintain attention and focus during online education.

The students' workload during online classes is not small. More than half of the respondents declared that during the day they completed even 4–5 class "units", which means from 6 to 7.5 clock hours spent in front of computer screens (see Fig. 10). Moreover, a large group of the students, almost 1/3 of them (32.4%), indicated that they participated in a maximum of over 5 online class units, and therefore more than 7.5 hours, which should be considered a high threshold of persistence and fitness endurance. On the other hand, there was also

a small group of students (0.7%) who declared that they spent a maximum of 1 hour per day on remote activities. This indicates that they considerably filtered their classes, as well as used ample alternative opportunities to complete assignments during their courses.

The possibility of using a camera to show one's own image or to hide it under an icon with initials or a photo gives students a lot of behavioural freedom during online classes. It is a complete novelty in the process of conducting classes for both students and teachers. At the same time, each of these stakeholders perceives these possibilities differently: students see it mostly as a great privilege, and for teachers it is mostly a nuisance of speaking to a blank computer screen. Only a small group of the students surveyed (0.9%, see Fig. 11) declared

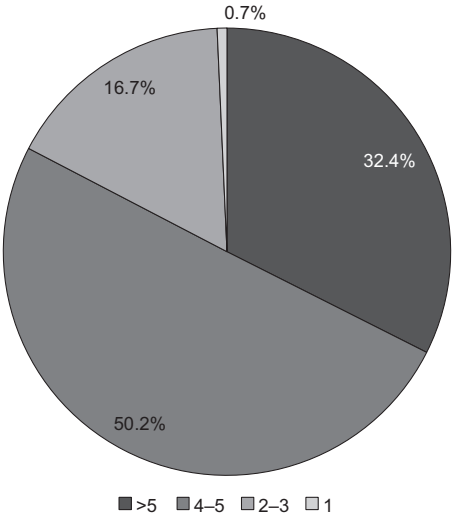

Fig. 10. Breakdown of responses to the question: What was the maximum number of online classes (i.e. counting 1.5 hours per class) you took in front of the computer during a day?
Source: own work based on results of the survey.

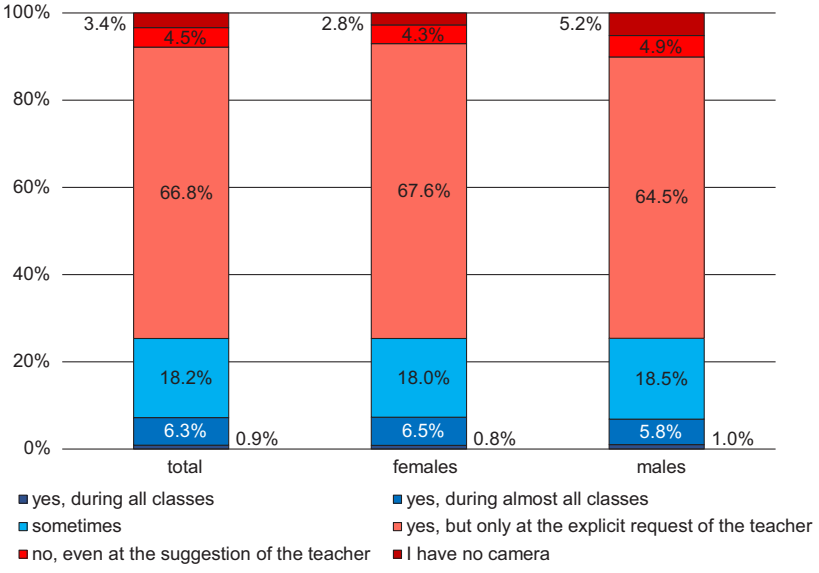

Fig. 11. Breakdown of responses to the question: Do you have your camera turned on during online classes?
Source: own work based on results of the survey.

that they had cameras turned on during all classes, and another 6.3% declared that they had cameras on during almost all classes. In turn, the largest group of students – 2/3 of them, turned the cameras on only at the explicit request of the teacher. But there was also a group of students, a relatively small one (4.5% of respondents), who did not turn on the cameras even at the suggestion of the teacher. Furthermore, it turned out that over 3% of students had no camera at all. There were no significant differences between the answers of female and male students.

Although only slightly more than 7% of the students declared that they always or almost always had cameras turned on during classes, a much greater number of them (21.9%, see Fig. 12) saw such a need and considered turned-on cameras to be a good solution for online classes. On the other hand, nearly half of the students, i.e. 48.5% (see Fig. 12), saw no need of turning on the cameras during classes, and for another nearly 30% of students it did not matter. Such attitudes in the behavioural aspect (i.e. breaking eye contact) indicate the weakening of the relationship between the student-recipient of knowledge and the teacher, i.e. the weakening of the traditional "master-disciple" relationship, very often invoked in relation to the most effective study conditions. They also show that the majority of the students engage in a kind of "clientelism" and do not really care about building relationships either with their teachers (they are anonymous, not known by sight) or with the HEI, but are only interested in completing successive stages of education.

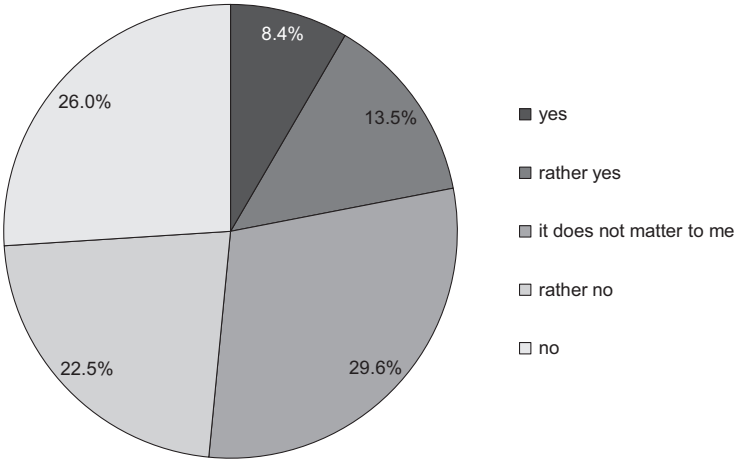

Fig. 12. Breakdown of responses to the question: In your opinion, would it be better if everyone had cameras turned on and could see one other during online classes?
Source: own work based on results of the survey.

Active participation in class was also an important aspect of the analysis of the behavioural aspects of students' attitudes towards online education. Only slightly more than a quarter of the respondents (27.6% – see Fig. 13) declared that their activity increased, i.e. they spoke more boldly, engaged in problem solving

or presented their own ideas. Female students were bolder in this respect. A much larger proportion, 37.4% (i.e. every third student), did not associate the increase in their active participation with the options available when taking remote classes. Thus, being hidden behind a camera or taking classes in a friendly home environment did not influence their greater openness and bolder attitudes in formulating their own statements. A comparable group of 35.1% of respondents did not notice any difference in their activity during online classes in relation to their previous experiences.

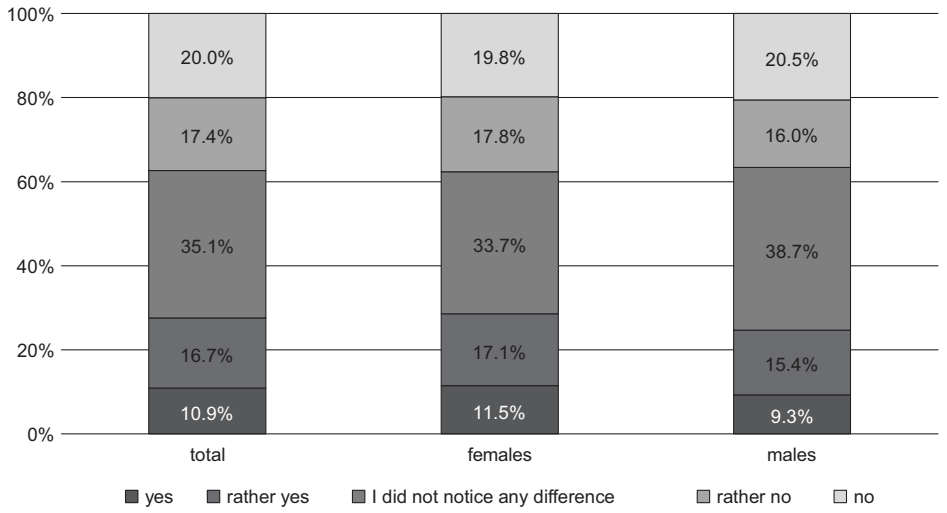

Fig. 13. Breakdown of responses to the question: Are you more likely to be active during online classes, speak up boldly or put forward ideas?
Source: own work based on results of the survey.

3.3. Technical possibilities regarding online education

An important issue in the context of online education is the quality of computer hardware that enables the use of remote platforms. An overwhelming group of respondents – 89.0% (see Fig. 14), believe that they have sufficient hardware to support remote platforms and only 11.0% of them do not have such hardware. The differences in this respect between students of public and private institutions are relatively small. In the case of the former, only 2.6% more respondents gave a positive answer to the question about the appropriate quality of the hardware. In turn, fewer students from private establishments (by 0.9%) clearly admitted that they did not have an appropriate computer to participate in online classes.

Most of the respondents did not have to invest in hardware to participate in online classes – 57.7% of them selected such an answer (see Fig. 15). Others bought hardware, with 22% of respondents declaring that they did not have to buy much equipment, and nearly 20% admitting that they had to buy a lot of

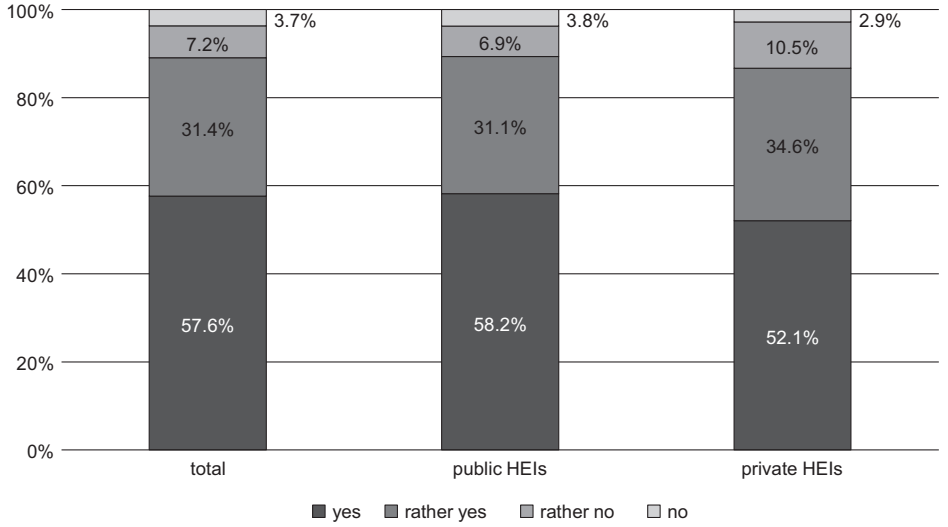

Fig. 14. Breakdown of responses to the question: Do you think you have sufficiently good hardware to participate in online classes?
Source: own work based on results of the survey.

equipment. In the latter group, 9.4%, i.e. every tenth student, revealed that they spent a lot of money on it, because they had to buy almost everything. Thus, after analysing the answers obtained, it turns out that the majority of students are very well-equipped, prepared to participate in online classes with very good

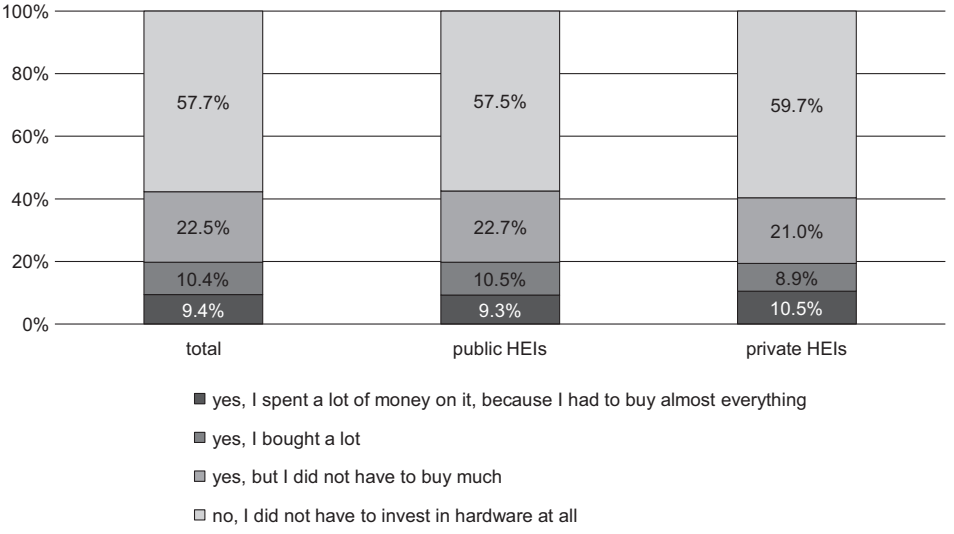

Fig. 15. Breakdown of responses to the question: Did you have to buy additional hardware to be able to participate in online classes without any problems and worries?
Source: own work based on results of the survey.

equipment, which is sufficient to support remote platforms. The differences between students of public and private establishments in this respect are minimal – in the case of the former, slightly fewer of them – by 2.2% – declared that they did not have to invest in hardware at all and also slightly fewer of them – by 0.4% – stated that they had to buy a lot.

More than half of the respondents declared that they did not spend any money on computer hardware (as declared previously) (cf. Fig. 16). The next largest group of respondents (13.3%) spent less than PLN 200.00, and a similar group (12.9%) spent between PLN 2,000.00 and 5,000.00. The smallest group, only 2.5%, spent the highest amount of money, i.e. over PLN 5,000.00. The difference in expenditures between students of public and private establishments turned out to be small – 1.1% more students of private establishments made major investments of over PLN 5,000.00, while 2.5% more students of public establishments made smaller purchases of equipment amounting up to PLN 500.00.

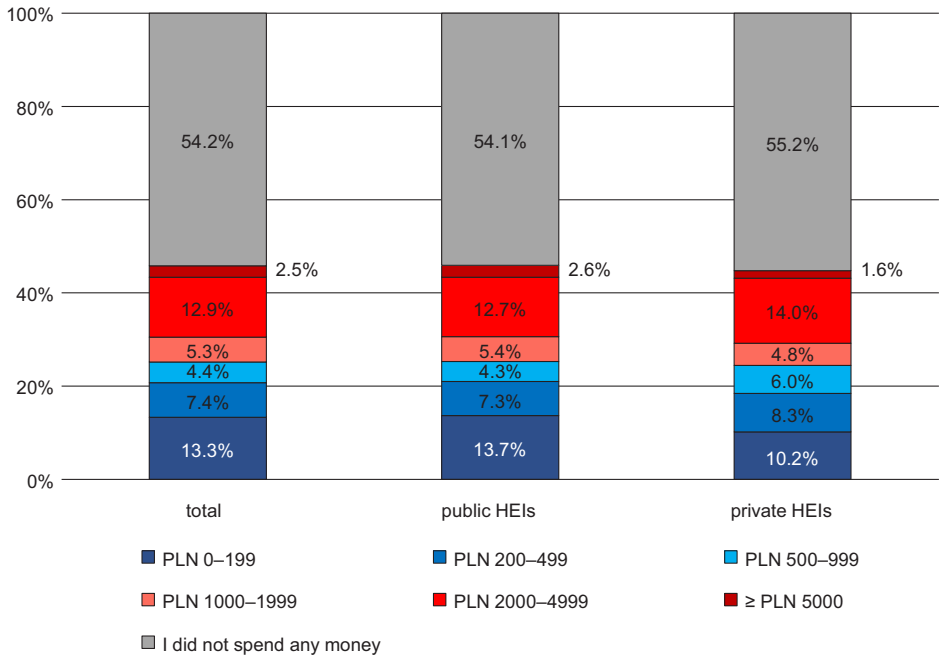

Fig. 16. Breakdown of responses to the question: How much did you spend on buying additional computer hardware? Choose a range
Source: own work based on results of the survey.

Among the hardware purchased, the most common were small accessories (e.g. extension cords, keyboard, mouse), which were bought by almost every fifth respondent (see Fig. 17). Slightly fewer students, i.e. 18.1%, bought laptops, and almost every tenth bought a microphone, and every eleventh – a camera. The fewest respondents, only approx. 1%, bought a desktop computer, and 2% purchased

monitors. Investments were also made in software (5.2%) and computer memory (6.3%). About 6% of the respondents bought additional furniture accessories, such as a computer desk or a chair. Generally, however, the expenses related to a smaller part of the students surveyed, i.e. 44.7%.

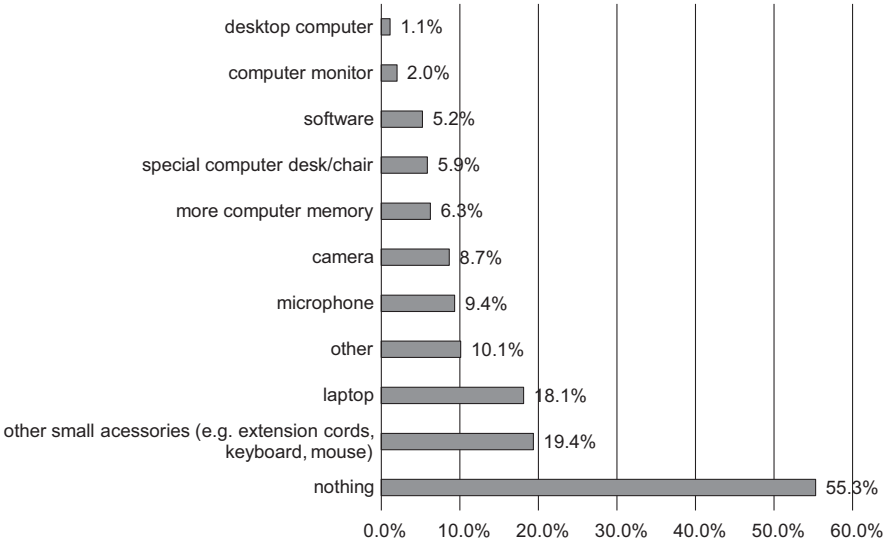

Fig. 17. Breakdown of responses to the question: What did you buy?
Source: own work based on results of the survey.

In addition to the hardware necessary to use remote platforms, the ability to operate them is no less important. While the available platforms are very intuitive in use, in order to take advantage of their various functionalities, it is worth getting to know them in a systematic way. Most of the students surveyed (2/3) declared that they had mastered the system on their own (see Fig. 18), whereas, 16.4% of respondents used peer help in this respect. Trainings offered by HEIs were used by 15.1% of students, including approx. 3.2% of respondents who participated in special courses organized as part of the timetable. The smallest number of students used training materials found on the Internet.

When analysing the activity of students in this area, broken down into public and private HEIs, it should be stated that a slightly larger group of students of non-public HEIs declared that they had mastered e-learning techniques on their own, i.e. 71.4% compared to 66.3% of students at public HEIs (see Table 6). On the other hand, almost three times as many students at public HEIs benefited from training offered by their establishments as compared to students from non-public HEIs.

The student respondents rated their ability to use the MS Teams platform best – as many as 82.8% assessed it as very good or good, and only 6.2% did not use the platform. On the other hand, the Moodle platform was not used by more than a quarter of the students (26.4%), and 48.1% of the respondents assessed their

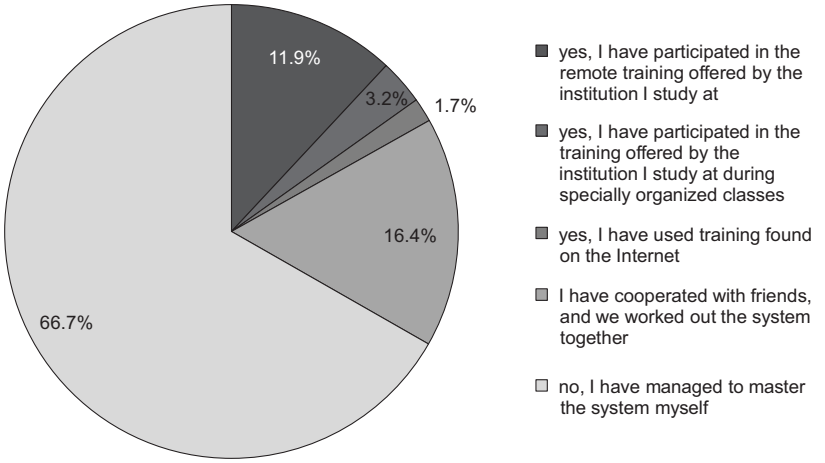

Fig. 18. Breakdown of responses to the question: Have you received any training to better navigate the e-learning platforms?
Source: own work based on results of the survey.

Table 6. Have you received any training to better navigate the e-learning platforms? Breakdown of respondents' answers by type of school

Answer	Public HEIs	Private HEIs
Yes, I have participated in the remote training offered by the institution I study at	12.7%	4.8%
Yes, I have participated in the training offered by the institution I study at during specially organized classes	3.3%	1.9%
Yes, I have used training found on the Internet	1.8%	1.3%
I have cooperated with friends, and we worked out the system together	16.0%	20.6%
No, I have managed to master the system myself	66.3%	71.4%

Source: own study based on the results of the survey.

ability to use it as good and very good. There are also more Moodle users (10.6%) who rated their skills as poor and very poor. The remaining platforms, including Google Meet, were used by even fewer respondents, approx. 1/3 (see Fig. 19). Accordingly, there are fewer respondents who assessed their ability to use these tools as good or very good, i.e. at the level of approx. 20%.

This unambiguous result of the survey, indicating the greatest popularity of the MS Teams platform, stems from the fact that students from Adam Mickiewicz University, Poznań (AMU) are the most numerous among the survey respondents. This is because AMU has made this platform available for online classes as one of the two (together with Moodle) recommended ones. MS Teams is most often used due to, among other things, its compatibility with the USOS system, i.e. an electronic student management information system, which has been used

at AMU for more than ten years. This, in turn, ensures the easiest way to register for classes and have access to didactic materials, correspondence with the teacher, as well as tests, tasks, exams and grades.

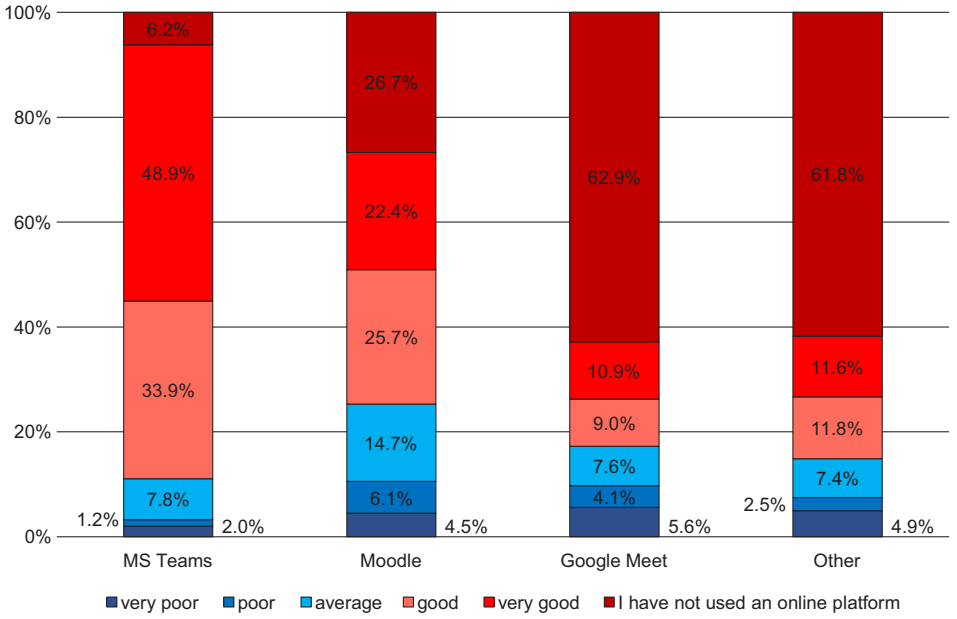

Fig. 19. Breakdown of responses to the question: How would you rate your skills in using various communication platforms, such as MS Teams, Moodle, Google Meet etc.?
Source: own work based on results of the survey.

3.4. Support from higher education institutions in the organization of online education

An important element of effective teaching using distance learning methods and techniques is the institution's support in training students and lecturers in the technical operation of the recommended platforms, as well as support in securing the availability of appropriate computer hardware. Sometimes, psychological support offered by the institution was also needed. As the survey results indicate, students were largely able to master the skill of using these tools on their own or in a peer group, and almost all of them (approx. 89%) had appropriate computer hardware. Furthermore, lower-year students could certainly have a problem with an objective assessment of the situation, as they had not experienced studying in the traditional system.

The implementation of distance learning into academic life was a surprising and a completely new situation for everyone. In the initial stage, HEIs faced great organizational and technical challenges. Procedures and regulations, as well as skills, were lacking. HEIs were trying to develop new rules of their functioning

at a rapid pace, but the variation in this respect was certainly great. Basically, almost 40% (see Fig. 20) of students assessed the HEI's help in organizing distance learning at the beginning of the pandemic as good or very good. One in three students rated such support as average, while the remaining group thought that the HEIs supported their students poorly or very poorly. It is worth noting that at this stage young people certainly needed quick guidelines allowing them to continue education in the new reality, and the help provided by HEIs was assessed more positively by students of private institutions. However, there were also more poor and very poor ratings in this respect among students at private establishments (by 3%).

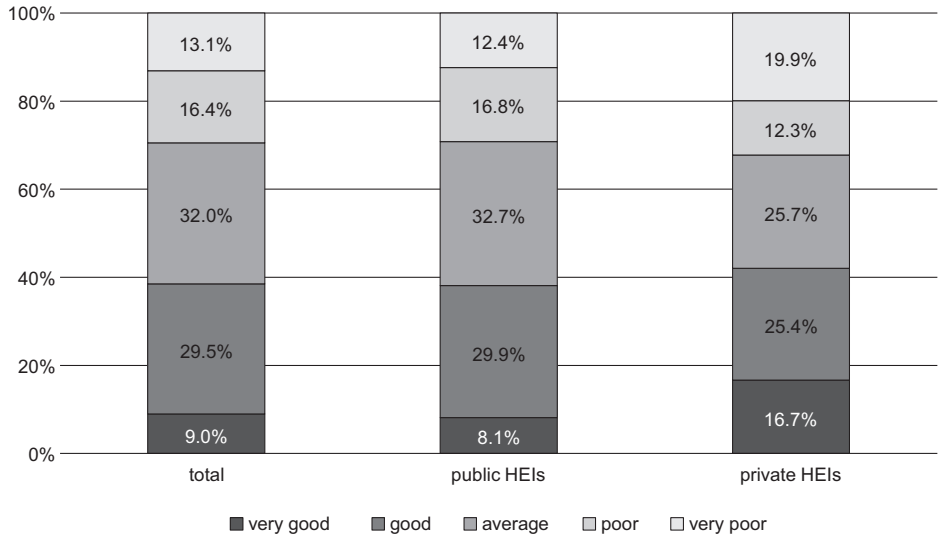

Fig. 20. Breakdown of responses to the question: How would you rate the HEI's help in organising remote classes at the beginning of the pandemic?
Source: own work based on results of the survey.

The survey results indicated that with time students had an increasingly better opinion of the support offered by HEIs (see Fig. 21). In the second semester of the 2020/21 academic year, over 60% of students indicated that the support was at a good or very good level, 25% – at an average level, and only 10% – at a poor or very poor level. It is worth noting that students from private HEIs comprised a much greater proportion of those respondents who rated the assistance of HEIs as very good in the second stage of the pandemic. Such differences in the evaluation between the summer semester and the winter semester of the subsequent academic year mean that, after the organisational chaos that initially prevailed, HEIs were able to develop new procedures compatible with distance learning, and everyone adjusted to the new situation and was capable of coping (better or worse) with the new challenges.

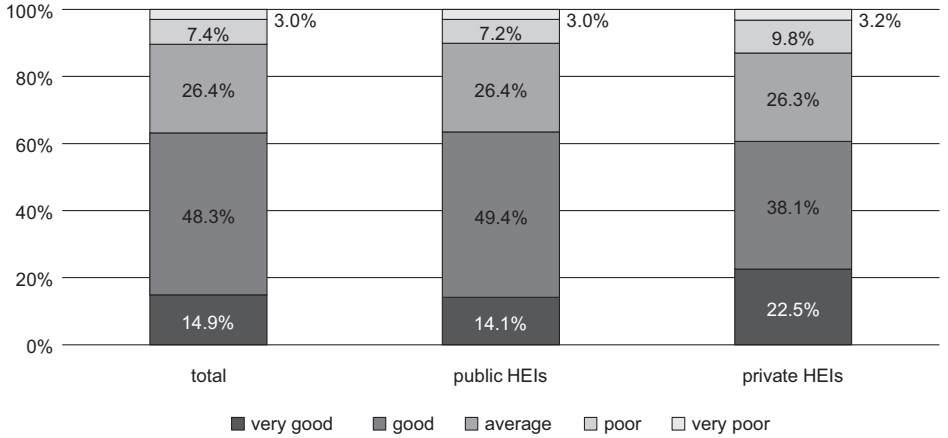

Fig. 21. Breakdown of responses to the question: How would you rate the HEI's help in organizing remote classes for students in the winter semester of the 2020/2021 academic year?
Source: own work based on results of the survey.

An important element of effective education using distance teaching methods and techniques is the HEI's support in training students and teachers in the technical operation of the recommended platforms, as well as its support in securing the availability of appropriate computer hardware. In connection with the strategy of ensuring equal access to the education process, HEIs offer the possibility of using HEI-owned computers to people reporting such needs. However, the knowledge about the possibility of using this equipment is not common among student respondents to the survey. About 2/3 of them do not know about such possibilities, and only 8.5% know that they can use computers at their establishment or, in justified cases, borrow them. But over a quarter of the respondents (26.2%, see Fig. 22) directly indicate that they have no possibility of using HEI-owned computers. It is a relatively large percentage, but the situation also differs depending on the type of establishment. The respondents' answers show that those studying at public establishments have more opportunities to use computers.

Another important issue addressed by the survey was the students' assessment of how well the teachers were prepared to use e-learning platforms. Over 80% of the respondents (see Fig. 23) rated the teachers' skills as very good or good, with the reservation that this did not apply to all but a vast majority of the teachers. 17% of students felt that the teachers were average at dealing with e-learning platforms and that they had problems using them for remote teaching. Certainly, a positive observation is the fact that only slightly more than 2% of the respondents thought that the teachers coped poorly with the new formula of teaching. The students of public HEIs were more positive in their ratings. Interviews with students revealed that a positive aspect of online learning was the establishment of positive relations between students and teachers, as the former, being familiar with modern technology, often provided assistance and technical support to the teachers.

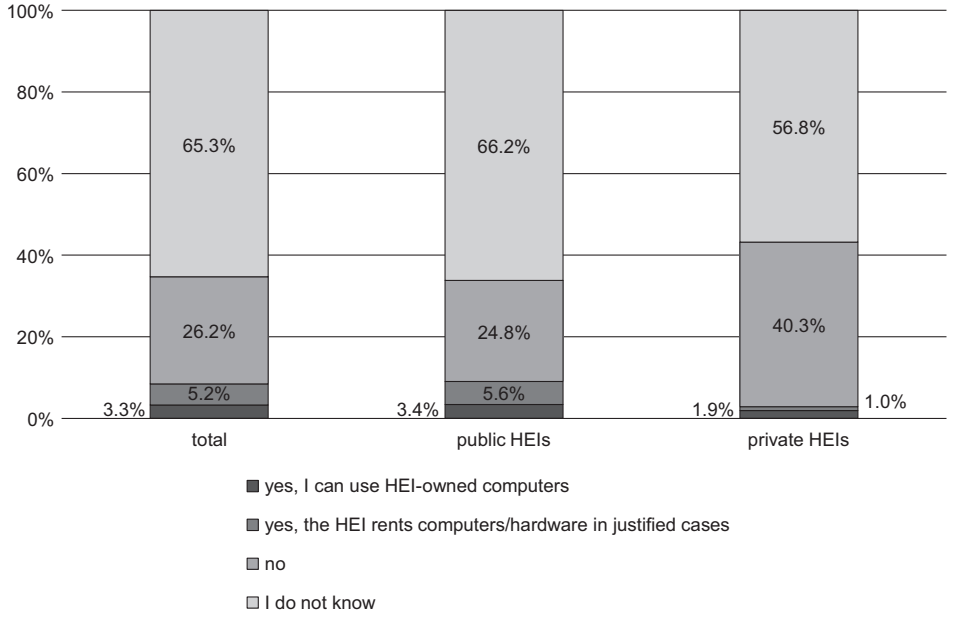

Fig. 22. Breakdown of responses to the question: Do you have the possibility of using HEI-owned computer hardware?
Source: own work based on results of the survey.

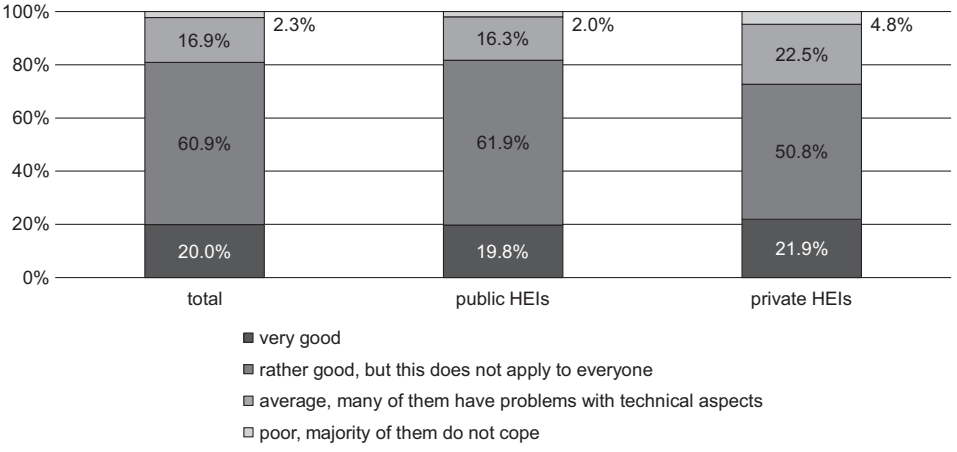

Fig. 23. Breakdown of responses to the question: How would you assess the teachers' skills in using e-learning platforms?
Source: own work based on results of the survey.

3.5. Conditions for online education

Another issue raised in the survey is the question of conditions for studying remotely. This section of the report will address the organizational, housing, family

and psychosocial issues related to students' ability to focus during classes, as well as their functioning during the pandemic.

The pandemic situation changed the entire reality in which we lived, worked and learned. As indicated by the results of the survey, only a small percentage of students (22%) has the privilege of living in a family home in the city where the HEI is located (cf. Fig. 24). In such cases, the costs of studying are incomparably lower. On the other hand, the largest group, i.e. 65% of students (cf. Fig. 24), rents a room or a flat in the city where the HEI is located, which generates significant costs of living. When the online education system was implemented, only some students (25.8%) decided to stay in the rented premises. The reasons for such a decision varied: employment in the place of study, reluctance to return to the family home, social and other reasons. In contrast, almost 40% of students returned to their hometowns for the duration of the remote teaching period. The main reasons for making such decisions were economic considerations and no need or willingness to stay away from the family home when it was not necessary. These decisions influenced many other aspects of the economic and social life.

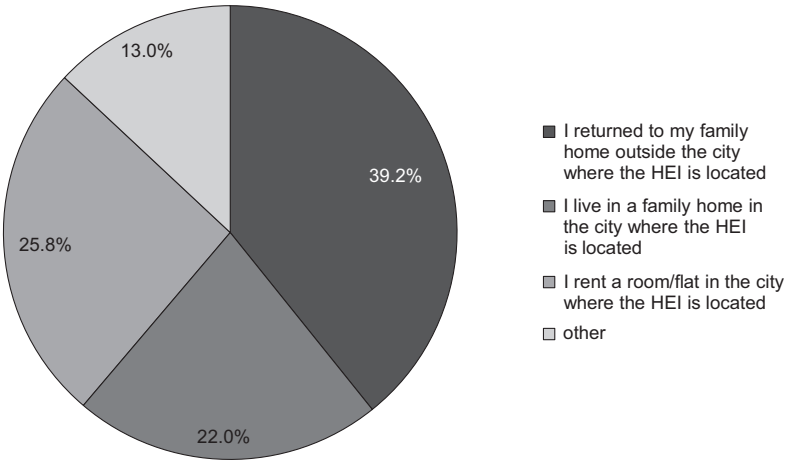

Fig. 24. Breakdown of responses to the question concerning the place of residence during the pandemic period when classes were conducted online
Source: own work based on results of the survey.

The respondents' answers regarding suitable conditions for taking remote classes are very positive – almost 90% (see Fig. 25) of students confirmed they had such conditions, while one in ten did not have or rather did not have suitable conditions at home to take remote classes. There is a need to reflect upon a large discrepancy between the good opinion reported by the students as regards their home conditions and the reluctance to turn the webcams on during online classes, which implies other reasons determining such attitudes (perhaps students do not feel the need to reveal their personal life).

Certainly, one of the major challenges faced by students in the context of online education was the problem of concentration (see Fig. 26) – over 42% of respondents emphasized that it was difficult to maintain focus for such a long time, because there were many other ways to spend this time at home. 49% of students declared that they were rather not distracted during classes and tried to isolate themselves. The rest – 8.6% of respondents, emphasized that nothing could stop them, and they were absolutely focused on the classes. Male respondents declared fewer problems with concentration. 11.9% of men stated that nothing could prevent them from taking classes in front of the computer, while only 7.4% of women chose this answer.

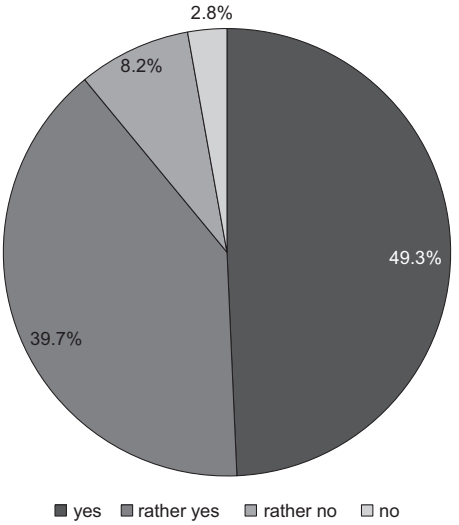

Fig. 25. Breakdown of responses to the question: Do you have adequate conditions for taking online classes at home?
Source: own work based on results of the survey.

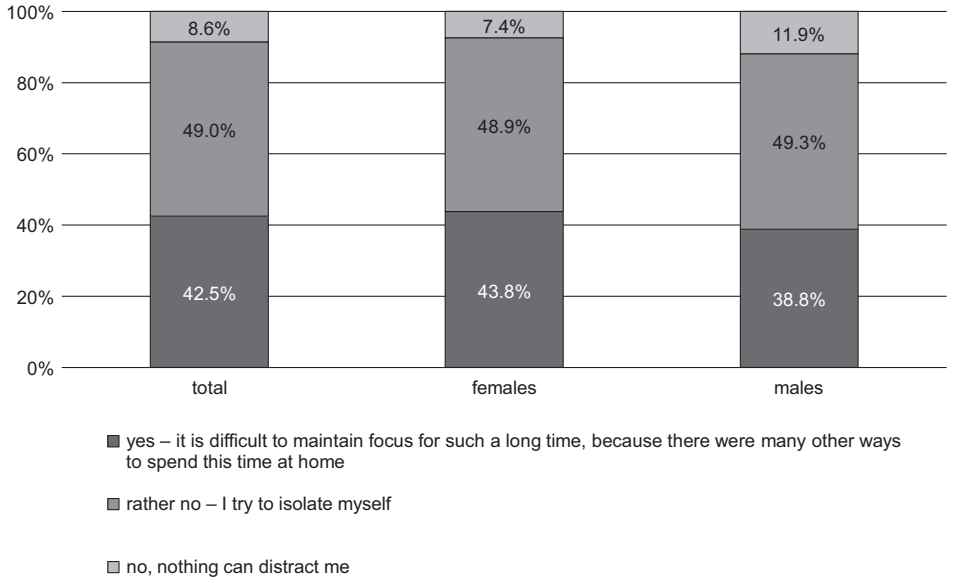

Fig. 26. Breakdown of responses to the question: Do you often experience distractions when taking online classes at home?
Source: own work based on results of the survey.

As already mentioned, the problem of the lack of contact with fellow students was very troublesome for many respondents (cf. Fig. 27). Due to the fact that a large proportion of students (40%) returned to their hometown, they cannot meet directly with their peers. Only a little over 6% of the respondents meet their classmates quite often, 26% of them do it occasionally (male respondents are more active in this respect). However, the rest of them – over 67% do not have any contacts with students from their groups. There are various reasons for this situation. As mentioned above, a significant part of the students returned to their family homes; lower-year students did not even have the opportunity to meet in the first place, so in their case it is difficult to have the need to meet at all; others chose the virtual world.

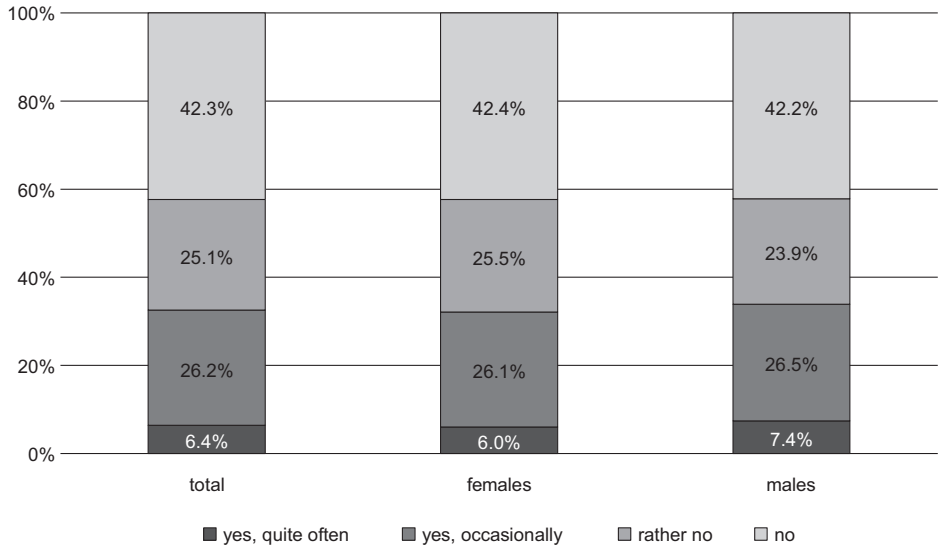

Fig. 27. Breakdown of responses to the question: Apart from the remote classes, do you meet your friends/acquaintances in the real world?
Source: own work based on results of the survey.

3.6. Advantages and disadvantages of online education

In the next stage of the survey, the respondents were asked to indicate the pros and cons of studying remotely. Students appreciate above all (cf. Fig. 28): saving time on commuting to the HEI (86.9%), the possibility of participating in classes despite minor illness (76.5%), the possibility of sleeping longer (70.7%). Subsequently, they highlighted the following advantages: more freedom and flexibility in the organisation of the way they study, more time for oneself and for contact with the family, as well as the possibility of eating regularly and well. The following were also mentioned as benefits of this situation: more time for paid work, fewer stressful situations related to everyday life and the possibility of better concentration. A small percentage of students (fewer than 10%) mentioned

greater support from their friends and the fact that online education created an opportunity for them to study.

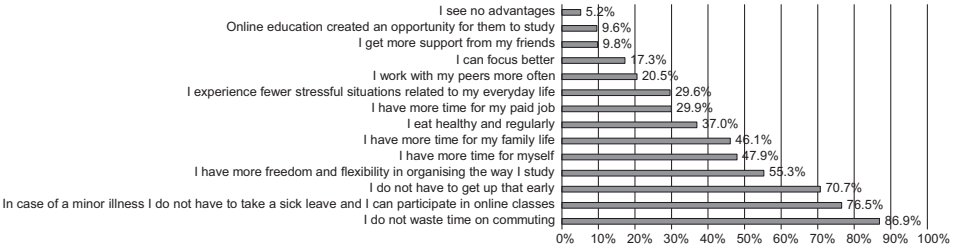

Fig. 28. Breakdown of responses to the question: In your opinion, what are the advantages of online education during the pandemic? Select all the answers that apply (multiple choice question)
Source: own work based on results of the survey.

In turn, the greatest disadvantage of studying remotely, according to the respondents, is the lack of personal contact with friends from the HEI – 70.2% (see Fig. 29). Other most frequently reported disadvantages were: decreased physical activity (58.1%), the lack of direct interaction with tutors (54.8%), taking less care of one's appearance (45.4%), and a feeling of apathy and mental discomfort resulting from the situation (42.9%). Students also emphasize: difficulties related to the bandwidth, the feeling of increasing frustration due to the participation in remote classes, the belief that they are left alone, as well as the lack of unrestricted access to the infrastructure located at the HEI premises and the belief that they are disorganized and poorly manage their time. Other shortcomings indicated by slightly smaller groups of respondents include: health problems resulting from long time spent in front of the computer and the belief that remote classes are more demanding and more difficult to pass. On the other hand, only 8.2% of students stated that they did not see any disadvantages of remote studying.

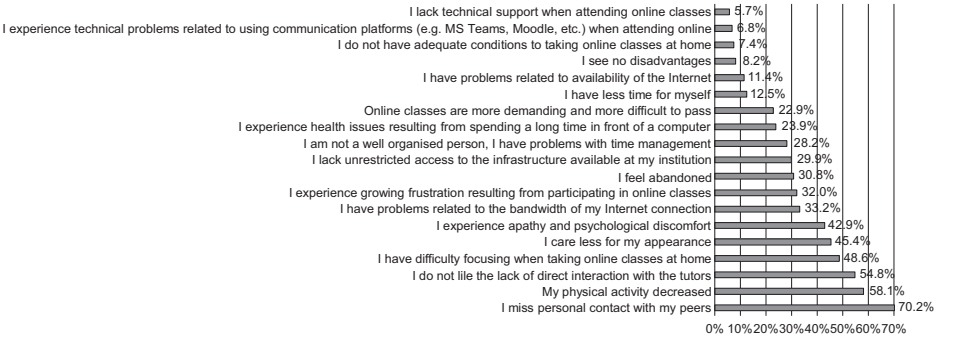

Fig. 29. Breakdown of responses to the question: In your opinion, what are the disadvantages of online education during the pandemic? Select all the answers that apply (multiple choice question).
Source: own work based on results of the survey.

4. Social attitudes of academic teachers towards changes in the operation of higher education institutions and teaching practices during the pandemic

4.1. Number of hours and type of classes delivered online

During the pandemic, the academic teachers surveyed have in general been teaching their normal number of teaching hours. However, it should be noted

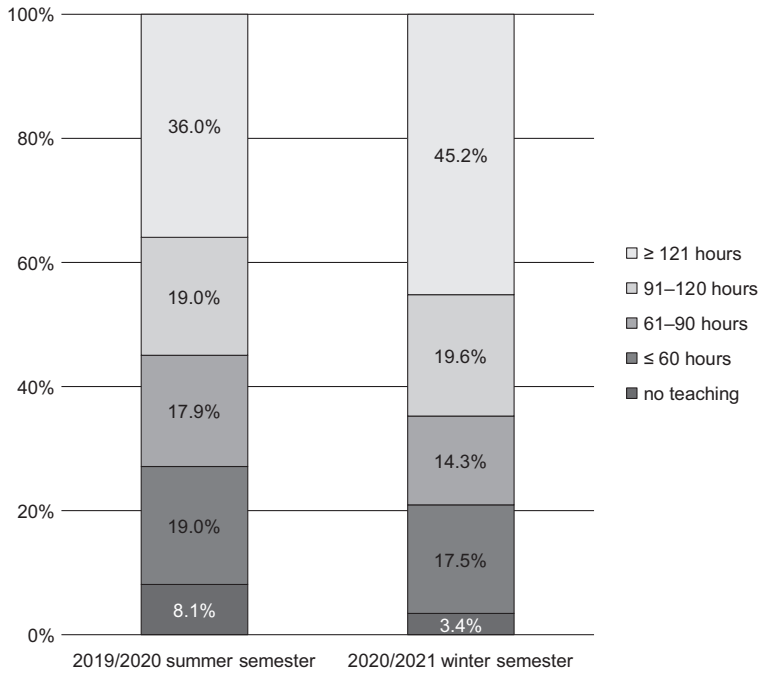

Fig. 30. Breakdown of responses to the question: How many teaching hours did you have during the 2019/2020 summer semester and 2020/2021 winter semester?
Source: own work based on results of the survey.

that the teaching load of the respondents was greater in the winter semester of the 2020/2021 academic year – 36% of respondents reported teaching 121 or more hours at the beginning of the pandemic and over 45% reported teaching 121 or more hours during the second stage of the pandemic (Fig. 30). It seems that this helped to re-organize the courses and move them online. The lighter teaching load at the beginning of the pandemic made it easier to shift from face-to-face to online classes.

The proportions of the various types of classes taught by the respondents did not vary much between the 2019/2020 summer semester and the 2020/2021 winter semester (Fig. 31). The proportion of field classes (which mainly take place in the summer semester) held in the summer semester (5.5%) was only slightly higher compared to the winter semester. This is undoubtedly due to the fact that many field classes were cancelled due to COVID-19 restrictions.

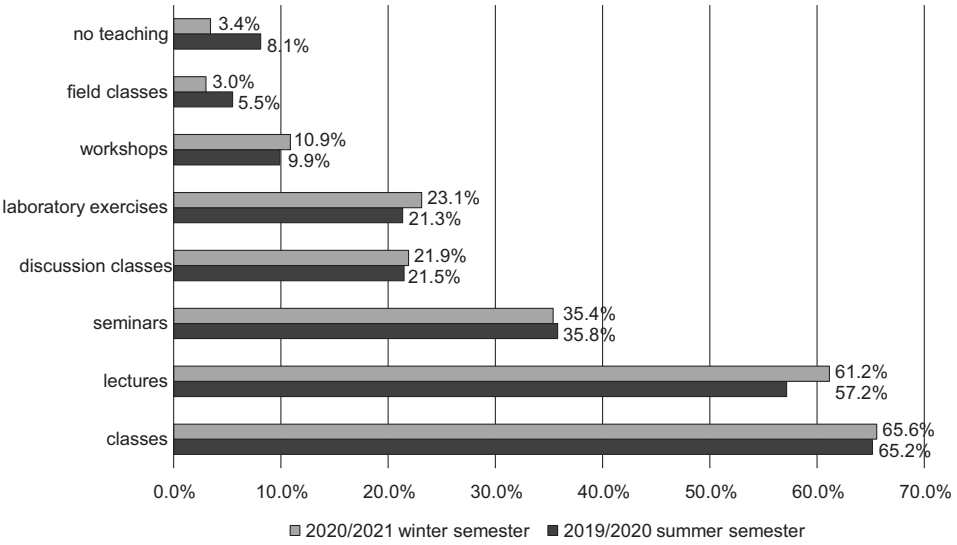

Fig. 31. Types of classes taught by the respondents in the summer semester of the 2019/2020 academic year and the winter semester of the 2020/2021 academic year
Source: own work based on results of the survey.

4.2. Knowledge and preparedness for online teaching

Only 21.1% of the teachers surveyed received training in online teaching before the pandemic and over 42% were provided with such training after the outbreak of the pandemic (Fig. 32). This implies that a large proportion of respondents were left to navigate the situation on their own, which may have compromised the quality of their teaching (especially during the initial period of the pandemic).

The answers provided by respondents were also analysed by type of higher education institution (Table 7). It turned out that a slightly larger proportion of respondents working at public HEIs received training in online teaching before

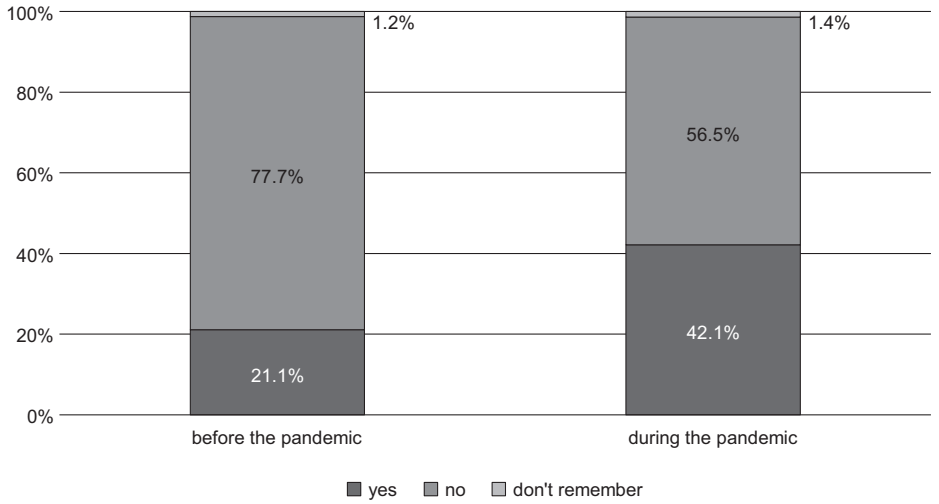

Fig. 32. Breakdown of responses to the question: Did you receive training in online teaching before and/or after the outbreak of the pandemic?
Source: own work based on results of the survey.

the pandemic. Over half of respondents working at private HEIs were provided with such training after the beginning of the pandemic, which is a much larger proportion compared with respondents working at public institutions.

Table 7. Did you receive training in online teaching before and/or after the outbreak of the pandemic? Breakdown of responses by type of higher education institution

answer	Before the pandemic		During the pandemic	
	public HEIs	private HEIs	public HEIs	private HEIs
Yes	21.2%	20.6%	40.5%	52.5%
No	77.4%	79.4%	57.9%	47.5%
Don't remember	1.4%	0.0%	1.6%	0.0%

Source: own work based on results of the survey.

Only 21.9% of teachers were already involved in online teaching before the pandemic, while the remaining respondents had no previous online teaching experience (Fig. 33). Thus, responses to other questions mostly reflect the views of respondents with no previous experience of teaching online. However, it should be noted that a significantly larger proportion of respondents working at private HEIs were already involved in online or blended teaching before the pandemic.

Over 92% of respondents reported that their skills in online teaching had improved (with over 58% reporting a strong improvement in online teaching skills), which, in the light of responses to the previous question, indicates that almost all the academic teachers surveyed, i.e. both those with experience in online teaching and those with no previous online teaching experience, have improved their online teaching skills during the pandemic (Fig. 34).

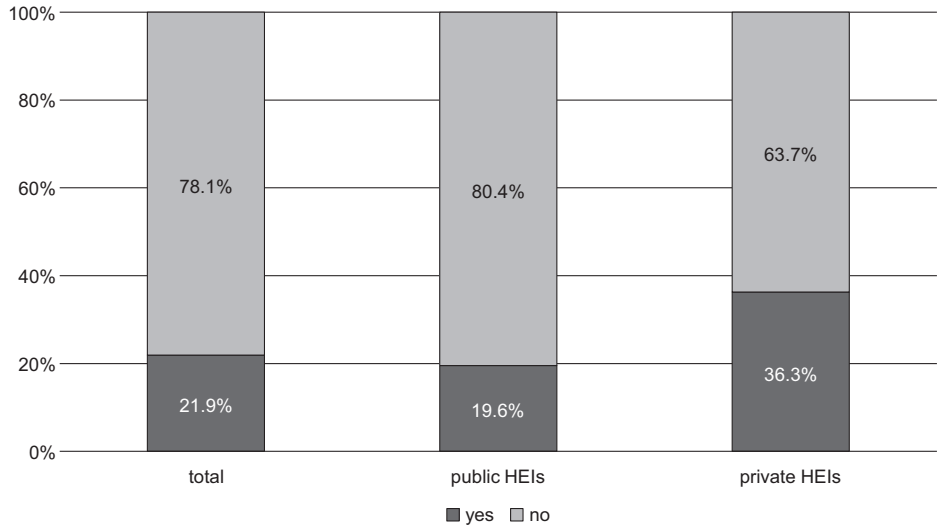

Fig. 33. Breakdown of responses to the question: Were you involved in online or blended teaching before the pandemic?
Source: own work based on results of the survey.

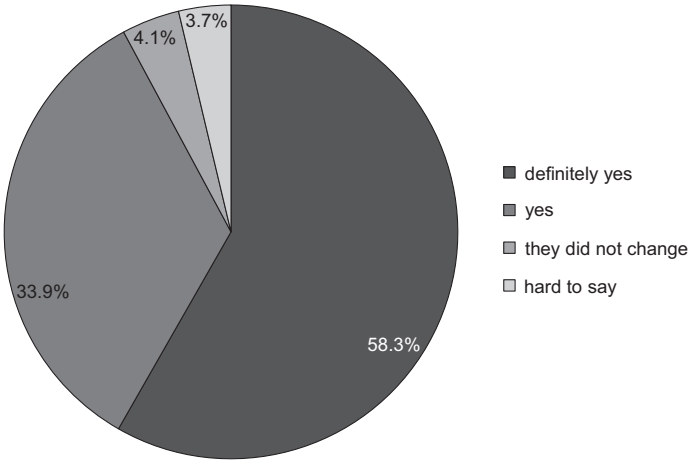

Fig. 34. Breakdown of responses to the question: Have your skills in online teaching improved during the pandemic?
Source: own work based on results of the survey.

Over 80% of teachers rated their level of preparedness for online teaching as at least 7 on the scale adopted, which seems a very good predictor of good online teaching performance of the respondents (Fig. 35).

The academic teachers surveyed feel well prepared to navigate the three major platforms (MS Teams, Moodle and Zoom) used by HEIs (in fact a platform to be used was indicated by the institution), with over 80% of respondents declaring

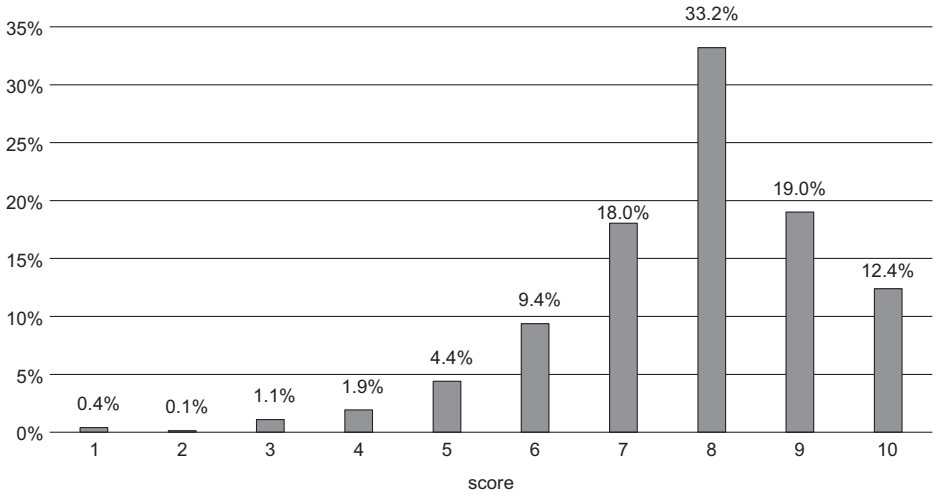

Fig. 35. Breakdown of responses to the question: How would you rate your level of preparedness for online teaching?
Source: own work based on results of the survey.

that they feel well prepared to use the MS Teams platform. The respondents were not likely to use Google Meet or other applications that were not listed in the questionnaire (Fig. 36).

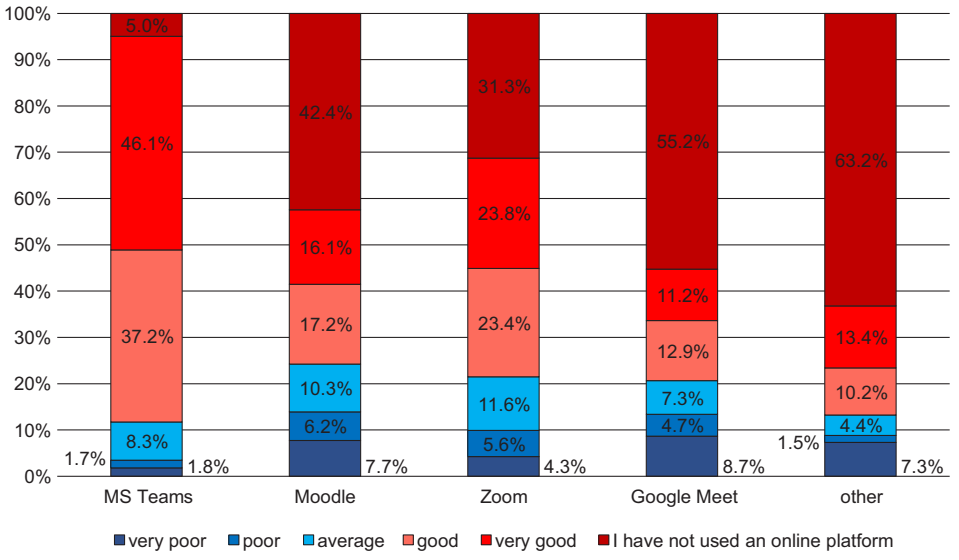

Fig. 36. Breakdown of responses to the question: How would you rate your skills in using MS Teams, Moodle, Zoom, Google Meet and other communication platforms?
Source: own work based on results of the survey.

Over 60% of respondents reported that they plan to teach some classes online in the future (Fig. 37). Should their respective HEIs approve such a teaching format, it will undoubtedly transform teaching at these institutions.

The academic teachers surveyed could also make their own comment on their knowledge and preparedness for online teaching. This option was used by 30.2% of respondents. The respondents provided both positive and negative comments about the support they received from their institution in preparing for online teaching, with a larger proportion of comments being negative. Below you will find some of the comments made by the respondents on the following issues:

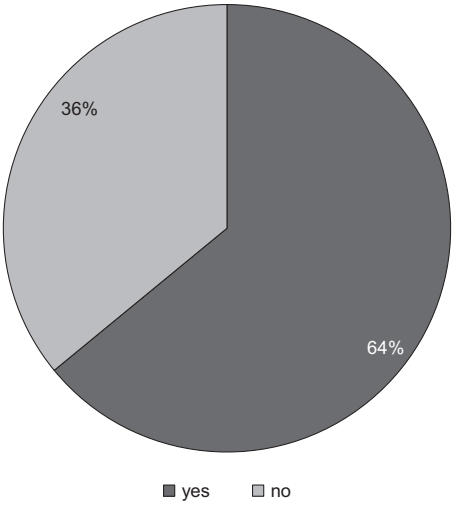

Fig. 37. Breakdown of responses to the question: Do you plan to teach some classes online (in a blended format) when face-to-face classes resume?
Source: own work based on results of the survey.

1) The respondents point out that they had to learn how to use communication platforms on their own, as training or instructions regarding the technical aspects of online teaching came too late:

Learning to use communication platforms mostly required personal determination, a sense of responsibility for the teaching process, and related to that, devoting a large portion of your free time to master the tools and use them in a professional manner when working with students. It was quite satisfying, although the 'more personal' way of teaching seems considerably more effective. Information presented during courses/training in using MS Teams at (HEI name) only confirmed the skills I obtained earlier on my own. I needed the tools earlier (already in March 2020) than training became available. However, I view the determination of universities in organizing training in positive light. [respondent 199, female, public HEI, 16–20 years of teaching experience]

In the summer semester at the beginning of the pandemic the (HEI name) did not offer any training in teaching online classes. The first training was held at the end of May and it only applied to conducting online examinations. We were forced to take the plunge ourselves and we were then evaluated on how well we did. What is more, most of us had to use our private computer equipment and Internet connections, and this continues to this day. If it wasn't for the devotion of employees all this online teaching as well as the entire (HEI name) would tumble like a house of cards. [respondent 266, female, public HEI, 5–10 years of teaching experience]

2) There were also indications that some academic teachers worked with other teachers to learn how to use communication platforms with the help of instructional videos available on YouTube:

I learned a most of my skills in conducting online classes using trial and error, by sharing experiences with other teachers and using videos available on YouTube [respondent 555, female, public HEI, 25 years or more of teaching experience]

Some actually preferred using instructional videos on YouTube [respondent 578, male, private HEI, 25 years or more of teaching experience]

3) Opinions were voiced that it was necessary to work with difficult, complex instructions. The same persons also indicated that the information on using MS Teams published on YouTube was very useful and clear:

Using communication platforms is not beyond the reach of a normal human being. The worst part was that you had to struggle with poorly written instructions and 'explanations'. Look at the pompous language that is used in them. A similar problem applies to the program itself: the language is imprecise and the same things are referred to using different terms. There are also a number of useless options (emojis! I sure as hell don't need any emojis and avatars! The same applies to other junk that clutters the program or stupid questions e.g. 'Do you want to remain signed in?' that appears when starting the program. What do you mean by that? Who would want to be signed out while working? etc.). Luckily you can find some decent presentations on using Teams on YouTube. [respondent 378, female, private HEI, 25 years or more of teaching experience]

4) Among critical responses, the following is noteworthy: The respondent asked their HEI questions about conducting online classes and about obtaining computer equipment from it:

Unfortunately the university did not rise to the task and did not prepare us for working online. If it wasn't for my own persistence and focus on the quality of my teaching I wouldn't have learned much. In the 2019/2020 summer semester I decided to start conducting online classes after discussing this with my students. I learned how to use Zoom on my own and with the support of my students as well as my friends and family. When I asked my university how they will support me (in March-April 2020), I was advised to use Moodle! or send complete lectures to email addresses of student groups! In the new academic year we were all told to use Teams but no support was provided by the university. We got the simplest version of Teams (without many useful features e.g. rooms, calendar etc. – fortunately this has changed by now). Our computers had no cameras or speakers. We asked the rector what to do about this and the response was that we could buy the equipment we need using our own money. Therefore, I conduct my classes using my own laptop and my private Internet connection. I want to clearly state that the authorities at our university ignore the needs of academic teachers and students alike! [respondent 673, female, public HEI, 21–25 years of teaching experience]

5) Some responses indicated the lack of technical and psychological preparation of academic teachers for conducting online classes as well as teachers being given very short notice when it comes to conditions/guidelines for conducting the said classes:

...here I am working at night, rarely seeing my child and my partner (even though I am at home) because each one of us is sitting at their computer trying to 'work things out' because 'it needs to be done'. I would like us all to come closer to striking a happy medium and treat each other with understanding, but it seems impossible. This makes me sad and makes me feel tired. Online teaching isn't bad. It is different. But no one prepared us for it: neither technically, nor psychologically. Everything seems suspended, no one knows for how long, sometimes we learn about some changes the day before they come into force and the entire education system is being criticised. [respondent 721, female, public HEI, 11–15 years of teaching experience]

6) Another person points out that the lack of technical knowledge and skills required to conduct online classes is not the problem. However, the problem lies in the psychological aspects of this teaching method:

I do not like to conduct online classes, they do not give me the satisfaction that I used to get from my work. Over this long period I was not able to successfully adapt to this teaching method. I think that it is possible to continue teaching this way (at the expense of a large amount of additional work by teachers and students) but it will not provide the same fluency, good atmosphere and satisfaction (to teachers and students). [respondent 184, male, public HEI, 11–15 years of teaching experience]

7) In the later stages of the pandemic HEIs organised courses to improve the teachers' technical skills in using communication platforms. Some of the respondents considered themselves very well prepared by their HEIs (both public and private) to conduct online classes:

Thanks to the materials made available by the university, FAQs etc. I feel well prepared for conducting my classes using Teams. [respondent 1, female, public HEI, 5–10 years of teaching experience]

The (HEI name) prepared me very well for conducting online classes through several free training sessions. By this I mean teaching me the use of the software as well as providing ideas for class scenarios that worked well. [respondent 606, female, private HEI, fewer than 5 years of teaching experience]

8) There was also criticism related to the training being unsuitable to the knowledge level of academic teachers:

The training is conducted at the competence level equal to that of the instructors themselves. There are problems in finding the links to the training and signing in (opening such links). The instructors direct their training to persons who are well versed in the subject matter, they

seem to not be able to do otherwise. [respondent 531, male, public HEI, 25 years or more of teaching experience]

On the one hand, online courses organised by the (HEI name) to teach us online teaching repeated the same information on numerous occasions. On the other hand, the trainers often spoke from the position of knowing the platform/software very well and unfortunately they were not able to reach many of us... [respondent 349, female, public HEI, more than 25 years of teaching experience]

9) While the technical aspects of using communication platforms are important, it would be beneficial to develop other skills allowing for conducting online classes effectively after they are master. Several respondents indicated that there were no courses available that would develop their methodological and didactic competences for online work:

While my technical skills in using online teaching platforms improved, I have in no way developed my methodological or didactic competences. I wasn't offered any courses introducing or improving online teaching methods. [respondent 230, male, public HEI, more than 25 years of teaching experience]

I was missing an additional course devoted specifically to didactics of online teaching. I think that experience in traditional teaching and technical skills are still not enough to result in good online teaching. [respondent 28, female, public HEI, 5–10 years of teaching experience]

10) Communication platforms are constantly updated and new functionalities are added. This should be communicated to academic teachers:

It is necessary to continuously inform teachers and students about the expanding capabilities of online teaching platforms (MS Teams) and the need to e.g. update the software. When provided with information, the teachers will be able to implement changes on their own. [respondent 161, female, public HEI, 16–20 years of teaching experience]

11) It is always possible to use the technical support provided by the HEI:

In the case of my faculty there were no online teaching training programmes that had a beginning and an end (that you needed to complete). Support in this matter is constantly available: you can ask questions and get answers or tips regarding specific problems, there are also webinars and FAQs which you can refer to if needed. There are designated people who provide support. [respondent 400, female, public HEI, 21–25 years of teaching experience]

There is no technical support in the afternoons and in the evenings [respondent 674, female, public HEI, 21–25 years of teaching experience]

12) The majority of respondents learned to use communication platforms on their own and did not consider this a major challenge, e.g.:

Learning to conduct online classes was not a big challenge. It was actually conducting the classes that was difficult, but it was not related to technical issues. The problem lies with engaging many of the students during classes. It seems to me that many of them sign in but do not participate in classes at all. It is very hard to make everyone turn on their cameras. In reality it is possible only in the case examinations and assessments during which a student can receive a passing grade only if the camera is on. Another big problem is the lack of interaction with the students during a lecture. Even though their silence is understandable, it is disheartening, especially if you tell a joke during your lecture. If only there was a single pair of eyes... [respondent 671, male, public HEI, more than 25 years of teaching experience]

13) There are those who decided to start conducting online classes even before official guidelines were issued by their HEIs. These teachers communicated with their students, who encouraged them to continue teaching and even helped them:

As early as February 2020 we agreed with my students that in the case of a lockdown we will conduct classes using Skype (Teams were not available at that time). The day after universities were closed down, I was already conducting online classes. It was possible because I was teaching courses for senior students during the summer semester and I knew them well and they knew me. The switch to online classes did not affect our relations: students were open, willing to participate in discussions and had no problem turning on their cameras and microphones. During online classes which require being fully focused on the computer screen, all non-verbal ques are blocked. So, any hesitation, smile or gesture (which provide a commentary to the issues discussed) is absent. As a result, we were able to cover more information, but this does not immediately translate to better teaching results. Some students still find it difficult to use the Teams platform (that is constantly being updated). [respondent 254, female, public HEI, more than 25 years of teaching experience]

14) The majority of respondents share a negative view on online teaching, e.g.:

This type of teaching should be considered a last resort. It is impossible for online teaching quality to be comparable with that of traditional teaching methods. This applies to lectures and classes. Nothing can replace direct contact and the limitations which stem from its absence cannot be overcome with any 'virtual' solutions. Human contact and interaction with their nuances are of critical importance. After a year of online teaching in various forms I believe that it simply does not work. In the case of primary, secondary and tertiary education we have a dummy system, a mock-up of sorts, which works to a certain degree, but it will never improve. Having talked to a large number of people I came to the following conclusion: if we were to value quality, this entire year should be repeated using traditional teaching methods at all levels of the education system. Many school teachers and academic teachers came to the same conclusion. [respondent 142, male, public HEI, 21–25 years of teaching experience]

15) Academic teachers noticed that students are not as involved in online classes as in traditional classes, which makes conducting them more difficult:

Online teaching is not very effective. The students participated in classes while driving their car or while moving house: 'I'm just listening. I can't do this task because I'm moving boxes'. They also did home chores during classes: 'I can't do this task because I'm waiting for a courier. I'm just listening'. [respondent 606, female, private HEI, fewer than 5 years of teaching experience]

It is difficult for the teacher to conduct online classes. Every day you talk to the computer screen for several hours and you have to get used to it. It is also difficult to demonstrate to students how to do something. In the beginning the students were very reluctant to turn on their cameras, which gave you the impression that you are talking to yourself. I am under the impression that while participating in online classes students are not fully involved in what is going on during a lecture/class. This may be caused by the lack of control over what they are doing. [respondent 564, male, public HEI, 5–10 years of teaching experience]

We have lost an entire year in education. By 'we' I mean teachers and students. It was 'reconnaissance by fire' – we learned how to use online tools on the go. The previous semester was devoted to self-education in this respect. The majority of my colleagues are well aware that conducting classes online is like learning to drive using a PlayStation. Your control over students is fictional. We, the teachers, pretend that we are teaching and the students pretend they are learning. This is caused by lack of respect for knowledge and learning that starts at schools and at home. It makes me sad that national authorities and university authorities are not brave enough to say that this year has been lost. On paper everything looks fine, as required, all teaching programs will have been completed. But only a fraction of students is aware what studying is all about and understands the goal of academic teaching and what participating in a university programme actually means. Only these few people devote their own time to learn and gain new skills (also with the help of academic teachers). [respondent 412, male, public HEI, more than 25 years of teaching experience]

16) During online classes it is difficult to reliably verify the student's knowledge and skills:

I teach sculpture. This required me to find a sculpting medium that students will be able to use at home. The biggest problem was correcting their work using the camera. Because of image distortions I can never be 100% sure if the form of the student's work is correct. [respondent 558, female, public HEI, more than 25 years of teaching experience]

Vocational training (in the case of musicians – soloists) using online classes is ineffective. It deprives students of the major benefits that stem from direct master–student contact. [respondent 612, female, public HEI, more than 25 years of teaching experience]

17) There are those who say that online classes can be a useful tool in the future. It can be used in the case of travel, sickness or other life events:

This also applies to meetings or lectures which can be available to wider audiences if held or conducted online. The pandemic forced us to introduce new solutions which can be used after it is over. [respondent 366, female, public HEI, 11–15 years of teaching experience] *Online classes can be used as one of the teaching methods after the pandemic is over* [respondent 173, female, public HEI, 15–20 years of teaching experience], *e.g. during seminars with foreign doctoral students* [respondent 303, female, public HEI, more than 25 years of teaching experience], *as a method for holding office hours* [respondent 607, female, private HEI, more than 25 years of teaching experience] *or conducting classes with extramural students.* [respondent 251, female, public HEI, more than 25 years of teaching experience]

18) Positive aspects of online classes also include the increase in creativity, both on the part of academic teachers and students:

Online classes allowed me to 'discover' didactic, emotional and social creativity as well as cognitive knowledge in myself and in my students that I wasn't aware were there and never used them, considering them marginal... I am certain that students feel the same way. [respondent 536, female, public HEI, 16–20 years of teaching experience]

19) Other teachers observed that the introduction of online classes allowed them to use more varied teaching methods and make optimal use of their teaching time:

In programmes in economics teaching quality did not deteriorate as a result of switching to online classes. On the contrary, I was able to make better use of the time available to me and use modern tools e.g. Excel, Forms, tasks etc. [respondent 410, male, public HEI, 11–15 years of teaching experience]

Online teaching motivates me to look for new forms of classes, new methods for motivating students and sparking interest in them. Interesting educational materials presented during classes become an inspiration to broaden one's knowledge. [respondent 471, female, private HEI, 21–25 years of teaching experience]

20) Some voice the opinion that in the future communication platforms (e.g. Teams) may be treated as a supplement to classes:

An educational platform e.g. Teams may be a great addition to traditional classes, used for gathering educational materials, sending homework assignments, communication in small teams outside teaching hours etc. [respondent 525, male, public HEI, 16–20 years of teaching experience]

21) It would be good to consider introducing other tools that support online teaching:

It is too bad that the university does not provide any additional tools e.g. Prezi or tools used to create mind maps. Not to mention Testportal. Teams is a very bad tool for conducting classes. [respondent 264, male, public HEI, 5–10 years of teaching experience]

22) The following statement by one of the respondents can serve as a very good summary of all the issues discussed before:

I think that there is much more we need to learn about conducting online classes, especially when it comes to student engagement, good organisation of classes but also when it comes to good teaching results. It is not enough to learn the technical aspects – even if we complete several courses in using e-learning platforms, which many have done before and during the pandemic. I am still not sure if I am able to conduct an online class that is interesting, balanced and has good content. I think that the conditions in which we have to work and in which many of our students have to study are a huge problem. Students do not have their own quiet space to study, they lack of good Internet connections, face various distractors at home, teacher is sometimes unable to keep the students engaged, students are unwilling to turn on their cameras, do not get involved in discussions, hide behind a 'dark screen' and focus on other activities during classes. Also there are the psychological aspects – the emotional aura that accompanies online classes. It is more difficult to reach students who are already lost, unmotivated and prone to procrastinating. If the teachers do not see their students, there is no feedback in the form of their reactions or facial expressions, and emotional relations are very limited in online teaching. This is compounded by fatigue and burnout resulting from spending many hours in front of a computer screen. Preparing for online classes is more time-consuming than for normal classes and this adds up to the general fatigue. I am not sure how to solve the problems that occur: students looking for the 'easy way out', e.g. reading answers to questions from their computer screens, cheating or working together during tests, using claims of technical problems when they are not prepared for class. Honestly, the summer semester during which online classes were conducted on such scale for the first time was a huge challenge and it would be good to draw some general conclusions for the future. How to design classes so that both parties are satisfied, feel that they fully participate in them, experience an emotional and intellectual connection and get the satisfaction that stems from a time well spent? These are the questions to which I do not have a good answer. [respondent 382, female, public HEI, 16–20 years of teaching experience]

4.3. Working conditions in online teaching

In the beginning of the pandemic, academic teachers did not receive much support when it comes to hardware needed for teaching provided by their HEI (Fig. 38). Only 54.2% of academic teachers had the equipment required (laptop or a personal computer). In the 2020–2021 winter semester the situation improved only slightly (by about 6%). Fewer than one third of all respondents had printers. Only few had access to specialist equipment such as graphics tablets and digital pens.

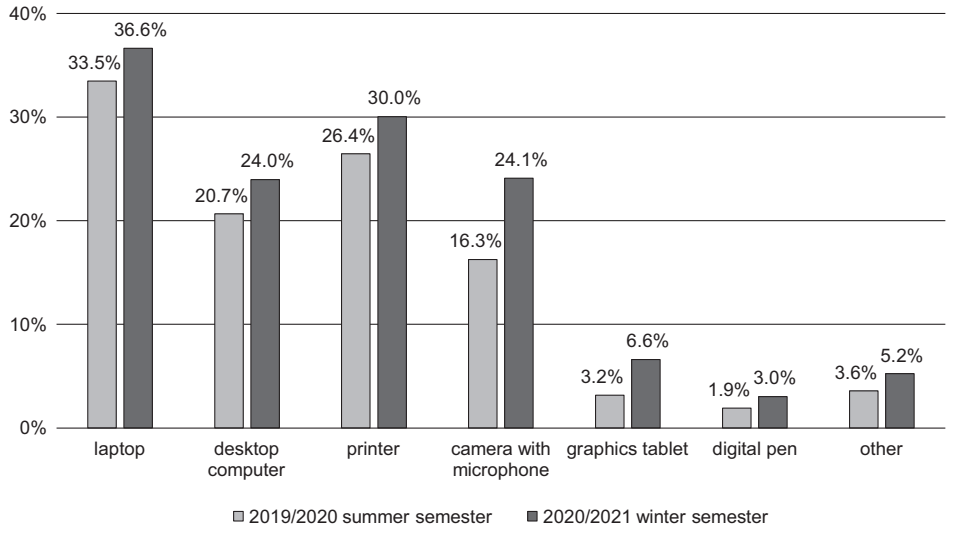

Fig. 38. Breakdown of responses to the question: Did you have access to the hardware required to perform your work online (teaching, research and organisational tasks) provided by your institution in the 2019/2020 summer semester and in the 2020/2021 winter semester?
Source: own work based on results of the survey.

Conducting online classes requires specific equipment. Over two thirds of respondents were forced to buy equipment including computer hardware, cameras with microphones on their own and over 55% were forced to have a faster Internet connection installed.

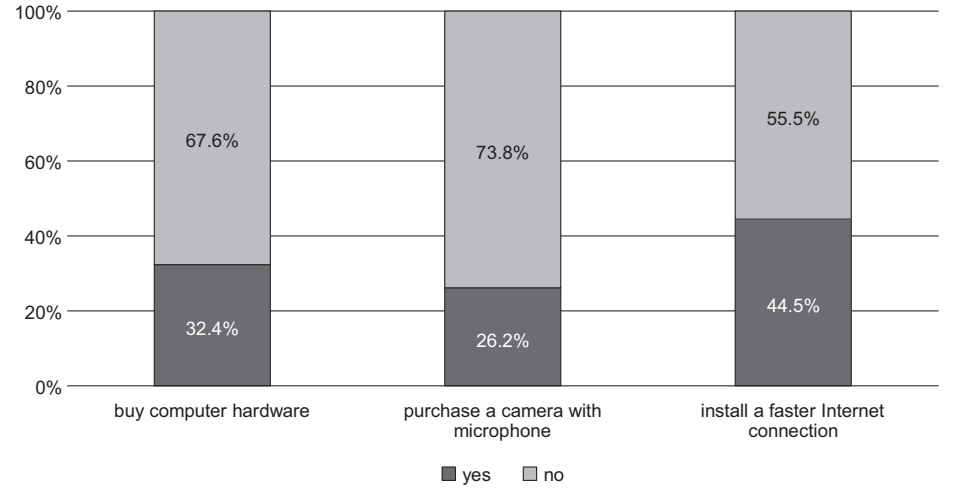

Fig. 39. Breakdown of responses to the question: Were you forced to invest in the following items because of the pandemic and the need to conduct classes online?
Source: own work based on results of the survey.

An overwhelming majority of academic teachers worked from home (over 97% at the beginning of the pandemic, with a small drop by about 2% in the second semester during the pandemic), as shown in Fig. 40. More than a quarter of respondents conducted classes from their workplace (it is worth noting that at the beginning of the pandemic considerable limitations in commuting to work were in force). The situation change slightly in the winter semester of the 2020/2021 academic year, as the restrictions were partially lifted for some periods of time and as a result one third of teachers conducted at least some of their classes at the workplace. Over 11% of respondents took the opportunity to work outside the workplace and outside of home. The responses given by academic teachers working at public and private HEIs can be found in Table 8.

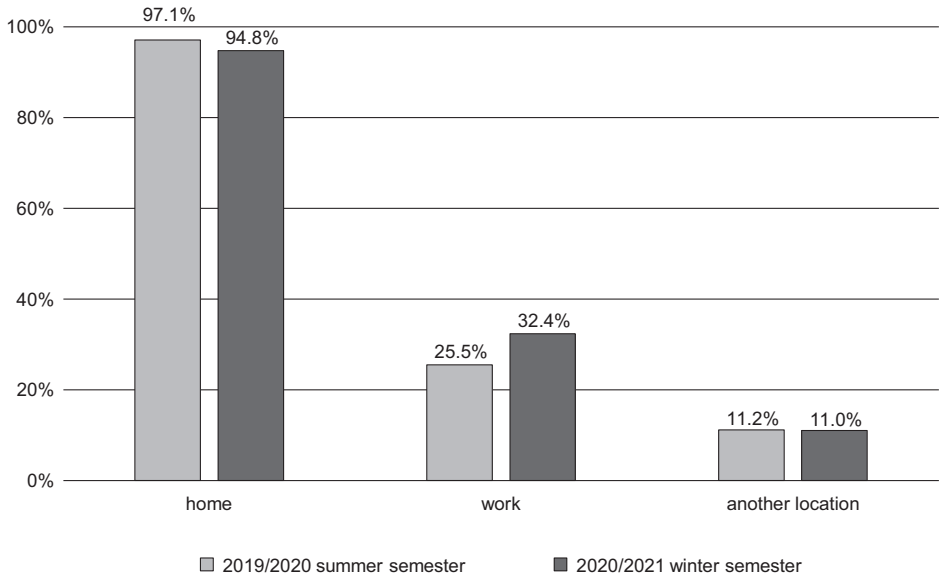

Fig. 40. Breakdown of responses to the question: Where did you work from when conducting online classes in the summer and winter semesters. Multiple answers can be selected

Source: own work based on results of the survey.

Table 8. Breakdown of responses to the question: Where did you work from when conducting online classes in the summer and winter semesters. Multiple answers can be selected, responses by higher education institution type

Answer	2019/2020 summer semester		2020/2021 winter semester	
	public HEIs	private HEIs	public HEIs	private HEIs
Home	96.8%	100.0%	94.2%	99.0%
Work	26.3%	20.8%	34.9%	16.8%
Another location	10.9%	12.9%	10.7%	12.9%

Source: own work based on results of the survey.

Academic teachers could also provide their own comments regarding working conditions during the pandemic – 28.1% chose to do so.

The most critical issue that affected the working conditions during the pandemic was the **lack of computers as well as pieces of hardware that improve online teaching conditions** (cameras with microphones etc.). Very often teachers were forced to use their personal computers or buy the required equipment so that they could perform their duties. Frustration related to this issue is seen in these comments made by respondents:

In our society many speak ill of corporations. However, it never happens in a corporation that employees are forced to buy the equipment they need to do their job. This is the basic work tool. However, (HEI name) does not agree. A computer is a basic tool!!! Every employee should have one! This issue should be resolved at a central level! Do administrative employees at (HEI name) have to buy their own computers? NO! Yet researchers and teachers very often HAVE TO. In my department with 10 employees there are 5 computers (only 2 of them are laptops!!! the other are very old desktop computers). I am sorry for such an emotional response but this is all true. [respondent 115, female, public HEI, 11–15 years of teaching experience]

The purchase of software and hardware required for work should be co-financed by the employer. This isn't even a suggestion. It's an employer's obligation that is specified in the Labour Code. Pursuant to Art. 67.11 § 1 of the Labour Code, the employer is obliged to: provide a teleworker with equipment necessary to perform telework, meeting the requirements specified in Chapter IV of Section Ten, insure the equipment, cover the costs of installing, servicing, operating and maintaining the equipment, provide the teleworker with appropriate technical support facility and necessary training targeted at the service of the equipment. [respondent 110, male, public HEI, 5–10 years of teaching experience]

The laptop that I am using has been purchased several years ago using money from a National Science Centre project for the purpose of research and not teaching. I used my own money to buy a camera for my own desktop computer, a graphics tablet and a faster Internet connection. When it comes to equipment, the university left everything in the hands of its employees. We are required to conduct online classes, but we have to get the equipment we need on our own. I estimate that so far I had to spend about PLN 1300–1500. [respondent 349, female, public HEI, more than 25 years of teaching experience]

I was lucky to have purchased a computer with an excellent microphone and camera using research funds in the semester before the pandemic. If it hadn't been for the research project, I would have to consider buying a laptop using my own money. I have all the equipment I need. However this is my private equipment that I use for conducting online classes (printer, inks, desktop computer, tablet, graphics tablet, digital pens for the tablet and the graphics tablet and a fast Internet connection). This is all my own equipment that I need to effectively conduct classes. [respondent 484, female, public HEI, 11–15 years of teaching experience]

It was impossible to resolve some of the equipment shortages in any other way. Some respondents had the possibility to **use the equipment available at their workplace**:

The employer provided (desktop) computers at the workplace, however due to restrictions in commuting and the risk of infection is seemed more rational to use my personal equipment. The optimum solution would be for the employer to provide some portable equipment. [respondent 493, male, public HEI, 21–25 years of teaching experience]

Sometimes it was possible to **borrow the required pieces of equipment from the workplace:**

I am using my own equipment but my faculty provided cameras, headphones, graphics tablets, laptops, desktop computers and document cameras. [respondent 181, female, public HEI, fewer than 5 years of teaching experience]

The pandemic and the switch to working in the virtual world caused the demand for computer hardware to increase and the supply was not always able meet it. Because of this it **took longer to conclude tenders for the supply of computer equipment:**

I am still waiting to receive a computer from my university because the conclusion of the tender for the supply of computers at (HEI name) is seriously delayed. [respondent 145, female, public HEI, 11–15 years of teaching experience]

Respondents emphasised the **problems related to Internet connection stability and speed.** Since mid March 2020, when teaching, similarly to many other activities moved to the virtual domain, the network load has increased considerably:

... my computer and the Internet connection at my home were not always sufficient, especially if several family members needed to use the Internet at the same time or did some other things. [respondent 38, female, public HEI, 5–10 years of teaching experience]

Often, even **using separate Internet connections did not yield the results required** (i.e. a good and uninterrupted connection):

I have to face difficult technical conditions. I must use an LTE Internet connection because none of the fibre-optic Internet service providers wants to connect to my house. (The infrastructure built by INEA and financed using EU money has been damaged when a street was being built and until the warranty for the construction works remains valid no one wants to do anything... so we will have to wait for almost 3 more years). The problem with an LTE connection is that I have to share it with other household members who are also teaching or attending online classes (in primary school) using Zoom or Google Meet. At such time the bandwidth leaves much to be desired (even if using 2 separate Internet sources – 2 routers

with separate sim cards, one for teaching one for learning). I keep getting low connection speed messages quite often... [respondent 174, male, public HEI, 5–10 years of teaching experience]

Respondents also mentioned that **online teaching is a considerable burden for the household budget.** It was mentioned that there are **no subsidies to pay the Internet connection charges** and no **refunds for installing an Internet connection with better parameters** which improves online teaching:

Unfortunately, online teaching is a considerable burden for my budget. (...) I had to pay for a fibre-optic Internet connection at my house and I have to cover the monthly charges [respondent 675, female, public HEI, more than 25 years of teaching experience]

Because I had to hold an online oral exam and conduct classes using a camera I use much more of my the data transfer provided in my plan than before the pandemic. I have to pay for it using my own money and the small amount I save by not having to commute to work does not cover these expenses. In private companies this would be unacceptable. [respondent 1, female, public HEI, 5–10 years of teaching experience]

As a result of working from home **the electricity bills also increased considerably**, which is yet another burden for house budgets:

I am very dissatisfied that the costs of running the education system are now covered by the teachers using money from their household budgets (electricity bills, Internet charges, new equipment). [respondent 263, female, public HEI, fewer than 5 years of teaching experience]

my electricity bill increased considerably because of working from home. [respondent 10, male, public HEI, 5–10 years of teaching experience]

...I am not happy that we didn't receive printer paper and that there are no subsidies to cover electricity or Internet connections charges. [respondent 268, female, public HEI, 16–20 years of teaching experience]

The respondents suggested to **partially compensate the teachers for purchasing equipment needed to perform their work by paying them specified lump sums or provide other forms of support:**

The employee should offer some institutional forms of support for teachers e.g. financial support for conducting online classes. An example would be a lump sum payment for using their own equipment or Internet connections. [respondent 149, male, public HEI, more than 25 years of teaching experience]

Some degree of frustration can be felt in the following comment in which the respondent **compares the situation of academic teachers and school teachers**

who were offered financial support for buying the equipment needed to conduct their classes online:

Why can't we get financial support like the school teachers did? [respondent 243, female, public HEI, more than 25 years of teaching experience]

The respondents mentioned their **difficult housing conditions** which also influenced their work during the pandemic:

During my classes the household members couldn't use the toilet and the washing machine couldn't be running as it caused too much noise. In our house we did not have a room to rest in as all of them (excluding the kitchen) were converted to offices. [respondent 278, male, public HEI, more than 25 years of teaching experience]

It was difficult to reconcile my online work and the online work of other household members. [respondent 101, female, public HEI, 16–20 years of teaching experience]

Some decided to **make changes to their homes to improve online work comfort**:

Additionally, I had to rearrange the space in my house so that I could conduct online classes in comfort and without any invasions of my privacy. [respondent 222, female, public HEI, 11–15 years of teaching experience]

I had to buy a desk and put it in my bedroom which was never supposed to be a working space. I am very displeased with that. [respondent 329, female, public HEI, 21–25 years of teaching experience]

As a result, **there is no clear distinction between the house and the workplace:**

The distinction between the workplace and my home is becoming more and more blurry and I am under an impression that I am constantly at work. [respondent 200, male, public HEI, 11–15 years of teaching experience]

Another problem that affects working conditions are the **badly arranged timetables**. This may stem from the fact that online classes are conducted while sitting, while during traditional classes it is possible to frequently change positions (sitting, standing, walking) which makes it easier to work over long teaching hours:

The timetables should be different. It is unacceptable to have e.g. 4 lectures in a row (each two hours long) with 5-minute breaks between them. [respondent 604, female, public HEI, 11–15 years of teaching experience]

One of the academic teachers also indicated that there are **more working hours as compared to traditional classes:**

> *There are many more hours of work when teaching online than there was in the traditional model.* [respondent 543, female, public HEI, more than 25 years of teaching experience]

During the pandemic the online work of academic teachers was made more difficult because of **the closure of several other institutions**. In particular, this affected parents as during some periods **schools, kindergartens and nurseries were closed**:

> *... The situation was worst in spring 2020 when schools, kindergartens and nurseries were closed. I am a parent of two small children and I had to look after them during my working hours. It was very difficult and I had to do some of my work during the night instead of resting and sleeping...* [respondent 200, male, public HEI, 11–15 years of teaching experience]

Both research and teaching were made more difficult because **libraries were closed**. Some of the publications, especially the more recent ones, are available in electronic formats. However, some research cannot be done without traditional books:

> *Suddenly we were cut off from libraries. How can we expect students to come prepared for classes when libraries and reading rooms are closed?* Not everything can be found on the Internet or in electronic publications... [respondent 200, male, public HEI, 11–15 years of teaching experience]

The primary workplaces of academic teachers, **their faculty buildings, were also temporarily closed.** This made it impossible to work directly with students which is indispensable in the case of some programmes:

> *It is possible to organize classes so that at least some of them are conducted in blended system, at least consultations for small groups of several students. The faculty building does not have to be completely closed. It seems that someone really wanted to save some money on electricity, toilet paper, water, cleaning, etc. For the last two semesters the average educational standard has been abysmal. It is weird that the rector and university authorities have nothing to say about this. They submissively introduce restrictions (that are beneficial to them) as they are told by the government and they have nothing to say.* [respondent 168, male, public HEI, 16–20 years of teaching experience]

When it comes to working conditions, academic teachers also mention that there are **problems with students experiencing technical issues and with their limited participation in classes.** This affects the quality of classes:

Even though I work in good technical conditions, there is a lot of problems on the students' side. They often use smartphones, they have slow and unstable Internet connections. [respondent 675, female, public HEI, more than 25 years of teaching experience]

The biggest downside of online classes is the lack of contact with the group. You cannot see their reactions, there is no personal bond, the students are not as active in asking questions and making comments (in a lecture room the speaker is anonymous, during online lectures the speaker is immediately identifiable). I still haven't answered the following question: should the students have their cameras on at all times (to confirm that they are present) or is this not necessary? [respondent 578, male, public HEI, more than 25 years of teaching experience]

Difficult working conditions combined with **lack of support from the employer and increasing demands** may cause discomfort in academic teachers:

I was not offered any support at my workplace. No one was interested how I will do. I was supposed to make the switch and that was it. Still, the university authorities were very strict when checking the results of my work (this also included my research – publications). This was disheartening. [respondent 251, female, public HEI, more than 25 years of teaching experience]

However, for some the experience was very different. Positive comments regarding broadly defined working conditions during the pandemic most often mention the **support provided by superiors**:

I have a very understanding and supportive boss. I think it is thanks to his attitude, understanding and help that none of us at the department has gone crazy (at least so far). [respondent 721, female, public HEI, 11–15 years of teaching experience]

We got a lot of support from our university and our faculty – the actions were effective and appropriate to the situation. [respondent 554, female, public HEI, 11–15 years of teaching experience]

Also, **some logistical benefits** that came from switching to online teaching were noticed:

For logistical reasons (e.g. commuting, effectively using free time between classes) online teaching is very convenient. [respondent 128, male, public HEI, 21–25 years of teaching experience]

4.4. Evaluation of organisation of classes and ways of conducting online classes

The organisation of classes and ways of conducting classes changed significantly in the period analysed. The switch from classes conducted face-to-face with stu-

dents to online classes conducted using various communication platforms was a huge challenge for all the parties involved. In the second half of the 2019/2020 summer semester and in the 2020/2021 winter semester it was permitted to conduct some or all of the classes at the HEI premises4. This applied primarily to classes that required access to laboratory infrastructure. The organisation of classes was also changed: because a lot of time was needed to adapt to new ways of conducting classes, the semester was extended at the expense of vacation and in some cases the commencement of the next academic year was postponed. The ordinances by the rectors of individual HEIs in this respect were dependant on the guidelines provided to them by the national government.

Academic teachers were asked to evaluate the organisation of classes at their HEI in the 2019/2020 summer semester and in the 2020/2021 winter semester on a scale of 1 to 10, where 1 means "very bad" and 10 means "very good". Fig. 41 shows that positive opinions were more frequent than negative. This applied to both the winter semester and the summer semester during which online teaching was used. It should be noted that the organisation of classes in the 2020/2021 winter semester received higher scores – a score between 7 and 10 was given by 79.2% of respondents. By comparison, the organisation of classes in the 2019/2020 summer semester received the highest score from 55.8% of academic teachers.

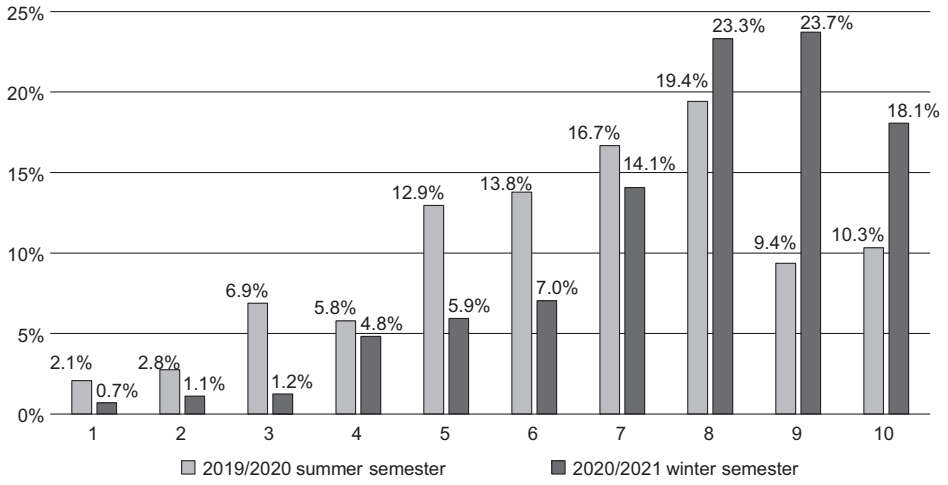

Fig. 41. Evaluation of the organisation of classes in the 2019/2020 summer semester and in the 2020/2021 winter semester (1 – very bad, 10 – very good)
Source: own work based on results of the survey.

The 2020/2021 winter semester might have received higher scores because HEIs gathered some experience in organising online classes and the ways of conducting online classes have been verified. The vacation period presented a chance to prepare for the challenges of online teaching. Detailed information on the evaluation of organisation of classes at public and private HEIs can be found in Table 9.

Table 9. Evaluation of the organisation of classes in the 2019/2020 summer semester and in the 2020/2021 winter semester, by type of higher education institution

Evaluation of the organisation of classes	2019/2020 summer semester		2020/2021 winter semester	
	public HEIs	private HEIs	public HEIs	private HEIs
1 – very bad	2.4%	0.0%	0.8%	0.0%
2	3.0%	0.0%	1.1%	0.0%
3	7.7%	1.1%	1.3%	0.0%
4	6.4%	1.1%	4.8%	3.4%
5	13.5%	6.9%	6.4%	2.3%
6	13.9%	12.6%	7.1%	6.9%
7	16.5%	18.4%	15.4%	4.6%
8	18.9%	25.3%	22.6%	31.0%
9	8.8%	13.8%	23.6%	24.1%
10 – very good	8.8%	20.7%	17.0%	27.6%

Source: own work based on results of the survey.

The vast majority of respondents received guidelines regarding organisation of classes and ways of conducting online classes, and most of them received these guidelines before classes commenced (44.1%), whereas slightly fewer teachers received them after the classes commenced (40.5%). Guidelines were not provided to 9.8% of the academic teachers surveyed and 5.6% of respondents do not recall when they were given guidelines. Academic teachers working at private HEIs were more satisfied with the transmission of guidelines to employees, which is confirmed by the results provided in Fig. 42.

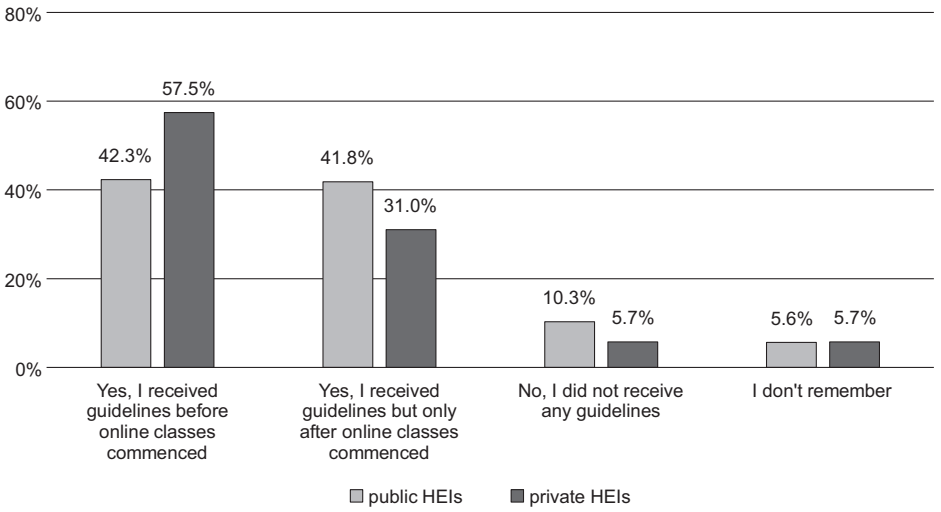

Fig. 42. Breakdown of academic teachers' satisfaction with the support provided by higher education institutions in the organisation of online classes
Source: own work based on results of the survey.

Academic teachers could also provide their own comments regarding organisation and ways of conducting online classes – 17.1% chose to do so. The majority of comments were negative and indicated that there were a number of problems resulting from the organisation of classes and ways of conducting online classes.

The key problem which was the root cause of other issues was the **delay in publishing the organisation of classes and ways of conducting online classes:**

> *Spring was a tragic period. Over the first two weeks we had no guidelines. With a teaching load of 5 student groups the backlog kept growing at an astronomical pace. This caused chaos. I did not want this backlog to grow further so I started teaching on my own and I introduced my own criteria for passing my class. Additionally, in mid May (as far as I remember) criteria for passing classes were finally developed, which resulted in even greater confusion. All students were told that they were supposed to write papers. The students were terrified and started negotiating with their teachers to reduce the requirements for this simple reason: reference materials were not available and there was very little time to do the work.* [respondent 224, male, public HEI, more than 25 years of teaching experience]

> *I think that in the 2019/2020 summer semester the reactions of the rector's office were late and when they finally reacted they focused on paperwork that needed to be done 'by yesterday'. The guidelines for online work were not issued on time, there were no courses in online teaching that would meet the current needs. I learned everything I know about MS Teams and O365 on my own by trial and error. Additionally, the decisions and guidelines provided by the rector's office blocked/overruled the decisions already made by the dean of the faculty which I believe were correct in the first place.* [respondent 305, female, public HEI, 16–20 years of teaching experience]

The switch to online teaching was also related to **considerable technical difficulties which were caused by using online communication platforms for teaching. The lack of appropriate training in using them was visible.** This was the case especially in the 2019/2020 summer semester:

> *The first semester of online teaching was very difficult when it comes to organisation. This was especially true for those who were unprepared to conduct online classes. Since I completed several courses in using Moodle before the pandemic and I have already been using Moodle to communicate with my students, making the switch did not come as a shock and it was easier for me to organise classes on Moodle and use tests and assignments on Moodle. Unfortunately not everyone learned to use it before the pandemic and there was chaos. In my opinion it would have been better to provide compulsory training in using Moodle, Zoom and MS Teams in the first few weeks after the universities were closed. Many teachers had no idea how to use them and were feeling their way around these platforms, often unable to properly conduct classes due to their lack of technical skills. (...)* [respondent 382, female, public HEI, 16–20 years of teaching experience]

Academic teachers pointed out that **they were not asked about their opinion on the way of conducting classes:**

I would expect my university to: – ask the teachers about the division of teaching hours into online/offline laboratory exercises and not forcing a division upon them; – refrain from making top-down decisions on switching from offline to online classes without consulting this with teachers conducting these classes; – create reasonable plans for conducting offline classes in the upcoming semester; – make decisions in advance, not during the weekend so that they can come into force on Monday; – start a dialogue with the academic community on introducing offline classes (laboratory exercises) with the rector refraining from making centralised decisions in this respect. During discussions with my colleagues I heard from many of them that they would be willing to conduct part of their classes in the winter semester face-to-face with students, while maintaining stricter safety standards (e.g. smaller student groups) and only with those who would participate voluntarily (students and teachers who would not be able to participate due to health or personal reasons could make up missed classes at a later time). At the moment we have a growing backlog when it comes to face-to-face classes (or we conduct them online, which is pure fiction when it comes to e.g. laboratory exercises because all you can do is tests, health and safety training and discuss experiment results, trying to do anything else is absurd). [respondent 84, female, public HEI, fewer than 5 years of teaching experience]

Delayed information on methods for conducting examinations were a source of significant problems:

*Preparations for the examination session were delayed – we received guidelines too late, there were also too few substantial courses for teachers on online testing and evaluation, and there were technical problems – Moodle crashing etc. It took us 3 months to prepare for conducting tests – this was a very long period and we worked by trial and error. [*respondent 382, female, public HEI, 16–20 years of teaching experience]

Some remarks were made regarding **using the present situation to become "lazy" when teaching:**

Unfortunately, in the 19/20 summer semester many teachers used the pandemic and the suspension of face-to-face classes as an excuse for being lazy (and some were simply unable to work effectively due to their lack of digital competences or their 'computer phobia' etc.) [respondent 67, male, public HEI, 21–25 years of teaching experience]

It is possible that because some teachers dismissed online teaching in the spring of 2020, **strict guidelines for conducting classes in real-time were enforced:**

Because many teachers dismissed online teaching in the 2019/2020 semester and approached online teaching with mistrust, strict rules were introduced in the 2020/2021 which made our work more difficult. For example, I had to conduct the same class three times in a row, even

though students from other groups had free time and I could have gathered all of them at the same time and use the available six hours in a much more creative way instead of repeating everything three times. [respondent 560, female, unknown HEI, 16–20 years of teaching experience]

Some teachers interpreted the **introduction of top-down regulations as an attempt to control them:**

I didn't like the fact that in the 2020/2021 winter semester we were ordered by (HEI name) to conduct 100% of classes in real time. In the previous semester (2019/2020 summer semester) I felt that the authorities trusted us more (we could decide on the form of classes and how to conduct them). Now I feel that there is this need to control the teachers and force them to use the solutions developed higher-up. [respondent 98, female, public HEI, 11–15 years of teaching experience]

I think that the rules for the organisation of classes in the summer semester were too imprecise. As a result some of the teachers approached their teaching duties in a less effective, 'asynchronous', way (which often meant sending 'guidelines' and 'reading lists' to their students). It is good that in the winter semester this has been regulated and everyone is now obligated to conduct their classes in a 'synchronous' way. [respondent 199, female, public HEI, 16–20 years of teaching experience]

In the context of introducing the requirement to conduct classes in real-time, another respondent **noted the lack of understanding of the underlying meaning of online teaching:**

In the academic year 20/21 our university made the decision to move all classes conducted face-to-face with students to the Teams platform. In my understanding this means that I have to conduct a meeting with the students (following a timetable identical to that for traditional classes). In my opinion this a complete distortion of the online teaching concept, which involves more than simply moving traditional classes to the virtual world. Such approach is very ineffective, boring and hard to withstand for both teachers and students. For me this is very demotivating and discourages me from boldly experimenting with various online teaching methods. [respondent 67, male, public HEI, 21–25 years of teaching experience]

Some noticed that the switch to online work sometimes resulted in **teachers not conducting their assigned classes:**

Even though we had the opportunity to prepare for conducting online classes in the 2020/2021 semester (it was likely that this will be needed), to my surprise there are still some employees in my organisational unit who do not conduct their classes at all or do not do it in real time. These are teachers with postdoctoral degrees (dr hab.) who are well versed in using computers and have access to the required equipment. The persons responsible for assigning classes did whatever they could to find a solution to this situation. [respondent 115, female, public HEI, 11–15 years of teaching experience]

The organisation of classes and ways of conducting online classes also affects the teaching process. Respondents indicate that **conducting classes online prevents from fully completing the course syllabus.** The following comment provides an example of this:

> *(...) Unfortunately I have noticed that I am not able to follow my syllabus, especially when it comes to conducting classes. Some of the students are passive during classes and I have no way to make them participate more actively.* [respondent 278, male, public HEI, more than 25 years of teaching experience]

There are no strictly specified requirements applying to the students which would allow them to prepare themselves for classes and lectures:

> *A university should present the students with technical requirements and inform them how their attendance will be enforced as was the case in primary and secondary schools.* [respondent 652, female, public HEI, 21–25 years of teaching experience]

There is also a problem with excessively large student groups which make it difficult to conduct classes in a more familiar setting:

> *The number of students in conversation class groups in the 2020/2021 semester is too high (e.g. 40 people). This turns these classes into lectures.* [respondent 330, female, public HEI, fewer than 5 years of teaching experience]

When it comes to student groups **there was also a technical issue related to creating groups in MS Teams** as mentioned in the following comment:

> *I had to manually add a huge number of student names to the MS Teams group so that they could participate in my class. At other universities the teachers had their groups prepared by someone else.* [respondent 635, female, public HEI, more than 25 years of teaching experience]

Considerable problems with time tables are also mentioned. These include overlapping classes or accumulation of classes which makes it difficult for teachers to work and for students to learn:

> *Organisational problems are caused mostly by the methods used to create timetables. The classes overlap (which also happened in the previous years), but in the current conditions it is difficult to arrange moving them to another time with the students. It is weird because MS Teams has quite good tools for creating timetables.* [respondent 274, male, public HEI, 11–15 years of teaching experience]

> *Having huge blocks of classes which are several hours long and sometimes end after 8 p.m. makes it difficult to implement your teaching program and makes it hard for the students*

to understand what you are talking about. [respondent 129, male, public HEI, 11–15 years of teaching experience]

With the administrative employees working remotely, it is it harder to deal with ongoing basic issues which need to be resolved for teaching to continue:

The biggest problem at the university is the functioning of some of its administrative structures. The administrative employees worked partially or fully from home which meant that some of them, who should be providing support to teachers and researchers, were actually unavailable and there was no way of reaching them. This does not apply to all of them but only some. [respondent 200, male, public HEI, 11–15 years of teaching experience]

Some employees noticed **increased bureaucracy during the pandemic:**

I think the bureaucratic demand to document conducted classes (tables, summaries etc.) is absurd. When teaching face-to-face the authorities believe us when we tell them we have conducted our classes. So why do they think that when teaching online we have become swindlers and frauds? The heads of faculties can easily review the classes conducted and they will be able to detect any problems immediately. The lack of trust in teachers in these difficult times makes us even more frustrated. [respondent 254, female, public HEI, more than 25 years of teaching experience]

As the situation developed, the organisation improved. Unfortunately, the teachers are forced to provide a lot of different reports. I feel that I am under greater surveillance than during traditional classes. One of the most absurd requirements was the need to provide separate statistical information on examination grades when the entire documentation is already available in the USOS system. We will probably also be asked to write additional reports from diploma examinations which will contain information identical to those we already provided in the protocols. As far as I know this is not a requirement imposed by the university but it is a result of individual overzealousness of some decision-makers in our faculty. [respondent 1, female, public HEI, 5–10 years of teaching experience]

There appeared new (very complex) organisational procedures for substitutions and notifying about absences. I believe that this does not improve organisation. [respondent 80, female, public HEI, fewer than 5 years of teaching experience]

The introduction of electronic reporting is an improvement, especially in teaching:

I have a feeling that in the previous semester we had some organisational chaos (which is, to a large degree, understandable due to the sudden changes we were forced to make because of the pandemic). It is good that in the current academic year we were able to introduce some important changes, e.g. electronic signatures on diploma examination protocols (we no longer need to bring printed and signed documents to the dean's office). [respondent 400, female, public HEI, 21–25 years of teaching experience]

The way of conducting classes is considered a source of additional psychological and physical load on academic teachers:

> *The university authorities don't do much to relieve employees (e.g. in addition to classes there is a huge number of various online meetings etc.). They are not interested in their psychological condition and the impact of constantly sitting in front of a computer and being available online has on the teachers' psychological and physical health.* [respondent 98, female, public HEI, 11–15 years of teaching experience]

4.5. The ability to reconcile online work and everyday life

Online work has profoundly changed the lives of academic teachers. Working from home may result in the lack of delineation between work and personal life. Performing personal and professional activities in the same limited space may result in loosing separation between those two aspects of life. Therefore, academic teachers were asked to evaluate their ability to reconcile online work and everyday life. The evaluation was performed on a scale of 1 to 10, where 1 means "very bad" and 10 means "very good". Figure 43 shows that this skill has been rated quite highly. Score between 7 and 10 amounted to 74.9% of all responses provided. The highest score, 10, was given by 24.5% of teachers.

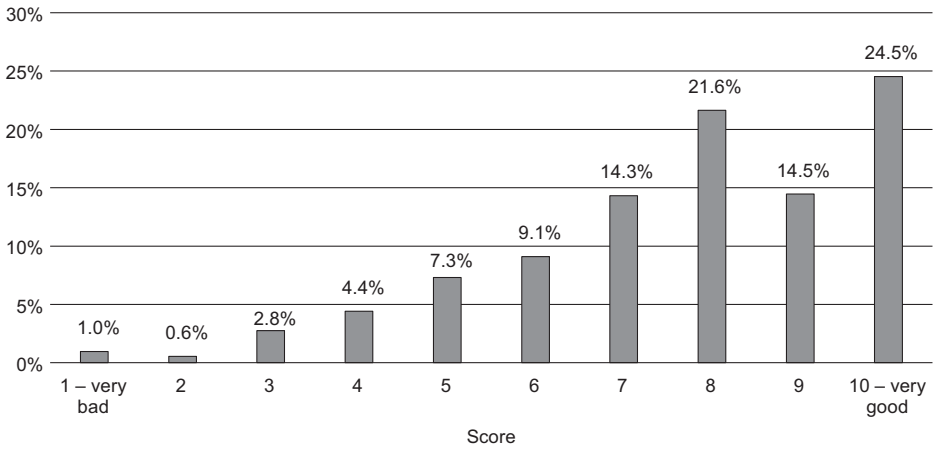

Fig. 43. Breakdown of scores assigned by academic teachers to their ability to reconcile online work and everyday life (1 – very bad, 10 – very good)
Source: own work based on results of the survey.

When evaluating the ability to reconcile online work and everyday life we checked for correlation between gender and age and teaching experience. The results are listed in Table 10. In general, older academic teachers with greater teaching experience assigned higher scores their ability to maintain balance between work and personal life when working online. When considering gender,

both older women and older men assigned higher scores to their work life balance. There is no correlation between teaching experience and gender.

Table 10. The ability to reconcile online work and everyday life: correlation between gender and age and teaching experience

Sex	Characteristic	rho	p
All	age	0.135	0.0004
	teaching experience	0.085	0.0248
Women	age	0.108	0.0309
	teaching experience	0.085	0.0906
Men	age	0.158	0.0061
	teaching experience	0.088	0.1304

Source: own work based on results of the survey.

Another important issue that affects the attitudes of academic teachers during the pandemic is the time devoted to various work related activities: teaching, research and organisational work. The respondents compared the time devoted to work before the pandemic and during the pandemic (Fig. 44). During the pandemic work takes "more" time in the case of 57.6% of respondents, while 20.9% said that it takes "rather more" time. Finally, 15.8% of teachers devote the same amount of time to work during the pandemic as they did before it. Very few respondents said that teaching during the pandemic takes less time. Among the academic teachers studied, almost 1/3 said that during the pandemic research takes as much of their time as it did before it. It is interesting to note the

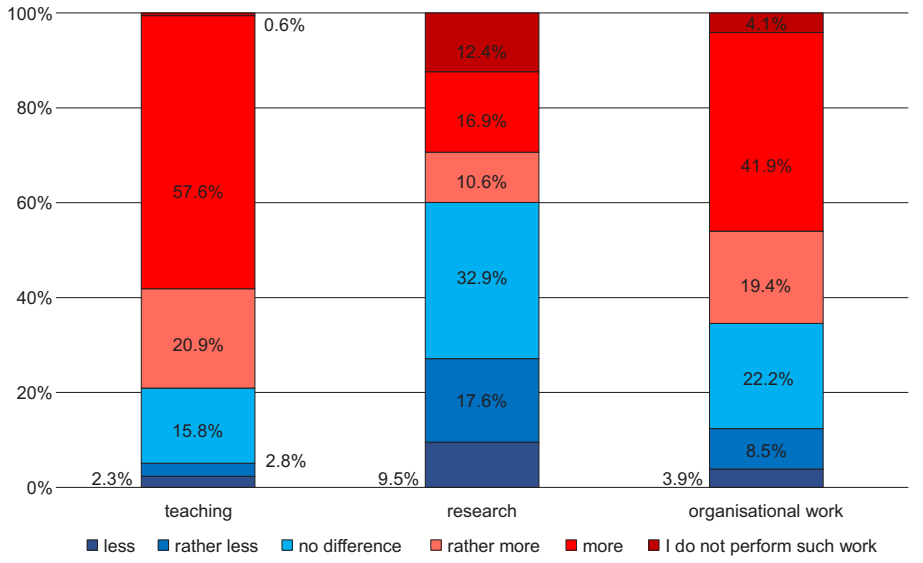

Fig. 44. Breakdown of responses to the question: How much time does your work take during the pandemic compared to the period before the pandemic?
Source: own work based on results of the survey.

similar number of those who devote more time to research (aggregated "more" and "rather more" responses giving a total of 27.5%) and those who devote less time to research (aggregated "less" and "rather less" responses giving a total of 27.1%). It is worth noting that 12.4% of respondents do not do any research due to their teaching position. The respondents said that working in the new conditions resulted in the increase in time devoted to organisational matters. This was stated by 61.3% of teachers. Slightly more than 1/5 of respondents said that organisational work takes a similar amount of time to that before the pandemic and few said that it takes them less time than before.

When comparing the time devoted to work during the pandemic and before the pandemic we checked for correlation between gender and age and teaching experience. The results are presented in Table 11. In general, older persons and persons with more teaching experience (respondents in total, male and female) declared that they devote more time to teaching during the pandemic than they did before it. In the case of all respondents there was also a positive correlation between the time devoted to organisational work and teaching experience. It is also worth noting that females with more teaching experience devoted less time to research during the pandemic. In other cases no correlations were found.

Table 11. Time devoted to work during the pandemic and before the pandemic: correlation between gender and age and teaching experience

Sex	Type of work	Characteristic	rho	p
All	teaching	age	0.146164	0.000110
		teaching experience	0.151728	0.000059
	research	age	−0.030277	0.425494
		teaching experience	−0.066631	0.079194
	organisational work	age	−0.002192	0.954001
		teaching experience	0.006834	0.857271
Women	teaching	age	0.156858	0.001719
		teaching experience	0.133488	0.007738
	research	age	−0.086945	0.083598
		teaching experience	−0.143219	0.004245
	organisational work	age	0.021111	0.674962
		teaching experience	0.006904	0.890933
Men	teaching	age	0.167600	0.003712
		teaching experience	0.175591	0.002349
	research	age	0.017436	0.764372
		teaching experience	0.027793	0.632757
	organisational work	age	−0.017609	0.762098
		teaching experience	0.009610	0.868785

Source: own study based on the results of the survey.

Apart from time devoted to work during the pandemic, the evaluation of work completion timeliness is interesting (Fig. 45). In the case of all tasks of academic teachers the majority of respondents' opinions are positive. The greatest timeliness is shown in the case of teaching, while in the case of research it is lower. As many as 96.1% of respondents claim that they preform their tasks related to teaching students in a timely manner. On the other hand slightly more than half of respondents (50.2%) performs their research on time. Organisational work is performed on time by over 3/4 of respondents.

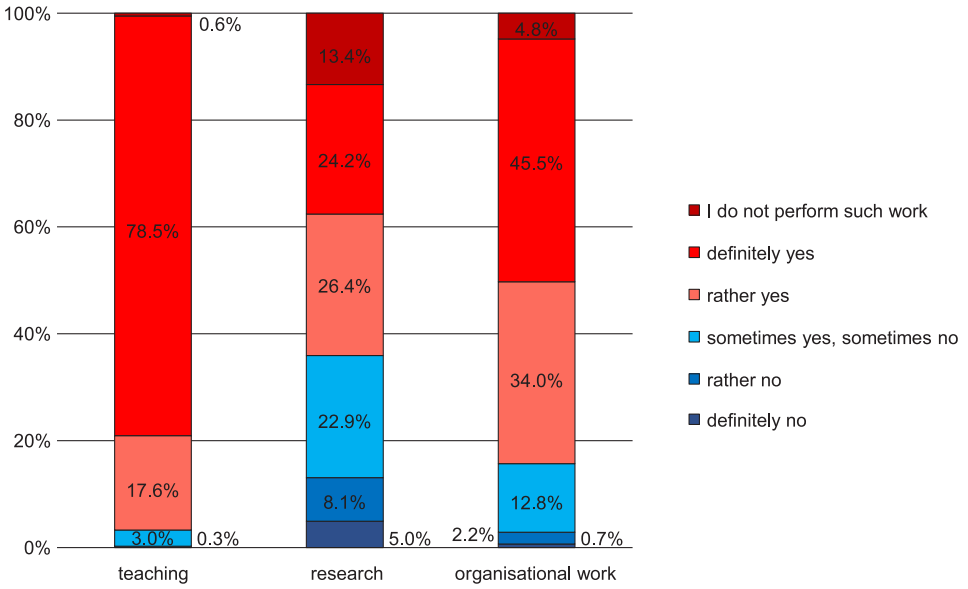

Fig. 45. Breakdown of responses to the question: Are you performing your work in a timely manner during the pandemic?
Source: own work based on results of the survey.

In the case of timeliness of work we checked for correlation between gender and age and teaching experience. The results are presented in Table 12. In general, older academic teachers declared the highest timeliness in performing their teaching tasks. When it comes to organisational work, teachers with the most teaching experience declared the greatest timeliness. Older females with more teaching experience declared the lowest timeliness of research. In other cases no correlations were found.

Academic teachers could also provide their own comments regarding their ability to reconcile work and everyday life during the pandemic – 17.8% of respondents decided to do so.

Table 12. Timeliness of work during the pandemic: correlation between gender and age and teaching experience

Sex	Type of work	Characteristic	rho	p
All	teaching	age	0.080867	0.033173
		teaching experience	0.074280	0.050466
	research	age	−0.027663	0.466546
		teaching experience	−0.058656	0.122375
	organisational work	age	0.062764	0.098271
		teaching experience	0.079426	0.036311
Women	teaching	age	0.080300	0.110156
		teaching experience	0.045435	0.366579
	research	age	−0.112617	0.024836
		teaching experience	−0.151772	0.002429
	organisational work	age	0.067865	0.177181
		teaching experience	0.095559	0.057126
Men	teaching	age	0.101328	0.080752
		teaching experience	0.112200	0.053009
	research	age	0.063074	0.277777
		teaching experience	0.057949	0.318771
	organisational work	age	0.064212	0.269177
		teaching experience	0.068708	0.237006

Source: own work based on results of the survey.

Working from home is **much more tiring and time consuming. It is difficult to differentiate between work time and free time while being at home:**

Working online from home is much more exhausting and tiring. It is a great cognitive load and it puts a strain on all your senses. It is difficult to focus and your eyes, spine hands and other parts of your body get tired. Concentration lapses and your mood degrades. There are those frustrating aspects of technology and the constant balancing act between household duties and university work. There are no clear boundaries between home and work. Work and family life overlap in space and in time. It is impossible to live an active life, we are isolated, other household members are present all the time and there is nowhere you can tell them to go during your classes. The general mood is very bad, also because of the fear of the virus and a real threat of you or your family members dying. This isn't good for research or organisational work. My concentration over this period decreased significantly, my mood degraded. I feel exhausted and disheartened. [respondent 382, female, public HEI, 16–20 years of teaching experience]

*How much time does your work take during the pandemic compared to the period before the pandemic? * – teaching – considerably more; research – there is no time for it and there are a number of other obstacles; organisational work – most issues can be resolved using email, documents are accepted in digital form and it is a good thing, earlier it was impossible. 24. Are you performing your work in a timely manner during the pandemic? – I try to, but in the*

case of teaching, the number of classes and the need to prepare materials suitable for online teaching, as well as evaluating papers sent by my students, take a lot of time. When it comes to organisational work – there has been considerable improvement, a number of guidelines were changed or repealed. Organisational work is limited to minimum. Electronic documents are accepted and all meetings are held online. [respondent 649, female, public HEI, 11–15 years of teaching experience]

My work involves not only teaching but also participating in departmental or faculty meetings. I conduct some of my classes from the laboratory and some from my office at work. Currently, I do not work online from home apart from exceptional situations. I need to have a walk from time to time. The only problem is constantly moving tablets, cameras, pendrives and hard drives with data between locations. I also had to upgrade my glasses to progressive lenses with office filters to better find my way around different tablets, phones, screens and monitors in the laboratory. Some people (partially) started using MS Teams chat for sending mail and communications. Another thing trying to steal your time! The university email system if flooded with messages on flashlights, artificial light, pastes and creams and it is driving me crazy! In need about 10 minutes each day to remove spam. Do I have the skills to reconcile both forms of activity? Judging by the fact that I am doing quite well so far – yes. But I have to, there is no other way. It is stressful: you not only have to know what to do, but actually to do it, and with this I am left on my own. [respondent 278, male, public HEI, more than 25 years of teaching experience]

It is true that when working from home you lose the distinction between work and free time. Very often we keep working until late in the evening. The upside is that we can control our own working time and breaks. [respondent 673, female, public HEI, 21–25 years of teaching experience]

Some assume that we are available online throughout the entire day. As a result meetings are sometimes organised without specifying a time limit and often in the evenings. When faced with such situation it is difficult to separate professional life and private life. [respondent 539, female, public HEI, 16–20 years of teaching experience]

The increase in time devoted to teaching and organisational work came at the expense of research. Respondents specifically noted the increased number of meetings, which are also longer than they used to be:

My situation is optimal as I live alone and I no longer have 'family obligations'. The increase in teaching and organisational work comes at the expense of my research. I have less time and strength for it, as well as less will to do it, because how long can you sit in front of a computer?! Preparing online lectures or classes takes much more time than preparing traditional lectures (imagine preparing some exercises using maps!). However the organisational duties are the worst! It is widely believed that since everyone is at home, sitting in a comfortable chair the meeting / committee session / assembly / defence etc. can last for hours. And they do! What is worse, the frequency of such meetings has also increased multiple times. No one would dare hold 4 face-to-face meetings on the same subject, but when they are held online this is the

norm. I try to fight against this, but to no avail. [respondent 254, female, public HEI, more than 25 years of teaching experience]

Another respondent also noticed **the increase in time devoted to teaching, but justifies this with the occurrence of numerous problems** including: verification of students' actual attendance, technical issues and students' personal issues. **The timeliness of research depends on publishing agencies which experience a lot of delays:**

Why does teaching take more time? The lack of direct contact with the group makes it much more difficult to verify if the students are actually participating in classes, makes it more time consuming to explain a given problem and prevents active participation of all group members because of technical issues as well as personality traits and other factors (e.g. the actual location of the student). When it comes to research: the timeliness depends not only on the researcher but also on e.g. publishing agencies, which do not fulfil their obligations on time and justify this with the pandemic. [respondent 154, female, public HEI, 16–20 years of teaching experience]

The need to focus on a new form of teaching, together with the excess of organisational issues caused difficulties in completing research projects:

Because I have to devote more hours to teaching, I don't have time for organisational matters, compiling protocols or other administrative documents and my research is done 'after hours'. [respondent 665, female, public HEI, fewer than 5 years of teaching experience]

Working online forced me to review my teaching methods and quickly familiarise myself with online teaching tools (and constantly update this knowledge). This came at the expense of my research. [respondent 161, female, public HEI, 16–20 years of teaching experience]

There are too many tables and reports to prepare and it takes the time I could devote to research. This is especially true if someone works at more than one university. There is no time for research because of all the bureaucracy. [respondent 607, female, public HEI, more than 25 years of teaching experience]

Teaching is a much greater challenge than it used to and it is more time consuming. To maintain a high level of teaching I have to sacrifice the time I would otherwise devote to research. [respondent 364, female, public HEI, 5–10 years of teaching experience]

Combining work, especially research, with taking care of children is very difficult especially when faced with lack of support:

You can try to reconcile teaching with taking care of small children, but doing research at home is impossible with kids around and without a nanny. It is a struggle: trying to work at night when the kids are asleep, going to the laboratory when your husband comes back from work, using two laptops at the same time –one for classes for your first-grader, the other for

your own classes and seminars. It is a very difficult time for mothers of small children and it has been lasting for so long that it is no longer a 'temporary situation' as we like to convince ourselves. [respondent 167, female, public HEI, 5–10 years of teaching experience]

The need to reconcile work and taking care of three children was very exhausting and strenuous (in the first part of the pandemic, 2019/2020 semester). My health deteriorated in the following summer (neuralgia and GI tract issues). The vacation period was not a time of convalescence and provide only limited rest. Because earlier I had to take care of my dependants, I was unfortunately forced to use this time for my research, otherwise I would not have been able to keep my deadlines. [respondent 170, female, public HEI, 11–15 years of teaching experience]

If you and your husband work online form home and your children have online classes and you have to prepare your classes, make dinner, attend all online meetings, help your children study (i.e. teach them things they do not learn at school [sic!]) and help them with the vast amounts of homework, you not only have no strength to do your research, you do not have the TIME! There is too much paperwork, reports, working groups, etc. at the university. [respondent 112, female, public HEI, 21–25 years of teaching experience]

Research requires concentration and the right conditions. When you have children who would normally go to school or kindergarten, but have to stay at home, it is very difficult. Even more so if your partner has to go to work at their workplace and cannot participate in everyday household duties when schools are closed. In my case this is a huge problem. :([respondent 115, female, public HEI, 11–15 years of teaching experience]

The number of my everyday tasks increased during the pandemic. For example my children have online classes and they are at home almost all the time. All family members are at home at all times, so you need to devote more time to cooking, cleaning, doing laundry, organising activities for the children (they are not allowed to go outside on their own before 4 p.m.) [respondent 194, female, public HEI, 21–25 years of teaching experience]

It was very difficult for me to work online from home because of my small child. Everything became easier when it became possible to work from your workplace where you had peace and quiet, although you still had to conduct classes online. :) Preparing online classes took more time than preparing face-to-face classes and as a result, there was less time for research. [respondent 710, female, public HEI, 5–10 years of teaching experience]

Another respondent claims that **academic teachers with small children are unable to meet the requirements set for them** and that it would be better to use a more individualised approach that takes into account family commitments, health problems etc.:

It would be good to have an individualised approach (e.g. more leeway for people with small children). I think that the 'standard' to which all employees/teachers must adapt is the life of people without family commitments, without health problems related to the pandemic, who

can fully devote themselves to their work, who have their entire days available for work (e.g. meetings are held late in the afternoon – for people with children who go to kindergarten – such as myself – it is nearly impossible to attend them). [respondent 98]

Much more time has to be devoted to grading students' papers submitted digitally, as well as communication and consultations with students using various channels of communication:

Teaching takes much more time. First of all grading papers – when they are in the digital format it takes longer. Other time consuming tasks include: perfecting instructions in Moodle courses and converting 100% of course materials; contacts with students who flood you with messages over different communication channels. The biggest problem are students who cannot find their way around their situation, fail to meet deadlines, do not submit papers, forget to sign them, do not know how to write emails. [respondent 582, female, public HEI, 5–10 years of teaching experience]

Conducting online classes requires changing presentations and exercises (adapting them for online teaching) and (at least in my case) requires devoting additional time to contacts with students, consultations, email exchanges and assigning additional exercises which cannot be completed online that I do not want to give up using even though I need to give written feedback when they are done. In summary, teaching online takes much more time than offline teaching. [respondent 600, female, private HEI, more than 25 years of teaching experience]

In practice, teaching is a 24/7 job. At any time, day or night, even during holidays students send questions to their teachers, even though the answers are available to them in class regulations, teaching materials etc. Additionally, they want immediate answers, often reminding the teacher about their expectations. [respondent 652, female, public HEI, 21–25 years of teaching experience]

Preparing for online classes and grading students' papers takes more time than in the normal conditions. As a result, I have less time for research, I usually work on the backlog in overtime, at the expense of my free time, which I used to devote to my family. In practice, I do not have free time anymore. [respondent 400]

Growing teaching requirements and increasing supervision over classes conducted has reduced the trust towards HEI authorities:

During the pandemic research was totally eclipsed by other duties. Because of the teaching process, with its often absurd forms of reporting and supervision, I do not have the time or will to do any research. Very often teachers feel that they are treated like cheaters, whose every step needs to be controlled to make sure they actually conduct online classes. Whereas before, when classes were conducted in the university building, there was no such supervision. During the pandemic I lost my trust in the university authorities. [respondent 376, male, unknown HEI, 21–25 years of teaching experience]

Another respondent noticed **difficulties in timely completion of research projects** caused by closing down of higher education institutions and administrative employees working partially from home. No solutions to this problem have been offered by higher education institutions or the ministry:

> *The prolonged closing of universities in the 2019/2020 summer semester and the present constant interruptions in normal work (quarantine, technical employees working partially from home etc.) caused a backlog in some of the projects that is hard to catch up on (e.g. in the case of the 'Doktorat Wdrożeniowy' Programme). Neither the university nor the Ministry of Science and Higher Education offered to extend these projects or to change the regulations for periodical evaluation of doctoral students, etc.* [respondent 85, male, public HEI, 21–25 years of teaching experience]

There are more working hours during the pandemic than before it, which **may be the cause of health problems and psychological problems:**

> *Working from 7 a.m. to 7 p.m. 5–6 days per week, with overlapping online meetings is an excessive burden for health and psychological wellbeing.* [respondent 62, male, public HEI, fewer than 5 years of teaching experience]

> *Reconciling online work with everyday chores most often means working on Saturdays and Sundays, usually at the expense of your family.* [respondent 493, male, public HEI, 21–25 years of teaching experience]

> *Total lack of physical work (lack of exercise), sitting in front of a computer 10–18 hours each day, +15 kg overweight as compared to February 2020 – horrible!* [respondent 594, male, private HEI, 21–25 years of teaching experience]

> *During the pandemic I work more. If I wanted to conduct my research I would have to work from 8 a.m. to 9 p.m.* [respondent 122, female, public HEI, 21–25 years of teaching experience]

There were also **some who found it easier to organise their work during the pandemic** than before it:

> *I am used to effective time management. I usually have to reconcile working at a company during the week with teaching on the weekends. This requires good management of my own time and time of others. The pandemic made it somewhat easier to conduct classes, although workshops require more direct contact.* [respondent 644, male, private HEI, fewer than 5 years of teaching experience]

Work got in the way of household duties:

Because I have to meet all the accumulating professional obligations related to online work, I don't have time for my household duties. [respondent 394, female, public HEI, 21–25 years of teaching experience]

However, some **did not have any problems in reconciling their work with everyday life and are willing to continue teaching online in the future:**

In general, working online is better for reconciling everyday life, teaching and research. After the pandemic I would like to conduct at least some of my classes online. [respondent 90, male, public HEI, 5–10 years of teaching experience]

While it is required to devote more time to work, the respondents acknowledge that it possible to better organise their time:

Although I had to become more engaged when working online, I can organise my time more effectively and fulfil my everyday obligations. [respondent 74, female, public HEI, 5–10 years of teaching experience]

4.6. Advantages and disadvantages of online work

Switching to online work during the pandemic resulted in significant changes in professional and personal/family life that could affect the attitudes of academic teachers. Clearly, the new type of work has its advantages and disadvantages. We asked the respondents to list them.

Figure 46 shows that the positive aspects of working online listed by academic teachers include mostly those that are related to their professional life. The advantages most often selected by teachers were: the fact that they no longer waste time for commuting to and from work, and that they improved their skills in online teaching. Both of these responses were selected by more than 3/4 of teachers. The third most frequent advantage was that the teachers no longer had to request a sick leave in the case of a minor illness and were able to work while they were recovering (almost 60%). In the case of face-to-face teaching this is not possible and taking a sick leave results in decreased remuneration for the period the teacher cannot conduct classes and the need to make up the missed classes with students. Working online also gives more freedom and flexibility in organising work, which was important to almost 40% of respondents. Thanks to switching to online teaching, some respondents have more time for research. Other aspects of professional life were selected less often. The most frequently selected advantages related to personal/family life included: saving money, ability to get up later, more time for personal and family life, reducing the number of stressful everyday situations. It is worth noting that 12.3% of academic teachers see no advantages of online work.

Figure 47 contains a summary of disadvantages of remote work during the pandemic selected by respondents. Seven out of the responses provided were

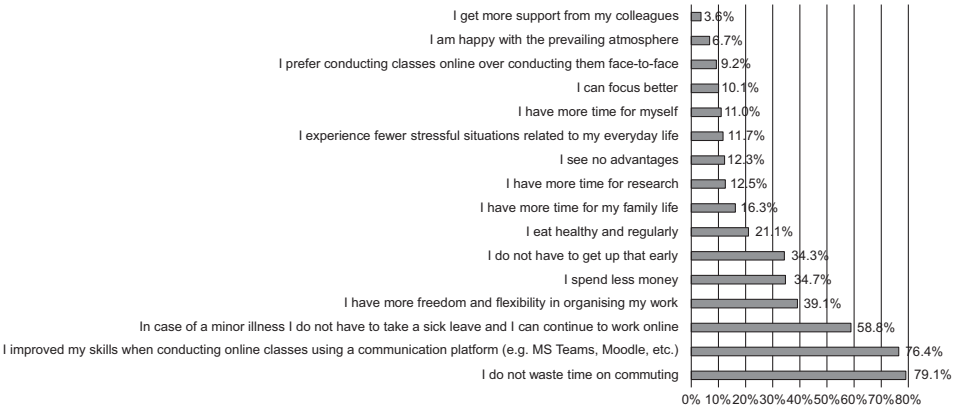

Fig. 46. Breakdown of responses to the question: In your opinion, what are the advantages of online work during the pandemic? Select all the answers that apply (multiple choice question)
Source: own work based on results of the survey.

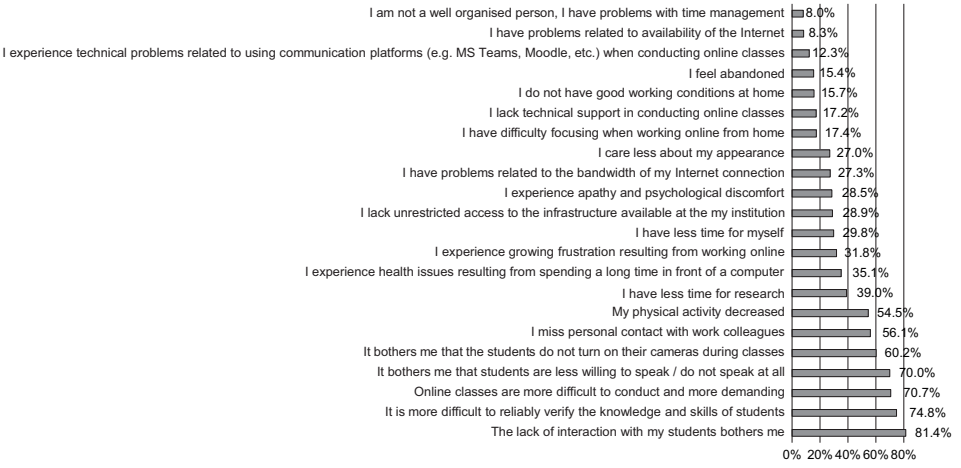

Fig. 47. Breakdown of responses to the question: In your opinion, what are the disadvantages of online work during the pandemic? Select all the answers that apply (multiple choice question)
Source: own work based on results of the survey.

selected by at least half of respondents. Among these, six that were selected most frequently were related to professional life. The teachers do not like the lack of interaction with their students as well as the fact that students are less willing to speak or do not speak at all, or that they do not turn on their cameras during classes. It is also more difficult to reliably verify the knowledge and skills acquired by students. Online classes are more difficult to conduct and more demanding. The limited contact with students escalates this problem further. For a considerable number of respondents the lack of contact with their colleagues

is also a disadvantage. Lack of personal interaction can be frustrating. The only disadvantage related to personal life that was selected by more than half of respondents was the decrease in physical activity.

Other disadvantages related to professional life selected frequently included: less time for research (almost 40% of respondents) and problems with gaining unrestricted access to the infrastructure provided by their faculty (almost 30% of respondents).

Almost 1/3 of respondents feel growing frustration resulting from working online. Almost as many respondents said that due to online work they have less time for themselves. A large group of respondents experienced health issues resulting from spending a long time in front of a computer (about 35%). Over 1/4 of respondents said that they experience apathy and psychological discomfort. A similarly large group of respondents said that they now care less about their appearance. Other responses selected by fewer respondents include: the sense of being abandoned (over 15%) and poor own time management (8%).

The respondents also listed a number of technical issues, including: insufficient Internet connection bandwidth (over 27%), lack of Internet connection (over 8%), lack of technical support in conducting online classes (over 17%), problems with operating communication platforms used in online teaching (over 12%).

Academic teachers could also provide their own comments regarding the advantages and disadvantages of working online during the pandemic – 16.1% chose to do so.

The pandemic brought with it a number of new possibilities in teaching e.g. making classes more interesting by **inviting foreign guests or grading tests easier using automatic grading tools,** etc.:

> *One advantage is the ability to invite foreign guests to classes. I can complete the teaching program faster, I work in the students' natural environment, and it is easier to adapt the material to individual needs. I am also not responsible for the physical safety of students. It is also easier to grade tests and assessments thanks to automatic grading. (...)* [respondent 533, female, public HEI, 16–20 years of teaching experience]

Online consultations make it possible for the students to be more active and interact with each other. As a result they learn more and acquire knowledge more effectively:

> *I conduct a kind of consultation classes. Before the pandemic, during my classes students were divided into project groups. Thanks to online teaching I was able to encourage students to look at all the projects, actively participate in classes and comment on the projects presented by other groups using the chat. In my opinion the students learned more and acquired knowledge more effectively.* [respondent 561, female, public HEI, 5–10 years of teaching experience]

Despite the difficult situation and numerous obstacles, one of the advantages of online work is its **positive influence on students**:

The biggest advantage of conducting online classes is that we were able to continue teaching and our positive influence on the development of the students (for which we are responsible) could continue. Initially it was very important to give the students a sense that 'the world is still running as usual', that we are still with them and, regardless of the difficult circumstances, we continue to work with honesty and commitment, adequately to the situation and that we are there for them, that they can count on us and that we continue to teach them. They trusted us and we upheld our end of the bargain by treating our duties with professionalism and honesty. Sometimes we devoted a lot of our own time, used our private space at home by adapting it for work and we bore the financial cost of professional teaching. This is how I understand the meaning of teaching online and why it is needed. [respondent 199, female, public HEI, 16–20 years of teaching experience]

Some teachers also noticed that students are more active during online classes. They also list **limited contacts with colleagues from their faculties and increased productivity of online meetings** as an additional advantage:

The effectiveness of online teaching depends mostly on the employees. In my case, students are fairly active during classes. I even think that they are more willing to speak than during face-to-face classes. I think that the lack of contact with other employees is an advantage. I consider myself an introvert and I do not like frequent meetings with other faculty members. The majority of those meetings (department or faculty meetings) are not productive and there is too much pointless talk. The meetings are more substantive when organised on Teams. [respondent 90, male, public HEI, 5–10 years of teaching experience]

Another respondent indicates that it was possible to overcome the initial downsides of online work using own work and convert them into advantages, e.g. better work optimisation. **By far the biggest advantage is the ability to work when slightly ill without putting others at risk of becoming ill as well:**

At the beginning of the pandemic there were many downsides of online work. In my opinion, now that I have learned to use communication platforms and had a faster Internet connection installed, working online is better optimised than working offline before the pandemic. There is also another advantage: you do not have to take a sick leave when you come down with a minor illness but you are still able to work. As a result, people are more healthy. I get ill a lot less frequently as compared to the period before the pandemic. Before the pandemic, people with minor illnesses (e.g. cold) brought their infections to work. I felt weak and became ill at least once a month. Currently, there is no such problem and I can work effectively, take part in online classes (seminars) and work remotely on my research etc. This is the biggest advantage of this whole pandemic situation and it compensates for the fact that I work more than 8 h per day. [respondent 212, female, public HEI, 5–10 years of teaching experience]

Some respondents **considered time savings and the ability to work while traveling** without generating a backlog in teaching an advantage:

(...) The biggest advantage are the time savings. I had to travel a lot to work on some projects. Before, each trip was 3 days long and now I can do the same work in 4 hours. Additionally, working online allows me to hold meetings even if I am travelling. Earlier, I had to reschedule them and make up classes. Now, this is no longer a problem. I can also spend time in my house in the countryside and enjoy rural life. All I need is an Internet connection. [respondent 696, male, public HEI, 21–25 years of teaching experience]

Evaluation during classes is easier thanks to a certain level of automation offered by dedicated communication platforms:

Automatic documentation of classes (checking attendance, grading assignments sent by students etc.) is an advantage. It makes it easier for us to e.g. give students their final scores. [respondent 553, male, public HEI, 5–10 years of teaching experience]

Working online **allows improving computer skills and gives the ability to clear a backlog of work:**

(...) The only advantage is that learning to use new computer technologies and (paradoxically) limiting contacts with people at work allowed me to settle some matters that have been going on for years. But who knows, maybe dehumanising the work place and the exchange of ideas is actually a double-edged sword? [respondent 278, male, public HEI, more than 25 years of teaching experience]

Some respondents said that **working online had a positive impact on their mental health:**

During the pandemic I was able to take a break from people, I experienced less tensions resulting from meetings, regained my balance, had time to meditate and this was a time of significantly less frustration and stress. [respondent 268, female, public HEI, 16–20 years of teaching experience]

Disadvantages of online work during the pandemic – additional information

One of the disadvantages of online teaching mentioned by respondents is **the decreased effectiveness of teaching:**

For me, the biggest problem is the decreased effectiveness of teaching. The quality of teaching was poor even before the pandemic, but now the situation is horrid. The student's involvement decreased DRAMATICALLY and it is very difficult to motivate them to work. [respondent 696, male, public HEI, 21–25 years of teaching experience]

I think that the rate at which the students acquire knowledge is decreasing. I am not able to present all the material I used to use (e.g. recordings from my own collection). Online teaching does not inspire me – speaking to my computer does not involve any creativity and I am not

even sure that everyone is listening. On the other hand, attendance is better (students sign in to the classes), but I don't know how involved the students are. I heard from one of my students that they clean their apartments or prepare meals during classes (not my classes). [respondent 514, female, public HEI, 16–20 years of teaching experience]

The **decrease in teaching effectiveness applies in particular to all classes involving practical skills:**

As I said already, I believe that we have wasted this year. Of course we will try to make up for it, in our own ways, and teach our students all the practical skills. You cannot learn skiing by watching videos of the best downhill skiers, and similarly, you are not able to teach your students skills and good habits. My head is spinning trying to follow what each of my students is doing. [respondent 412, male, public HEI, more than 25 years of teaching experience]

Additionally, teachers think that they are able to **cover less material during online classes than during traditional classes:**

The amount of material covered during laboratory exercises has decreased considerably because the time needed for interaction increased. [respondent 132, male, public HEI, 16–20 years of teaching experience]

One hour of face-to-face teaching is equal to about 1.5 hours of online classes (you can cover much less material during the same time), the students are not as focused. [respondent 586, female, private HEI, 21–25 years of teaching experience]

The lack of personal contact is the source of many problems. It is very difficult to check if what is being taught is understood and whether additional explanations are necessary. **In general, the respondents noticed the lack of feedback given by students to their teachers:**

In teaching there is no replacing personal contact and the 'master-apprentice' relationship. Online teaching deprives us (teachers and students) of non-verbal cues: we do not know if students already understand the material or if we should continue explaining, we do not know it they are interested, bored, etc. If the students and the teacher had the chance to meet in real life the classes go relatively well. However, in this semester I only have lectures with 1st year students of various B.A. programmes. It's like talking to a brick wall! [respondent 254, female, public HEI, more than 25 years of teaching experience]

There are also those among teachers who are more sociable and **miss contacts with other people** during online classes:

I am a sociable person, I miss meeting real people. This includes 'my' people and 'other' people. I feel tired with this uncertainty, lonely and even a little bored. I come to life when I see my

students (even if only on a computer screen). [respondent 251, female, public HEI, more than 25 years of teaching experience]

It is worth noting that the students' not using their cameras during assessments (even though it is a formal requirement) makes it more difficult to reliably verify their knowledge:

I did not select the answer 'It bothers me that the students do not turn on their cameras during classes' because it actually does not bother me. What bothers me, is that they do not turn on their cameras during assessments, which is required, saying that they do not have a camera or that their Internet connection is too slow. Some time ago this happened occasionally (it can always happen), but now it is commonplace. This can make it considerably more difficult to reliably verify students' knowledge, especially given the fact that for some time we have seen identical errors appearing in the papers of almost all students taking assessments. [respondent 434, male, public HEI, 5–10 years of teaching experience]

The thing that bothers me the most is the fact that the students do not have to have their cameras on, but we do. It seems almost like a form of discrimination. Another thing is that something always seems to 'not work correctly' every time students are asked to say something. Sometimes I feel this is pointless and that I am wasting my time. [respondent 607, female, private HEI, more than 25 years of teaching experience]

Other disadvantages listed by academic teachers include **limited ability to effectively work with students and the increased amount of time they need to devote to conducting online classes:**

The most effective way to conduct workshops developing soft skills is working 'live' in groups. Online classes are impoverished. They don't allow for practicing important competences to which the classes are devoted and make it more difficult for students to draw conclusions quickly or work in small groups. Student involvement is significantly limited. Additionally, as I said before: conducting online classes requires changing presentations and exercises (adapting them for online teaching) and (at least in my case) requires devoting additional time to contacts with students, consultations, email exchanges and assigning additional exercises which cannot be completed online that I do not want to give up using even though I need to give written feedback when they are done. In summary, teaching online takes much more time than offline teaching. [respondent 600, female, private HEI, more than 25 years of teaching experience]

I devote considerably more time to preparing tests – more variants than I used to. Additionally preparing tests for Moodle or in Office365 is very time consuming (because in Moodle I have to enter each question individually, and when preparing a test in Word using Office 365, I must prepare a separate file for each student). I am under the impression that my work is not effective. If the students don't participate actively in classes, do not turn on their cameras and only pretend that they are present, while at the same time doing something else (as some probably do), it is their choice. They are adults. However, I am very frustrated when later I hear

comments that e.g. the test was very difficult. Even if I ask if everything is clear a number of times, most often there is only silence. [respondent 193, female, public HEI, 5–10 years of teaching experience]

Research conducted by academic teachers as well as own work done by students can be much less effective during the pandemic which is caused mostly by the lack of access to library reading rooms and archives:

The effectiveness of my research dropped significantly. Especially the work on my post-doctoral dissertation suffered. I am unable to conduct my research without unlimited access to library reading rooms and archives. I feel stuck. Sitting alone in an almost empty building, especially in the afternoons and evenings when I have my classes, when the administrative employees have gone home is depressing and overwhelming. [respondent 73, female, public HEI, 5–10 years of teaching experience]

The lack of access to research infrastructure (libraries, archives) limits the students' ability to work on their own on assigned topics and it also limits research. [respondent 57, male, public HEI, 21–25 years of teaching experience]

The **difficulty in maintaining a healthy lifestyle and healthy working habits** is another disadvantage of working online during the pandemic:

I exercise regularly and take good care of myself (by practicing good eating habits). However, conducting all classes while sitting down, without the ability to move around, walk around the halls during the breaks, e.g. between 9.00 am and 1.30 pm non-stop, has affected my mood as well as my back and my eyesight. I lack 'occupational health'. We are constantly lagging behind. Conducting classes is very demanding for teachers and students, I don't have time for a snack or for a cup of tea. Our cameras are on 100% of the time, I can't even go to the toilet. Also, there is much more paperwork. [respondent 484, female, public HEI, 16–20 years of teaching experience]

Academic teachers also suffer from **health issues related to prolonged work in front of a computer:**

The negative effects of time-consuming online work are very serious (back problems, neuralgia, sciatica, femoral neuralgia etc., and limited mobility). Because of these issues I didn't get any rest during the summer. I was only able to devote 6 days to careful walks. The rest of the time I spent undergoing various treatments, and the rehabilitation (for which I pay) continues until this day. I do not see any considerable advantages of the situation. The 'benefit' of saving time on commutes is something I can willingly give up. [respondent 215, female, public HEI, more than 25 years of teaching experience]

5. The importance of completing higher education during the pandemic in the opinion graduates

Another research objective of the project was to identify the social and economic behaviours, and specifically the career steps, of higher education graduates during the pandemic. The first question in the survey pertained to whether the higher education courses they completed had prepared the respondents to integrate into the labour market more easily during the pandemic. Responses to this question varied (Fig. 48), with 50% of the graduates responding negatively and 37.3% positively. The remaining respondents were unable to give a clear answer to the question.

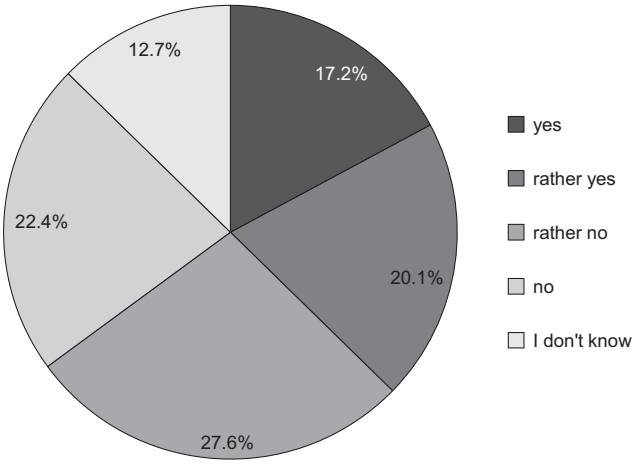

Fig. 48. Has the completion of higher education prepared you to integrate into the labour market more easily during the pandemic? – breakdown of responses
Source: own work based on results of the survey.

The second question asked the graduates whether completing higher education had helped them to better deal with the new realities of everyday life during the pandemic. The respondents could give more than one answer to the question (Fig. 49). The most frequently chosen answers were: "I can look at problems

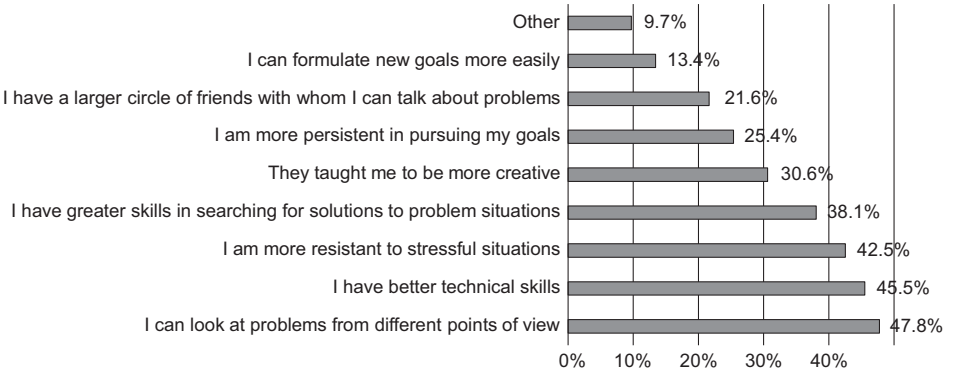

Fig. 49. Has the completion of higher education helped you in any way to better deal with the new realities of everyday life during the pandemic? (multiple-choice question) – breakdown of responses
Source: own work based on results of the survey.

from different perspectives" (47.8%), "I have better technical skills, including among others skills in computer techniques" (45.5%), "I am more resilient to stressful events" (42.5%), "I have improved my skills in searching for solutions to problems" (38.1%) and "It has made me more creative" (30.6%). Almost 10% of respondents chose the option "Other". Some of the most interesting responses were:

The higher education course I completed, interaction with many knowledgeable and educated people, various creative tasks and discussions during classes as well as the varied expectations of lecturers have helped me become more flexible. I have learned how to adapt to new conditions and demands faster, to better cope with stressful situations and to rise to challenges. Remote learning and the use of computer software and technologies have really helped me to integrate into the labour market and handle remote working. [respondent 22]

The course as such has not changed my situation during the pandemic. If anything, it has provided a certain framework for my experiences and helped me further explore the issues I find interesting. [respondent 72]

It has broadened my view on the world. [respondent 75]

It has given me more confidence. [respondent 57]

The third question asked the respondents whether they had considered pursuing new / postgraduate courses in a new online learning format (Fig. 50). The majority of responses were positive – a total of 56.7% of respondents intend to take up or consider taking up additional courses. The findings indicate that over half of the graduates surveyed have taken on new challenges and looked for opportunities to broaden their professional skills during the pandemic.

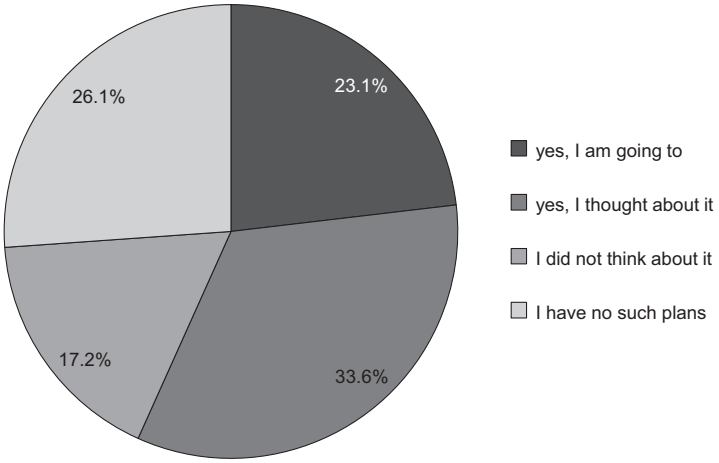

Fig. 50. Have you considered taking up new higher education courses and/or postgraduate courses in a new online learning format? – breakdown of responses
Source: own work based on results of the survey.

The following general conclusions can be drawn from the information collected in the survey completed by graduates: (1) over half of respondents reported that their higher education have not provided them with sufficient skills that could be useful in the labour market during the pandemic, (2) over half of respondents are considering taking up further courses, using the advantages of online learning formats, (3) however, the graduates surveyed appreciate their digital skills as well as certain soft skills gained during their time at HEI, which help them better adapt to the crisis conditions in the labour market.

6. Summary, conclusions and recommendations

The survey results presented cover a very wide range of issues related to the new and unexpected situation faced by students and academic teachers during the pandemic crisis and the resulting changes in the functioning of higher education institutions and social life. The research included a large sample of students and academic teachers from Wielkopolska region, which makes it possible to formulate some generalisations about these populations, as well as to point out some results that are characteristic of them or similar to those already obtained in other analyses and reports. In order to organise the wide spectrum of respondents' statements and to present a synthesising picture of the most important issues that emerge from the analysis, in this study we use the category of attitudes as an organising concept for the research procedure undertaken. In the introduction, we also assumed that the main attitude objects for students and academic teachers were the changes in the forms and methods of teaching, caused by the crisis related to the COVID-19 pandemic. The introduced changes were unexpected and concerned the transition to online forms of teaching and the suspension of classes held on the premises of HEIs. This new situation caused significant changes in the entire academic community regarding all three components of social attitudes, i.e., changes in the sphere of knowledge about new forms of online learning, changes in the perception and evaluation of these forms, as well as significant changes in the behavioural sphere of subjects (i.e. students and teachers) towards the newly adapted forms of education, introduced without any special methodological or technical preparation.

The results obtained are presented in Figures 51 and 52, separately for each of the two main stakeholders in the higher education system, i.e. students and academic teachers.

The results show that in terms of knowledge about new e-learning forms, fast training was needed, but most students managed to master new skills by themselves (66.7%) or in a group of friends (16.4%). In total, the group of students who mastered these skills was slightly larger in the case of private HEIs, i.e. 92%, as compared to public HEIs – 82.3%. In terms of the organisation of relevant training courses, public HEIs performed better, as 16.0% of students declared participation in this type of classes, compared to 6.7% in private ones. However, in the first months of the pandemic, it was students from private HEIs who rated the help in organising online education better (42.1% vs. 38.0%),

although in the subsequent semester this trend reversed and most students from public HEIs rated such help as good and very good (63.5%) The same could be observed in the majority of students from non-public ones (60.6%). On the other hand, the level of students' knowledge about the possibilities of using computer equipment at HEIs was quite poor, as more than half of them did not know such solutions existed, and in the case of private establishments, more than 40% of students could not use computer equipment at their respective HEIs at all. Thus, the results obtained suggest that higher education institutions should be more active in organising appropriate technical support and training for their students.

In terms of the evaluation of online classes, it should be emphasized that only 35.7% of the students surveyed approve of such classes, while more than half of them (i.e. 51.4%) prefer traditional forms of classes. Most respondents (74.4%) accept online lectures. The least preferred types of online classes are workshops, laboratory classes and field practices, with less than 10% of approving responses. Comparing the obtained results with the data from the already published survey reports, we can observe a similar level of high acceptance and scores of online learning among students of the Pedagogical University in Krakow (40% rated remote classes as good or very good), and even higher at the Warsaw University of Technology – only 39% of students expressed the opinion that they definitely preferred the traditional form of classroom-based lessons (Kraśniewski 2020). When it comes to students' acceptance of various forms of online learning, as shown by surveys conducted among students of the University of Zadar (BFUG 2020), only 57.43% of respondents prefer online lectures, which is a much lower result than in the case of students from Wielkopolska.

Another important aspect of the attitudes is the students' evaluation of the quality of online classes conducted by the academic staff – fewer than half of the students (44.5%) believe that teachers conducted online classes better as compared to traditional ones, and 37.1% did not notice any difference. These figures demonstrate that in the perception of students, teachers were able to cope with the new challenges of conducting online classes without compromising the quality of their teaching.

As a result of the shift towards online classes, there was also a change in the students' own workload. Approximately 65% of respondents confirmed such a correlation, i.e. they noticed an increase in the amount of assigned work to be done individually or in groups, while only 16.1% did not notice any differences compared to the period when traditional classes were held. Very similar results were obtained, among others, in a study published by the Bologna Follow-Up Group: over 50% of the students surveyed stated that their workload related to university courses was greater than that experienced when the classes were held on campuses (BFUG 2020). Likewise, over 66% of students at the University of Bonn (2020) indicated such an answer.

On the other hand, the evaluation of the technical possibilities of participating in online classes showed that almost 90% of respondents rated their computer equipment as sufficiently good, and only approx. 11% admitted that they did not have such equipment. A similar number of good and very good scores was

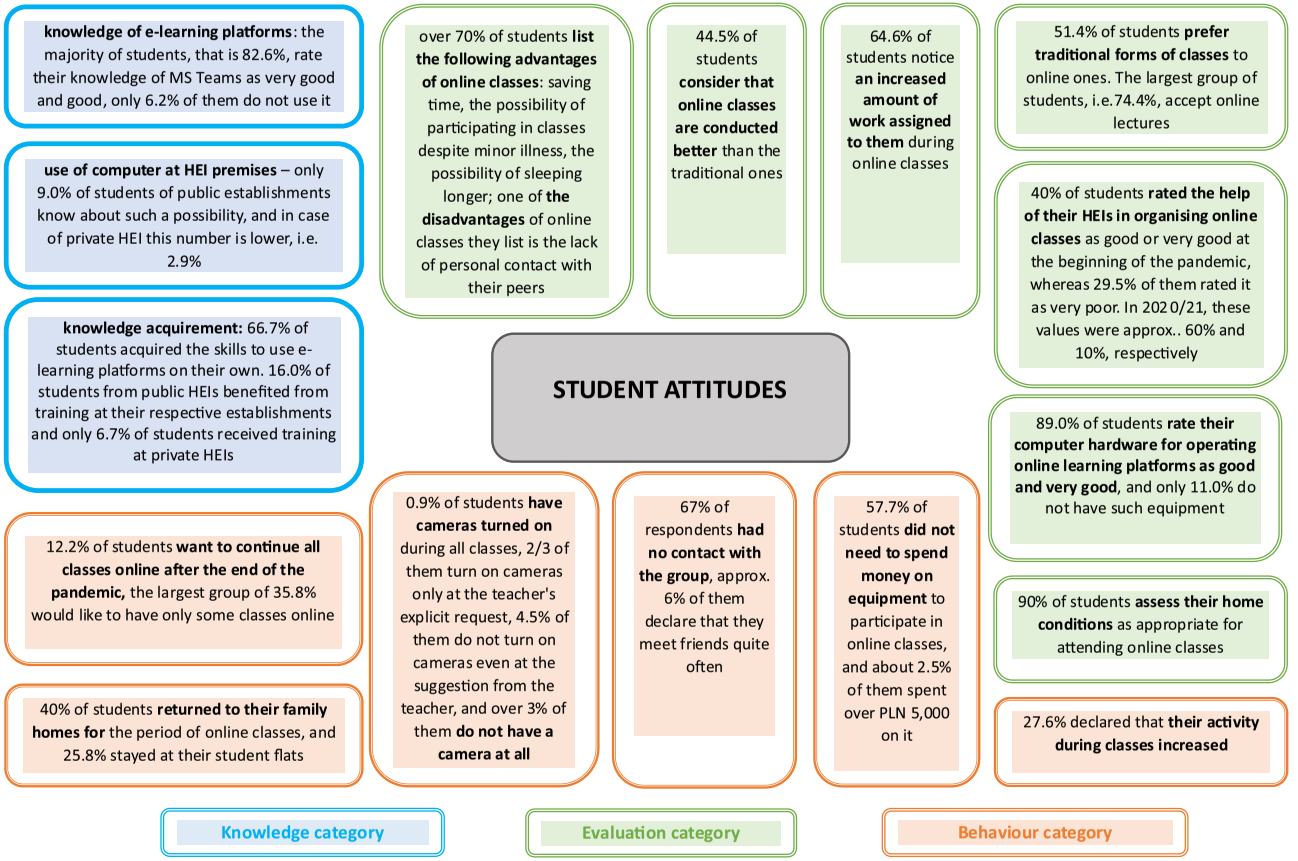

Fig. 51. The most important changes in the attitudes of students at HEIs in Wielkopolska region towards changes in academic life during the COVID-19 pandemic – a synthetic diagram
Source: authors' own work.

observed with regard to the home conditions for taking online classes – in this case, only every ninth respondent stated that these conditions were not adequate. The high ratings given to technical and home conditions for attending online classes are very similar to those in other reports, e.g. students at the Pedagogical University in Krakow also rated their technical and organisational conditions as very good, and even more of them, 97–98%, indicated that they had the right equipment. Slightly fewer, 80%, rated their home conditions as good for online classes. Thus, the presented results concerning attitude evaluation indicate that to a large extent students from Wielkopolska prefer traditional forms of classes over the online ones, but at the same time they have very good computer equipment and good home conditions for this type of classes. However, the situation described is not unique, as demonstrated by comparisons with e.g. students of the Pedagogical University in Krakow. Moreover, based on this result, in connection with a high degree of students' acceptance of the remote form of lectures, it is possible recommend that HEIs consider the possibility of transferring part of the lecture-type classes to e-learning platforms.

Students' participation in online classes can be analysed from a behavioural perspective – it should be noted that the respondents are quite reluctant to switch on the cameras, and some of them (approx. 3%) admit that they do not have a camera at all. Therefore, it can be concluded that such attitudes in the behavioural aspect (i.e. breaking eye contact with ease by switching off the camera) indicate a weakening of the relationship between the student – recipient of knowledge, and the teacher, i.e. deterioration of the traditional "master-student" relationship, very often referred to as one of the most effective conditions for studying (cf. Bartol 2020, Jemielniak 2020). Another manifestation of the behavioural aspect of attitudes is students' activity during classes – it would seem that students hidden behind the cameras would be bolder to participate in a discussion. It turned out, however, that only 27.6% of them declared that their activity increased. Gruszczyńska (2020) also draws attention to a similar situation, describing students' attitudes as those of "viewers", hidden behind their webcams, rather than active participants of classes. Furthermore, the time when online classes were conducted at HEIs during the pandemic also caused other phenomena in the behavioural sphere, such as the fairly widespread migration of students from academic centres to their family homes – 40% returned, and only 25.8% remained. These proportions differ from those presented in the American report titled "The Impact of COVID-19 on the University Student Experience" (2021), according to which 55% of students stayed on campuses or at student hostels, and 45% lived in their family homes (in case of Polish students approx. 62% of them stayed at their family homes). This situation also brought about a strong isolation of young people, who for the most part (approx. 67%) admitted that they had hardly any contacts with their group, which they actually considered the main disadvantage and inconvenience of this time (similar indications were obtained in many other studies, cf. Mazur 2021, The Impact of COVID-19 on the University Student Experience 2021, Długosz and Foryś 2020, Leżański and Sobolewska 2020). Based on the results presented, we recommend that higher

education institutions take care of their students in a more comprehensive way, taking into account not only the technical and organisational aspect of classes, but also other areas of student life – on campuses and in the free time, which could contribute to strengthening the ties within the academic community.

E-learning, despite some noticeable advantages for students (mainly in terms of saving time and commuting costs – this aspect is indicated not only by the results of our research, but also by many other authors, e.g. Długosz and Foryś 2020) also revealed significant shortcomings. As a result, only 12.2% of the students surveyed wanted to continue all classes remotely after the end of the pandemic, and the largest group of 35.8% was in favour of conducting only a part of classes online. Such attitudes and opinions are consistent with research results obtained by many other authors (e.g. Jemielniak 2020, Kraśniewski 2020, Piwowarska 2020), who in the conclusion of their studies quite clearly indicate that the best solution for online classes in the future is *blended learning*.

Summarising the analysis of the attitudes of academic teachers from HEIs in Wielkopolska in terms of knowledge about the attitude object (i.e. new forms of remote teaching), it is worth noting that the percentage of teachers conducting online classes prior to the pandemic is quite significant – in private HEIs it exceeds 36%, which proves that many teachers already had practical experience in conducting online classes and indicates that not all of them were equally surprised by new professional challenges in March 2020. Furthermore, a relatively large group of respondents, i.e. approx. 21%, had already completed online teaching trainings before the pandemic, and another 40% received training in the first stage of class suspension in HEI buildings. Such results should be assessed as relatively good and prove the great efforts of the academic staff to maintain the appropriate quality of education. The degree of respondents' knowledge of how to use e-learning platforms was also rated as very high, with MS Teams being the best known platform. Slightly more than half of respondents indicated the ability to use other platforms, including Moodle, Zoom or Google Meet. It is worth noting that quite similar results in terms of the experiences of academic teachers with e-learning before the pandemic were shown in studies carried out at the Pedagogical University in Krakow (2020). Studies at this university also pertained to the knowledge and use of e-learning platforms by academic teachers, indicating their good knowledge of MS Teams (84%), and to a small extent of other platforms, e.g. Moodle or Zoom. However, our results and those presented above stand in opposition to the findings by Pawlak (2020), who showed that the main platform used by teachers at the beginning of the pandemic period was Skype (96.1%), followed by Moodle, MS Teams and Zoom. The difference may, however, result from the time period analysed. The cited studies were conducted between April and May 2020, when HEIs had not yet recommended common solutions and teachers were searching for the most convenient and effective forms of teaching on their own. Another knowledge-related aspect analysed was the assessment of the information flow between HEI authorities and teachers. Sadly, in the first period after the announcement of the transition to online teaching, not all of the teachers received sufficient information from their employers concerning the

organisation and delivery of online classes. Although such a deficit was reported by a relatively small group of respondents (approx. 10%), this indicates that the first months brought a genuine surprise, which caused a certain amount of chaos in the activities of HEI authorities regarding the regulation of the teaching process and therefore aroused a lot of negative emotions, which was expressed by the respondents in their comments and statements in the survey. A similar phenomenon was also pointed out by M. Klimowicz in her report (2020). The respondents of the focus interviews she conducted indicated the lack of top-down guidelines and the shift of responsibility onto the teaching staff for the form of classes as characteristic aspects of the first stage of the pandemic. These negative experiences were also reflected in the respondents' opinions about the organisation of classes, which were much poorer for the 2020 summer semester than for the winter semester of the following academic year (see Fig. 52). An important result obtained is also the academic teachers' self-assessment of their own online teaching skills, which is quite high, as 83.6% of respondents indicated scores from 7 to 10 on a ten-point scale. For comparison, 66% of teachers from the Pedagogical University in Krakow assessed their competences for remote teaching as very good and good – this lower percentage is certainly also related to the study period, namely the summer semester, which for most teachers was the time of their first contact with e-learning. Therefore, the results obtained indicate a great potential of academic teachers in the field of achieved digital competences, and we recommend that this potential be used in the next semesters, when the pandemic restrictions have been lifted. This recommendation may be further supported by the respondents' high rating of their ability to reconcile online teaching with other responsibilities, including family life, despite the fact that this form of teaching requires more effort and time. According to over 70% of respondents, the main advantages of remote classes include saving time on commuting and strengthening their digital competences. These positive aspects also emerge in studies conducted in other academic centres (cf. Pawlak 2020, Klimowicz 2020, Długosz and Foryś 2020). This demonstrates a very pragmatic approach of most teachers to the situation. On the other hand, some negative aspects cannot be overlooked, and the lack of contact with students and direct interactions, as well as poor possibilities of verifying the learning outcomes are among the downsides most frequently indicated by the respondents. Therefore, the results obtained reflect the most important challenges in the e-learning process, which are difficult to solve and thus indicate that a complete transition to online forms of teaching would not meet the basic standards of higher education which is inextricably linked with direct contact between teachers and students. Nevertheless, the attitudes of academic teachers in the behavioural aspect indicate that the majority of them (almost two thirds) plan to continue e-learning in the future if the external conditions allow it. Certainly, such attitudes result, on the one hand, from the pragmatism of behaviour (over 90% of teachers conducted online classes without leaving their house), but also from significant investments in improving their digital competences, as well as obtaining appropriate computer equipment that meets the requirements for conducting online classes (e.g. 44.5% of them

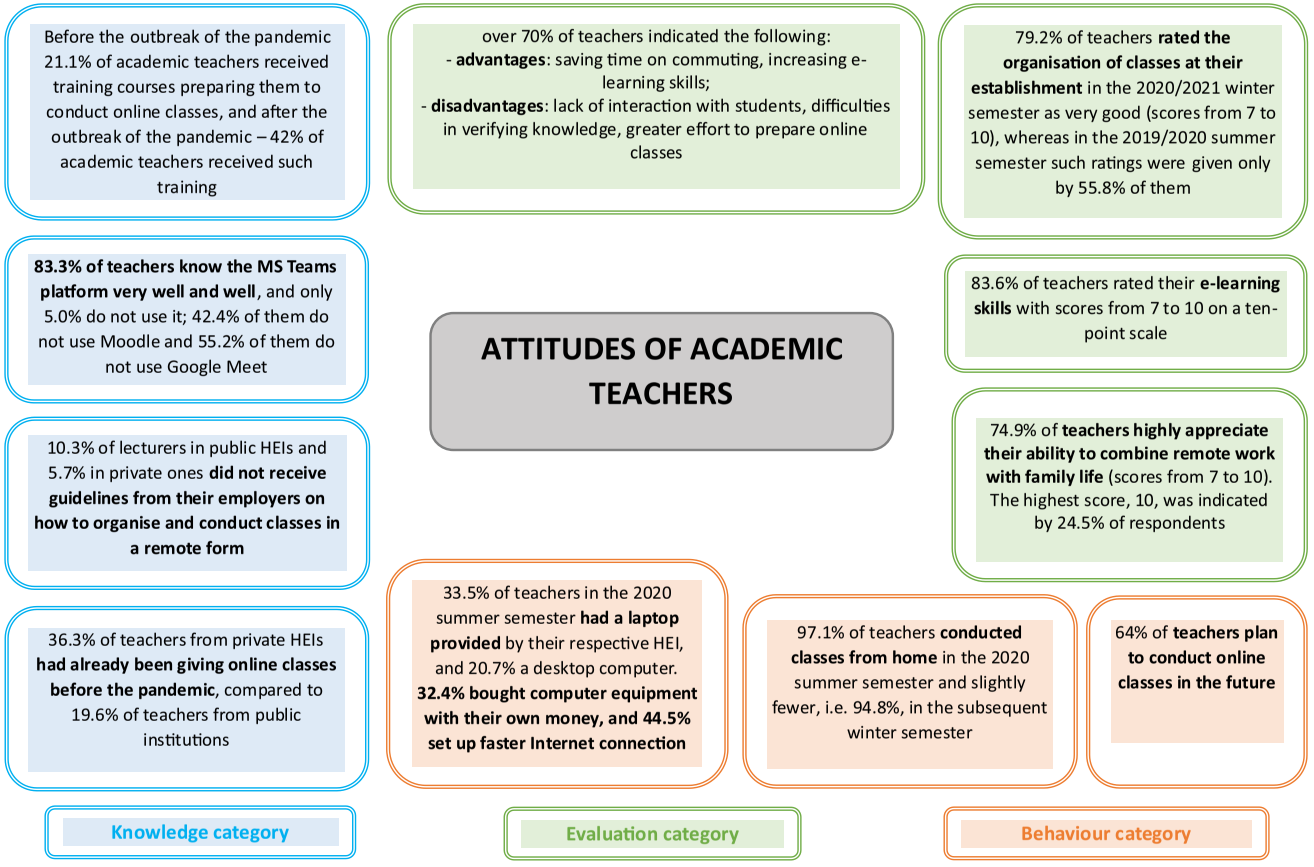

Fig. 52. The most important changes in the attitudes of academic teachers at HEIs in Wielkopolska region towards changes in academic life during the COVID-19 pandemic – a synthetic diagram
Source: authors' own work.

invested in faster Internet connection out of their own pocket). Therefore, from the perspective of the behavioural aspects of academic teachers' attitudes, it is worth recommending that HEIs consider introducing e-learning in their study programmes in the future.

The results of the third task in this research project emphasize the importance of digital competences and soft skills among HEI graduates. An analysis of the statements of graduate respondents obtained in the course of the survey shows that from the point of view of the labour market, in the era of digital, knowledge-based economy, the most important features of future employees are independence and creativity in solving professional problems, as well as the ability to cooperate and being ready to update one's skills and knowledge. Hard skills related to the knowledge of techniques and the use of computer software are equally significant. These competences are most likely to be developed by students during project and team work, i.e. the forms most often found in online learning, with the use of various platforms and software. In this context, the experience gained while learning online during the pandemic has a positive impact on the future career of graduates.

Finally, it should be emphasized that the results and data presented in this study are to a large extent only a preliminary diagnosis of the situation, which is primarily related to the relatively short period of gaining experience in the use of e-learning at HEIs on such a large scale. Further analysis of the associations and trends outlined could lead not only to the formulation of some recommendations, but also to much clearer conclusions, useful in building future strategies for higher education institutions in the sphere of education and didactics.

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List of figures

List of tables

Appendix 1. Classes during the pandemic. Experiences, reflections, perspectives

Online education during the pandemic. Experiences, reflections, perspective

Ladies and Gentlemen,

Due to the realization of a research project "Differentiation of social attitudes in the area of educational services during the pandemic" at Adam Mickiewicz University, Poznań, we kindly request to fill in the questionnaire below. The survey is anonymous and its results will serve only scientific objectives.

Completion of the questionnaire will take approximately 10 minutes.

Project team: dr Emilia Bogacka, prof. UAM dr hab. Jan Hanke (leader of the project), prof. UAM dr hab. Anna Tobolska, dr Justyna Weltrowska

My online education

1. Do you generally prefer distance learning to traditional classes? (single choice question)
   - ☐ yes
   - ☐ rather yes
   - ☐ rather no
   - ☐ no
   - ☐ hard to say
2. What form of distance learning do you like? (multiple answers can be selected)
   - ☐ lectures
   - ☐ classes
   - ☐ discussion classes
   - ☐ laboratory exercises
   - ☐ workshop
   - ☐ language courses
   - ☐ field classes
   - ☐ I do not accept/like any of them

3. Would you like to continue taking online classes after the end of the pandemic? (single choice question)
   - ☐ yes, all of them
   - ☐ yes, majority of them
   - ☐ yes, but only some of them
   - ☐ rather no
   - ☐ definitely no
4. Do you think teachers conduct online classes better (e.g. they are more engaged, use more examples, links to electronic sources) than offline classes? (single choice question)
   - ☐ yes, almost all of them
   - ☐ yes, many of them
   - ☐ yes, but only some of them
   - ☐ rather no
   - ☐ I did not notice any difference
   - ☐ hard to say
5. Do online classes result in a greater number of assigned individual or group tasks? (single choice question)
   - ☐ yes
   - ☐ sometimes yes
   - ☐ rather no
   - ☐ no, I did not notice any difference
6. Are you able to endure all the schedule classes in the front of the computer? (single choice question)
   - ☐ yes, with no problem
   - ☐ rather yes
   - ☐ not really, I often give up some of the classes
   - ☐ I take a break during a class (e.g. to have a coffee)
   - ☐ I do other tasks during remote classes
7. What was the maximum number of online classes (i.e. counting 1.5 hours per class) you took in front of the computer during a day? (single choice question)
   - ☐ > 5
   - ☐ 4–5
   - ☐ 2–3
   - ☐ 1
8. Do you have your camera turned on during online classes? (single choice question)
   - ☐ yes, during all classes
   - ☐ yes, during almost all classes
   - ☐ sometimes
   - ☐ yes, but only at the explicite request of the teacher
   - ☐ no, even at the suggestion of the teacher
   - ☐ I have no camera

9. In your opinion, would it be better if everyone had camera turned on and could see one other during online classes? (single choice question)
   - ☐ yes
   - ☐ rather yes
   - ☐ it does not matter to me
   - ☐ rather no
   - ☐ no
10. Are you more likely to be active during online classes, speak up boldly or put forward ideas? (single choice question)
   - ☐ yes
   - ☐ rather yes
   - ☐ I did not notice any difference
   - ☐ rather no
   - ☐ no

Conditions for online education

11. Do you think you have sufficiently good hardware to participate in online classes? (single choice question)
   - ☐ yes
   - ☐ rather yes
   - ☐ rather no
   - ☐ no
12. Did you have to buy additional hardware to be able to participate in online classes without any problems and worries? (single choice question)
   - ☐ yes, I spent a lot of money on it, because I had to buy almost everything
   - ☐ yes, I bought a lot
   - ☐ yes, but I did not have to buy much
   - ☐ no, I did not have to invest in hardware at all
13. How much did you spend on buying additional computer hardware? (single choice question)
   - ☐ PLN 0–199
   - ☐ PLN 200–499
   - ☐ PLN 500–999
   - ☐ PLN 1000–1999
   - ☐ PLN 2000–4999
   - ☐ ≥ PLN 5000
   - ☐ I did not spend any money
14. What did you buy? (multiple answers can be selected)
   - ☐ desktop computer
   - ☐ more computer memory
   - ☐ laptop
   - ☐ computer monitor
   - ☐ software
   - ☐ camera

☐ microphone
☐ other small accessories (e.g. extension cords, keyboard, mouse)
☐ special computer desk/chair
☐ other
☐ nothing

15. Have you received any training to better navigate the e-learning platforms? (single choice question)
☐ yes, I have participated in the remote training offered by the institution I study at
☐ yes, I have participated in the training offered by the institution I study at during specially organized classes
☐ yes, I have used training found on the Internet
☐ I have cooperated with friends, and we worked out the system together
☐ no, I have managed to master the system myself
16. How would you rate your skill in using communication platform? (single choice question in each row)

Platform	very poor	poor	average	good	very good	I have not used an online platform
MS Teams						
Moodle						
Google Meet						
other (what)						

17. Do you have the possibility of using HEI-owned computer hardware? (single choice question)
☐ yes, I can use HEI-owned computers
☐ yes, the HEI rents computers/hardware in justified cases
☐ no
☐ I do not know
18. How would you rate the HEI's help in organising remote classes at the beginning of the pandemic? (single choice question)
☐ very good
☐ good
☐ average
☐ poor
☐ very poor
☐ I did not study at that time
19. How would you rate the HEI's help in organising remote classes now? (single choice question)
☐ very good
☐ good

☐ average
☐ poor
☐ very poor

20. How would you assess the teachers' skills in using e-learning platforms? (single choice question)
☐ very good
☐ rather good, but this does not apply to everyone
☐ average, many of them have problems with technical aspects
☐ poor, majority of them do not cope
21. During the pandemic period when classes are conducted online: (single choice question)
☐ I returned to my family home outside the city where the HEI is located
☐ I live in a family home in the city where the HEI is located
☐ I rent a room/flat in the city where the HEI is located
☐ other
22. Do you have adequate conditions for taking online classes at home? (single choice question)
☐ yes
☐ rather yes
☐ rather no
☐ no
23. Do you often experience distractions when taking online classes at home? (single choice question)
☐ yes – it is difficult to maintain focus for such a long time, because there were many ways to spend this time at home
☐ rather no – I try to isolate myself
☐ no, nothing can distract me

My life outside of distance classes

24. Apart from the remote classes, do you meet your friends/acquaintances in the real world? (single choice question)
☐ yes, quite often
☐ yes, occasionally
☐ rather no
☐ no
25. In your opinion, what are the advantages of online education during the pandemic? Select all the answers that apply (multiple choice question).
☐ I do not waste time on commuting
☐ I can focus better
☐ I have more time for my paid job
☐ I have more freedom and flexibility in organising the way I study
☐ In case of minor illness I do not have to take a sick leave and I can participate in online classes
☐ I get more support from my friends

☐ I work with my peers more often
☐ On line education created an opportunity for them to study
☐ I do not have to get up that early
☐ I eat healthy and regularly
☐ I experience fewer stressful situations related to my everyday life
☐ I have more time for my family life
☐ I have more time for myself
☐ I see no advantages

26. In your opinion, what are the disadvantages of online education during the pandemic? Select all the answers that apply (multiple choice question).
☐ Online classes are more demanding and more difficult to pass
☐ I have problems related to availability of the Internet
☐ I have problems related to the bandwidth of my Internet connection
☐ I lack technical support when attending online classes
☐ I experience technical problems related to using communication platforms (e.g. MS Teams, Moodle, etc.) when conducting online classes
☐ I lack unrestricted access to the infrastructure available at the my institution
☐ I do not like the lack of direct interaction with the tutors
☐ I miss personal contact with my peers
☐ I have difficulty focusing when taking online classes at home
☐ I do not have adequate conditions to taking online classes at home
☐ I experience heath issues resulting from spending a long time in front of computer
☐ I care less about my appearance
☐ My physical activity decreased
☐ I have less time for myself
☐ I experience apathy and psychological discomfort
☐ I am not a well organised person, I have problems with time management
☐ I feel abandoned
☐ I experience growing frustration resulting from working online
☐ I see no disadvantages

Characteristics of the respondent

Gender:
☐ female
☐ male
Place of residence (family home):
Commune of residence (family home):
Place where you study online:
Commune in which you study online:
Name of the university:
Name of the department:

Appendix 2. Attitudes of academic teachers during the pandemic

Social attitudes of academic teachers during the pandemic

Ladies and Gentlemen,

Due to the realization of a research project "Differentiation of social attitudes in the area of educational services during the pandemic" at Adam Mickiewicz University, Poznań, we kindly request to fill in the questionnaire below. The survey is anonymous and its results will serve only scientific objectives.

Completion of the questionnaire will take approximately 10 minutes.

Project team: dr Emilia Bogacka, prof. UAM dr hab. Jan Hanke (leader of the project), prof. UAM dr hab. Anna Tobolska, dr Justyna Weltrowska

Introductory questions

1. How many online teaching hours did you hale during the 2019/2020 summer semester? (single choice question)
   - ☐ no teaching
   - ☐ ≤ 60 hours
   - ☐ 61–90 hours
   - ☐ 91–120 hours
   - ☐ ≥ 121 hours
2. How many online teaching hours did you hale during the 2020/2021 winter semester? (single choice question)
   - ☐ no teaching
   - ☐ ≤ 60 hours
   - ☐ 61–90 hours
   - ☐ 91–120 hours
   - ☐ ≥ 121 hours

3. What type of classes do you teach? (multiple choice question)

	classes	laboratory exercises	lectures	seminars	field classes	discussion classes	workshop	no teaching
2019/2020 summer semester								
2020/2021 winter semester								

Knowledge and preparedness for online teaching

4. Did you receive training in online teaching before the pandemic? (single choice question)
   - ☐ yes
   - ☐ no
   - ☐ don't remember
5. Were you involved in online or blended teaching before the pandemic? (single choice question)
   - ☐ yes
   - ☐ no
6. Did you receive training in online teaching during the pandemic? (single choice question)
   - ☐ yes
   - ☐ no
   - ☐ don't remember
7. Have your skills In online teaching improved during the pandemic? (single choice question)
   - ☐ definitely yes
   - ☐ yes
   - ☐ they did not change
   - ☐ hard to say
8. How would you rate your level of preparedness for online teaching? (single choice question)

1 – very bad	2	3	4	5	6	7	8	9	10 – very good

9. How would you rate your skills in using various communication platforms? (single choice question in each row)

	very poor	poor	average	good	very good	I have not used an online platform
MS Teams						
Moodle						
Zoom						
Google Meet						
other						

10. Do you plan to teach some classes online (in a blended format) when face-to-face classes resume? (single choice question)
    ☐ yes
    ☐ no
11. Knowledge and preparedness for online teaching – another, own comments

Working conditions in online teaching

Applies to the 2019/2020 summer semester

12. Did you have access to the hardware required to perform your work (teaching, research and organizational tasks) online provided by your institution? (single choice question in each row)

	yes	no
laptop		
desktop computer		
printer		
camera with microphone		
graphics tablet		
digital pen		
other		

13. Where did you work form when conducting online classes? (multiple answers can be selected)
    home
    work
    another location

Applies to the 2020/2021 summer semester

14. Do you have access to the hardware required to perform your work (teaching, research and organizational tasks) online provided by your institution? (single choice question in each row)

	yes	no
laptop		
desktop computer		
printer		
camera with microphone		
graphics tablet		
digital pen		
other		

15. Where do you work form when conducting online classes?. (multiple answers can be selected)
    - ☐ home
    - ☐ work
    - ☐ another location
16. Were you forced to do any of the following because of the pandemic and the need to conduct classes online: (single choice question in each row)

	yes	no
buy computer hardware		
purchase a camera with microphone		
install a faster Internet connection		

17. Working conditions in online teaching – another, own comments

Evaluation of organisation of classes and way of conducting online classes

18. How would you rate the organisation of online classes at your institution in the 2019/2020 summer semester? (single choice question)

1 – very bad	2	3	4	5	6	7	8	9	10 – very good

19. Did you receive guidelines regarding the organisation of classes and ways of conducting online classes? (single choice question)
    - ☐ Yes, I received guidelines before online classes commenced
    - ☐ Yes, I received guidelines, but only after online classes commenced
    - ☐ No, I did not receive any guidelines
    - ☐ I don't remember
20. How would you rate the organisation of online classes at your institution in the 2020/2021 winter semester? (single choice question)

1 – very bad	2	3	4	5	6	7	8	9	10 – very good

21. Evaluation of organisation of classes and way of conducting online classes – another, own comments

The ability to reconcile online work and everyday life

22. How would you rate your skills In reconciling online work with everyday life? (single choice question)

1 – very bad	2	3	4	5	6	7	8	9	10 – very good

23. How much time does your work take during the pandemic compared to the period before the pandemic? (single choice question in each row)

	less	rather less	no difference	rather more	more	I do not perform such work
teaching						
research						
organisational work						

24. Are you performing your work In a timely manner during the pandemic? single choice question in each row)

	definitely no	rather no	sometimes yes, sometimes no	rather yes	definitely yes	I do not perform such work
teaching						
research						
organisational work						

25. The ability to reconcile online work and everyday life – another, own comments

Advantages and disadvantages of online work

26. In your opinion, what are the advantages of online work during the pandemic? Select all the answers that apply (multiple choice question).
    - ☐ I do not waste time on commuting
    - ☐ I prefer conducting classes over conducting them face-to-face
    - ☐ I improve my skills when conducting online classes using a communication platform (e.g. MS Teams, Moodle, etc.)
    - ☐ I can focus better
    - ☐ I have more time for research

☐ I have more freedom and flexibility in organising my work
☐ In case of minor illness I do not have to take a sick leave and I can continue to work online
☐ I get more support from my colleagues
☐ I am happy with the prevailing atmosphere
☐ I do not have to get up that early
☐ I eat healthy and regularly
☐ I experience fewer stressful situations related to my everyday life
☐ I have more time for my family life
☐ I have more time for myself
☐ I spend less money
☐ I see no advantages

27. In your opinion, what are the disadvantages of online work during the pandemic? Select all the answers that apply (multiple choice question).
☐ Online classes are more difficult to conduct and more demanding
☐ I have problems related to availability of the Internet
☐ I have problems related to the bandwidth of my Internet connection
☐ I lack technical support in conducting online classes
☐ I experience technical problems related to using communication platforms (e.g. MS Teams, Moodle, etc.) when conducting online classes
☐ I lack unrestricted access to the infrastructure available at the my institution
☐ I have less time for research
☐ The lack of interaction with my students bothers me
☐ It bothers me that students do not turn on their camera during classes
☐ It bothers me that students are less willing to speak / do not speak at all
☐ It is more difficult to reliably verify the knowledge and skills of students
☐ I miss personal contact with work colleagues
☐ I have difficulty focusing when working online from home
☐ I do not have good working conditions at home
☐ I experience heath issues resulting from spending a long time in front of computer
☐ I care less about my appearance
☐ My physical activity decreased
☐ I have less time for myself
☐ I experience apathy and psychological discomfort
☐ I am not a well organised person, I have problems with time management
☐ I feel abandoned
☐ I experience growing frustration resulting from working online

28. Advantages and disadvantages of online work – another, own comments

Characteristics of the respondent

Gender:
☐ female
☐ male

Age:
☐ < 30 years old
☐ 30–34 years old
☐ 35–39 years old
☐ 40–44 years old
☐ 45–49 years old
☐ 50–54 years old
☐ 55–59 years old
☐ 60–64 years old
☐ ≥ 65 years old.
Work experience:
☐ < 5 years
☐ 5–10 years
☐ 11–15 years
☐ 16–20 years
☐ 21–25 years
☐ > 25 years
Position:
☐ teaching
☐ research and teaching
Place of residence:
Commune of residence:
Name of the university:
Name of the department:

Appendix 3. The importance of completing higher education during the pandemic

The importance of completing higher education during the pandemic in the opinion of graduates

Ladies and Gentlemen,

Due to the realization of a research project "Differentiation of social attitudes in the area of educational services during the pandemic" at Adam Mickiewicz University, Poznań, we kindly request to fill in the questionnaire below. The survey is anonymous and its results will serve only scientific objectives.

Project team: dr Emilia Bogacka, prof. UAM dr hab. Jan Hanke (leader of the project), prof. UAM dr hab. Anna Tobolska, dr Justyna Weltrowska

1. Has the completion of higher education prepared you to integrate into the labour market more easily during the pandemic? (single choice question)
   - ☐ yes
   - ☐ rather yes
   - ☐ rather no
   - ☐ no
   - ☐ I don't know
2. Has the completion of higher education helped you in any way to better deal with the new realities of everyday life during the pandemic? Select all the answers that apply (multiple choice question).
   - ☐ They taught me to be more creative
   - ☐ I am more resistant to stressful situation
   - ☐ I am more persistent In pursuing my goals
   - ☐ I can formulate new goals more easily
   - ☐ I can look at problems from different point of view
   - ☐ I have greater skills in searching for solutions to problem situations
   - ☐ I have better technical skills
   - ☐ I have a larger circle of friends with whom I can talk about problems
   - ☐ Other, what…
3. Have you considered taking up new higher education courses and/or postgraduate courses in a new online learning format (single choice question)

☐ Yes, I am going to
☐ Yes, I thought about it
☐ I did not think about it
☐ I have no such plans

Characteristics of the respondent

Year of graduation:
In which field did you graduate? (single choice question)
☐ studies in social sciences
☐ studies in humanistic sciences
☐ studies in natural sciences
☐ studies in exact sciences
☐ studies in engineering and technical sciences
☐ studies in medical sciences
☐ studies in agricultural and forest sciences
☐ studies in arts
Place of residence:
Commune of residence:

Bogucki
WYDAWNICTWO
NAUKOWE

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