Individual Partner Report on the Impact of Covid-19 on University Teaching

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e-CLOSE

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Introduction

The ongoing COVID- 19 pandemic since the turn of 2019 and 2020 has unusually strongly and violently affected the functioning of societies and economies of most countries in the world, including Poland. The decisions and actions taken by governments and actions taken by governments to limit the scale of infection had a significant impact on education systems, generally leading to the immediate closure of schools of various levels and universities. In this situation, also institutions of higher education, including the Lodz University of Technology (TUL), were almost immediately confronted with the necessity of abandoning traditional education and switching to distance learning. The courses and lectures offered online in response to the spreading COVID-19 pandemic were very different from professional, polished e-learning courses, which often take more than a few months to design. It is therefore necessary to distinguish between traditional e-learning and pandemic emergency remote teaching.

Research on online education indicates that when planning to move traditional classes (or parts of them) online, we should make a number of decisions that determine the success of our educational experience. Decisions that, in the era of the COVID-19 pandemic, we did not have time to make, or we made them on an emergency basis. It is therefore essential to monitor process of distance learning so that, when faced with the need to continue this form of education, lessons can be learned for the future. This is extremely important, as the quality of education must not be adversely affected by remote teaching.

The purpose of this report is to analize activities during the period of Covid-19 related to the mass transition to online education, taking into account all stages of distance learning process.

General information on the survey

Objectives

The main objectives of this survey was to diagnose distance learning practices for individual partners to identify the use of ICT methods by partners during the pandemic. Four stages of the learning process was taken into account:
- preparation of classes
- conducting classes
- verification of learning outcomes
- final evaluation of the quality of adopted distance learning techniques and methods.

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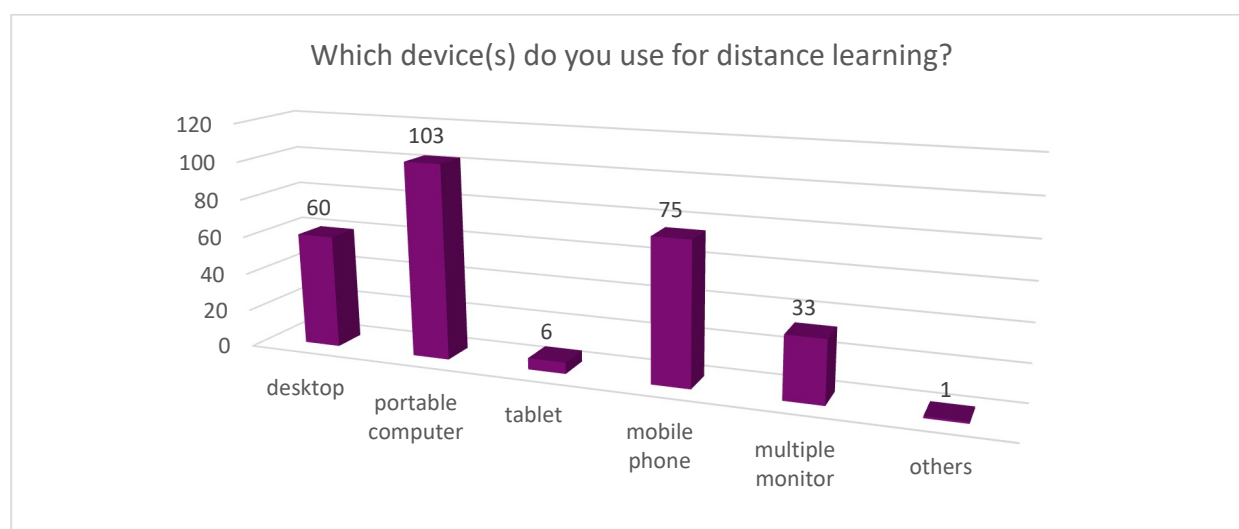Lodz University of Technology

Means and time

Survey was created with the use of free tool Google Forms. Link to the student survey was distributed on 21st June to the official student email addresses. The questionnaire for students was available until 24th October. It included 32 compulsory questions: 17 single answer, 13 multiple answers and 1 open-ended. On 30th September link to survey for teachers was distributed to the teachers via email. It remained open until 5th November. It included 1 non-mandatory and 39 mandatory questions, including 21 single answer, 13 multiple answer and 2 open-ended answers. Both surveys were anonymous and no respondents' personal information was captured.

Respondents profile

Students profile

122 students took part in the survey. Nearly 36% (n=43) of them were women, 63% (n=77) of them were men, what corresponds to the structure of the academic community of the Lodz University of Technology (39% of women studied at TUL in 2020). 2 respondents answered „Not specified" to the question „What is your gender?".

Nearly 70% (n=86) of the sample were first-cycle students and 30% (n=36) were second-cycle students. The above indicators of the structure of the studied sample reflect the general population, because at TUL, about half of the graduates of the first-cycle studies continue their studies at the second-cycle studies. There were no doctoral students among the respondents.

Which device(s) do you use for distance learning?

desktop: 60; portable computer: 103; tablet: 6; mobile phone: 75; multiple monitor: 33; others: 1

Vast majority of the surveyed students worked with portable computer (n = 103; 84%), over 60% (n=75) used also mobile phone. Every second student used desktop (n = 60; 49%), and almost

every third (n = 33; 27%) worked with multiple monitors. A small percentage of the respondents (n = 6; 5%) used tablets, including the other option, 1 the respondent indicated a tablet graphics.

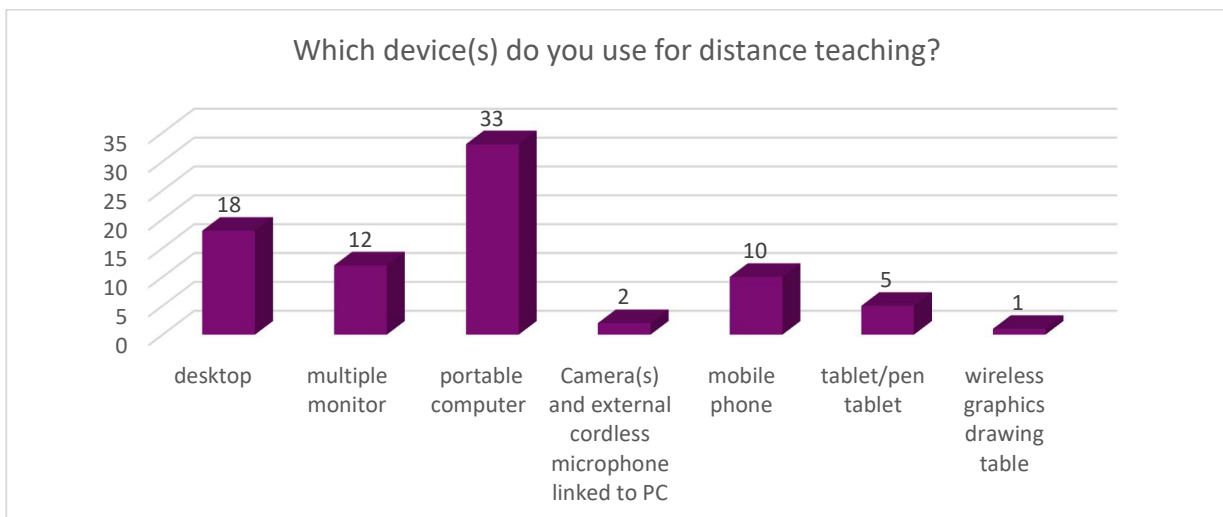The respondents represented various areas of study. 41 of the surveyed students (34%) made a multiple choice. The results are shown in the figure below.

Specify the area of your studies

Area	Value
science	31
technology	59
engineering	76
mathematics	7
business	6
computer science	1
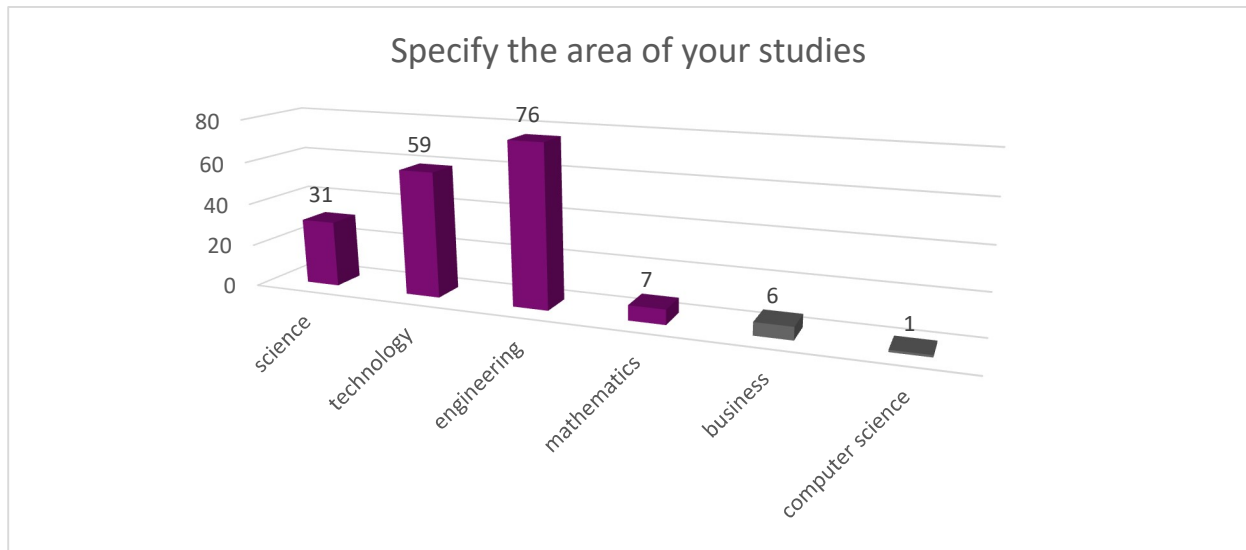
Teachers profile

A total of 39 teachers participated in the survey, 38% (n=15) of them were women and 62% (n=24) were men. Most of the respondents has more than 21 years of experience (n= 16; 41%), slightly less (n=14; 36%) has experience between 10-20 years. 13% (n=5) of teachers has experience between 6-10 years. Small percentage of respondence has experience between ,2-5 years (n=3;8%) and 1 year and less (n=1;1%).

Which device(s) do you use for distance teaching?

Device	Value
desktop	18
multiple monitor	12
portable computer	33
Camera(s) and external cordless microphone linked to PC	2
mobile phone	10
tablet/pen tablet	5
wireless graphics drawing table	1

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Most of the surveyed teachers used portable computers (n=33; 84%), more than 46% (n=18) also used desktop as a working tool. The remaining respondents used multiple monitors (n=12; 30%) and mobile phones (n=10; 25%). A small percentage of respondents indicated tablet/pen tablet (n=5; 12%), cameras (n=2; 5%) and wireless graphics (n=1).
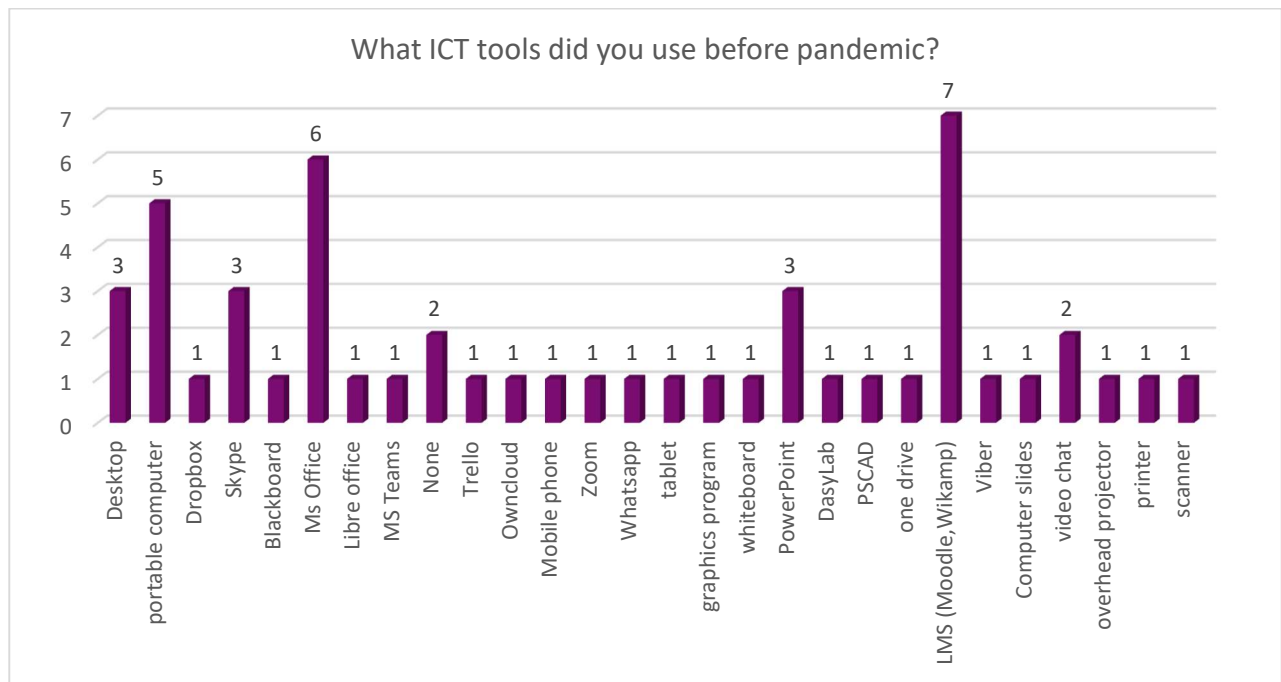
Before the pandemic, the respondents mostly used tools like: portable computer (n=5; 12,82%) Ms Office and University LMS system (Moodle, Wikamp) (n=4; 10,25%). 7% of teachers mentioned such tools as Skype (n=3; 8%), Desktop (n=3; 8%), Power Point (n=3; 7%). The least respondents used such tools as Dropbox (n=1;2%) ,Blackboard (n=1), Libre office (n=1), Trello (n=1), mobile phone (n=1), Zoom (n=1) and others. Only 5% (n=2) of respondents said they did not use any tools or software.

What ICT tools did you first use in the pandemic?
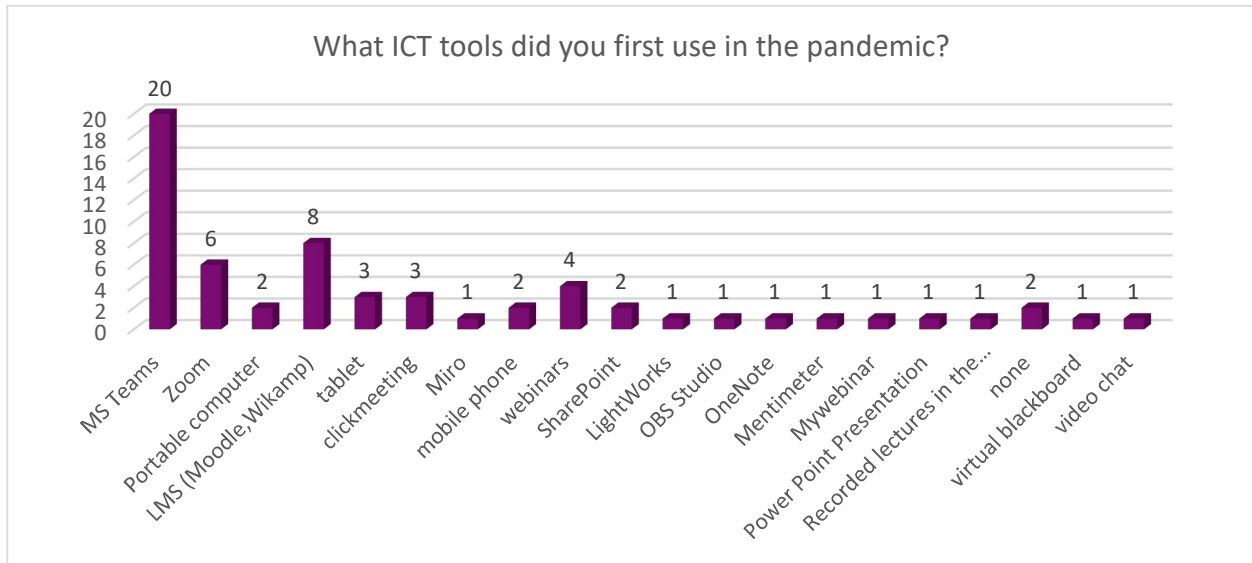
When asked what tools teachers used first during the pandemic, the majority of respondents indicated MSTeams 46%, 15% Zoom. 10% of respondents indicated LMS (Wikamp, Moodle) and webinars. More than 5% of the respondents indicated portable computer, tablet, mobile phone and SharePoint. Individual teachers used such tools as LightWorks, OBS Studio, OneNote, Mentimeter, Mywebinar, PowerPoint, Video chat and virtual blackboard.

What ICT tools did you top using and why?
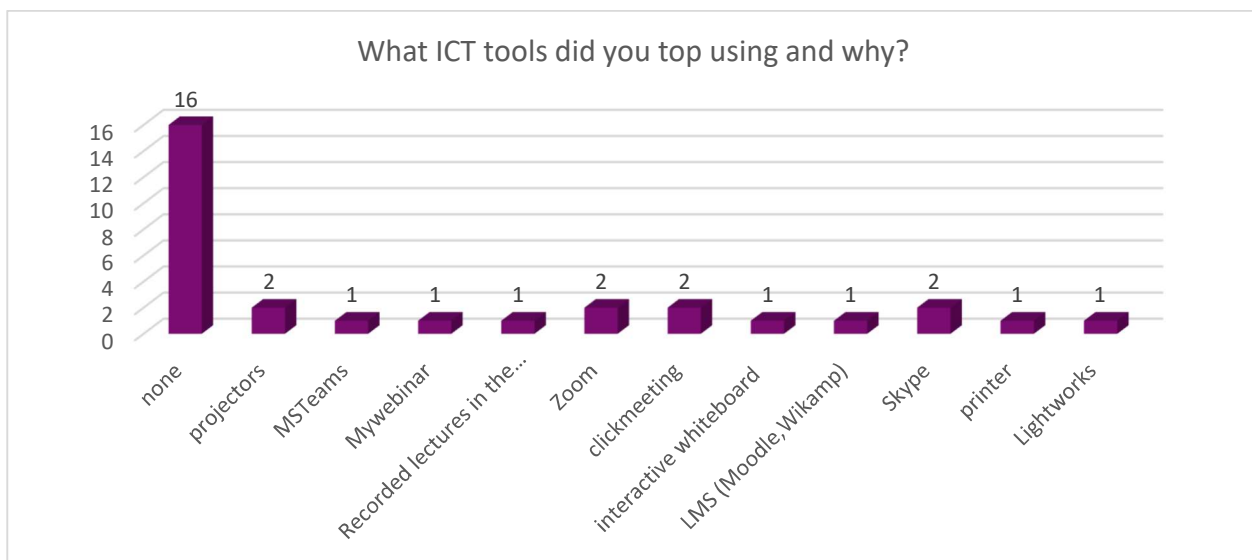
The next question asked if teachers had stopped using any ICT tools. The vast majority of the respondents (n=16; 41%) said that they have not stopped using any of the available tools they used before. However, 5% (n=2) of the respondents indicated tools such as projectors, Zoom, clickmeeting, and Skype as less interactive platforms/programs. Individuals indicated MSTeams(n=1) due to its return to classroom teaching, Mywebinar (n=1), which was replaced by MSTeams, the form of recorded lectures in the form of mp4 files (due to lack of direct contact

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with students), interactive whiteboard, LMS (Wikamp,Moodle) (n=1) because it is counterintuitive and there is no cooperation from university IT support. The last tool was the printer as not very useful device and the Lightworks program (n=1).

Which of the following methotologies have you used for teaching duing the Covid-19 pandemic?

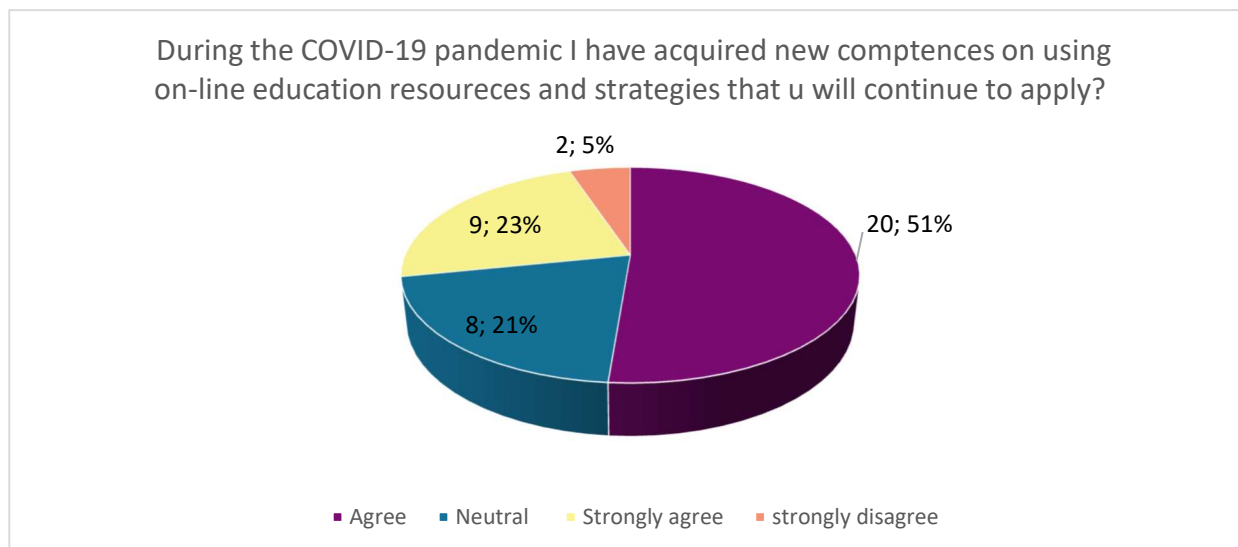| Methodology	Count
masterclass (face to face or online)	31
flipped classroom	14
inverted classroom (active learning	14
collaborative learning	17
gamification	3
game based learning	3
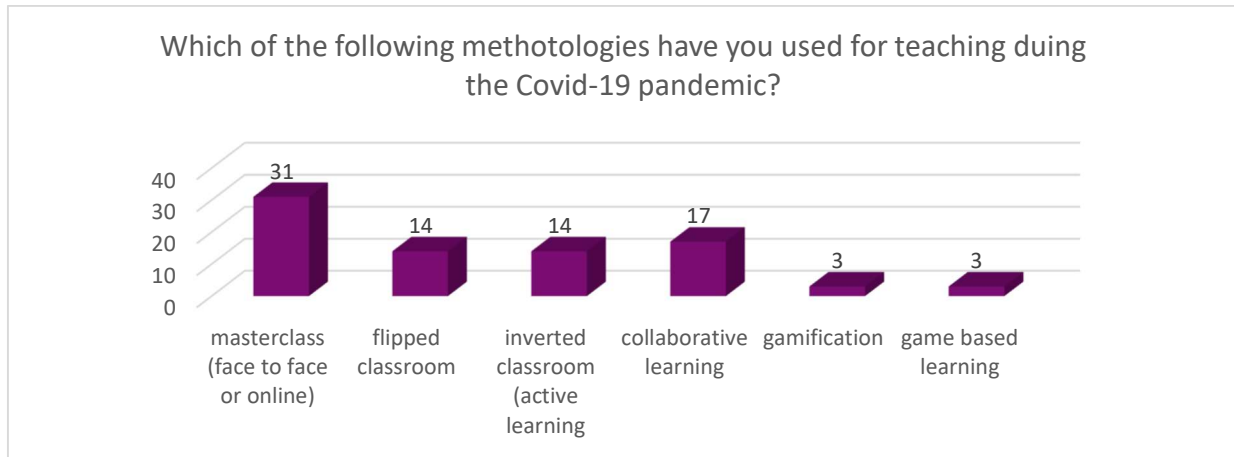
For the methodology used by teachers in teaching during Covid pandemic 19. In this case, 79%(n=31) of the respondents indicated masterclass (face to face or online). In second place, 42% (n=17) of respondents indicated collaborative learning. 35% (n=14) of teachers used flipped classroom (n=14) and inverted classroom (active learning). Only 7% (n=3) used gamification and game bases learning.

Which of the new methods/tools do you think you will use after the Covid-19 pandemic?

Method/tool	Count
Active learning	2
collaborative learning	5
team based learning	2
Tablet	3
face to face	2
online meeting and…	4
flipped classroom	5
gamification	3
PBL	1
RBL	1
I do not know yet	1
interactive presentation…	1
whiteboard	1
masterclass (online)	1
Mentimiter	3
Miro	2
MSTeams	7
LMS (Moodle;Wikamp)	3
video camera	1
SharePoint	1
online lectures	1
onedrive	1
Zoom	1
webinars	1

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The surveyed teachers were asked: „Which of the new methods/tools do you think you will use after the Covid-19 pandemic?" 17% of respondents indicated MSTeams, while 7% favored online meeting, LMS (Moodle; Wikamp) (n=3) and Mentimiter (n=3). Talking about methods the remaining 12% (n=5) respondents will use collaborative learning and fllipped classroom.

During the COVID-19 pandemic I have acquired new comptences on using on-line education resoureces and strategies that u will continue to apply?

■ Agree   ■ Neutral   ■ Strongly agree   ■ strongly disagree

Concluding the teacher profile the respondents were asked if during the COVID-19 pandemic they acquired new competences on using online education resources and strategies that they will continue to apply. The vast majority 51% (n=20) of the respondents agreed with the statement/question. 23% (n=9) marked strongly agree, 21% (n=8) were neutral and 5% (n=2) of the respondents strongly denied.

Portable computers was the most frequently used device by both students and teachers. Study shows that during the COVID-19 pandemic students used mobile phone 2,5 times more often than teachers.

Before the COVID-19 pandemic outbreak LMS (Moodle, Wikamp) was the most popular tool and it remains in use. Large increase in interest in using MS Teams was noticed. The platform was not used before the COVID-19 outbreak.

Covid-19 Impact on Teaching and Learning

National framework for distance education

The general rules governing the implementation of distance learning into study programmes were introduced at the national level before the outbreak of Covid-19 pandemic by:

1. ACT of 20 July 2018 The Law on Higher Education and Science

Art. 67

4. If the specificity of the studies in a particular field of study so allows, some of the learning outcomes included in the curriculum may be achieved through classes conducted with the use of distance learning methods and techniques as well as infra[1]structure and software ensuring synchronous and asynchronous interaction between students and lecturers conducting the classes.

2. Order of the Minister of Science and Higher Education of 27 September 2018 on studies

§ 12. [Requirements regarding classes conducted with the use of distance learning methods and technique]

1. Classes can be conducted with the use of distance learning methods and techniques if the following conditions have been fully satisfied:

1) academic teachers and other persons conducting classes have been trained on distance learning methods and techniques, and the delivery of classes is monitored by the University on an ongoing basis;

2) access to IT infrastructure and software ensures synchronous and asynchronous interaction between students and lecturers conducting the classes ;

3) learning resources are available in a digital form;

4) students have the possibility to meet personally with the lecturers conducting the classes (during office hours) on campus or in one of the university branches;

5) achievement of the learning outcomes is verified on the basis of student progression, final tests and examinations should be held on university premises or its branches.

6) students have been instructed or trained on distance participation in classes;

2. Practical classes can only be supported by distance learning methods and techniques.

3. On justified occasions, final tests and examinations can be held off campus provided IT technologies employed allw for online supervision and digital recording.

§ 13. [Maximal number of ECTS points achieved in classes conducted *with the use of distance learning methods and techniques* **]**

The number of ECTS points that can be achieved in classes conducted with the use of distance learning methods and techniques cannot be greater than 50% of the total ECTS points defined for a particular study programme.

Between March 2020 and June 2021 the Ministry published eleven (11) amendments to the Order of the Minister of Science and Higher Education of 27 September 2018 on studies, introducing a more flexible approach to the organisation of teaching and learning. Some of the most impactful restrictions that were levied included the organisation of final tests and examinations and the limit of ECTS points on distance learning. Now, all testing can be conducted

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online and the limit was increased to 75% of the total ECTS points for study programmes with general academic profile. During the pandemic period all the limits are not binding.

Apart from legislative changes, a few more documents where published that supported the changes in university regular activities. These were:

1. Guidelines for tertiary institutions on the organisation of academic activities in year 2020/21 following the pandemic in Poland

2. Guidelines for tertiary institutions concerning the partial recovery of academic activities

3. Letter of the Minister of Education and Science to the Rectors of 5 November 2020 concerning introduction of new restrictions.

These, however, did not impose any direct actions on the university management, they provided a tentative scaffolding for institutions to design local operation plans.

 The shift to online teaching and learning was also supported financially. In 2020 the Ministry offered a ?-million subsidy to Lodz University of Technology to be spent on additional IT equipment – hardware and software, IT services – licencing, etc.

On June 2nd 2021 the Polish Ministry for Education and Science issued a new regulation obliging all state universities to conduct an internal audit on distance teaching and learning in the academic year 2020/21. The main aim of this action was to evaluate how prompt and flexible each university proved to be in order to adapt to the changing environment affected by Covid-19 pandemic. The report was supposed to identify system weeknesses or deficiencies (if any) as well as good practices that might be worth spreading. Th deadline for submission was 30 September 2021. The resulting conlusions proved that Lodz University of Technology managed to respond promptly to the changing environment and two good practices were idetified in the area of:

1. Internships

2. Communication channels

Internal policy development

With the sudden decision of lockdown and withholding all on capus activities in March 2020, TUL managed to recover most of teaching and learning within a few weeks. The University had already had a well functioning IT infrastructure and the switch to online teaching and learning was done in due time. Three main university teaching tools were defined on 30 March and recommended for use to all academic society:

1. LMS based on Moodle, called WIKAMP (Virtual Campus)

2. Cloud applications Office 365, with compulsory use of MS Teams

3. Clickmeeting webinar platform

These tools were delivered to teachers and students free of charge, accompanied by a number of instructional videos and online training sessions. Use of additional tools and applications was allowed as long as it did not violate the laws of personal data protection and did not require any licencing fees form the students. In this case, the teacher was responsible for targeted training. All teaching was moved to a synchronous mode with the exception of laboratory classes that involved manual operation of lab equipment and internships in companies where online provision of work services was impossible. These had been suspended until heavy restrictions were levied, i.e. till summer months. Starting from 1 October 2020 new regulations were in place, which in a way continued all the good practices gathered from the "emergency teaching period", i.e. March – September 2020. Nevertheless, they now restricted all the freedom of class delivery and introduced monthly reporting of online activities. Assessment guidelines were published for oral and written assessments as well as diploma examination.

Survey results

Preparation

University perspective

At the first impact of Covid-19, teaching was suspended between March 12 and April 14. However, teachers were requested to move to an online mode as quickly as possible. TUL managed to react very quickly as we had already had the necessary tools. The university Learning Management System, called WIKAMP (Virtual Campus) was brought to life as early as 2010. In March 2018 a new functionality was added – virtual aulas – webinar application allowing for real-time lecture transmission to students. Though not often used at the very beginning, they quickly gained popularity at the outbreak of the pandemic. In September 2019, as the university switched to Microsoft services, a new tool – Microsoft Teams – was marketed to our teachers. And some soon became enthusiasts of those digital tools.

Apart from these, teachers were allowed to use any other tools freely as long as they could effectively reach their students.

Teacher training and teacher support

The reaction time to national lockdown and suspension of all classes was incredibly short. Between March 12 and March 31, ten professional training sessions on online teaching and the use of digital tools were delivered to all academics (e.g. a quick start to WIKAMP, online delivery of classes through webinars, online delivery of classed trough Teams, test design on Moodle, online assessment or use of discussion forums, etc.). Several more were conducted at faculty level as exchange of good practices. The university E-learning Centre recorded a few instructional videos on some technicalities, such as: how to crop and trim video files, how to embed videos in LMS, cloud or youtube service or how to resize files with maximum quality. They also offered a full e-course on how to design and deliver e-learning courses.

Technical support was available between 8:00-20:00.

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Student support

One of the priorities at the very beginning was to maintain good communication between the students and the university. To cater for that need, the Rectos decided to launch a special website koronawirus.p.lodz.pl through which new information was announced promptly. Students were also given necessary training – online webinars on the use of Teams were delivered real-time and also recorded for further reference. Newly recruited students were each time given introductory training on the use of three university tools defined above. In the case some teachers used other supportive applications, they were obliged to instruct the students on their own.
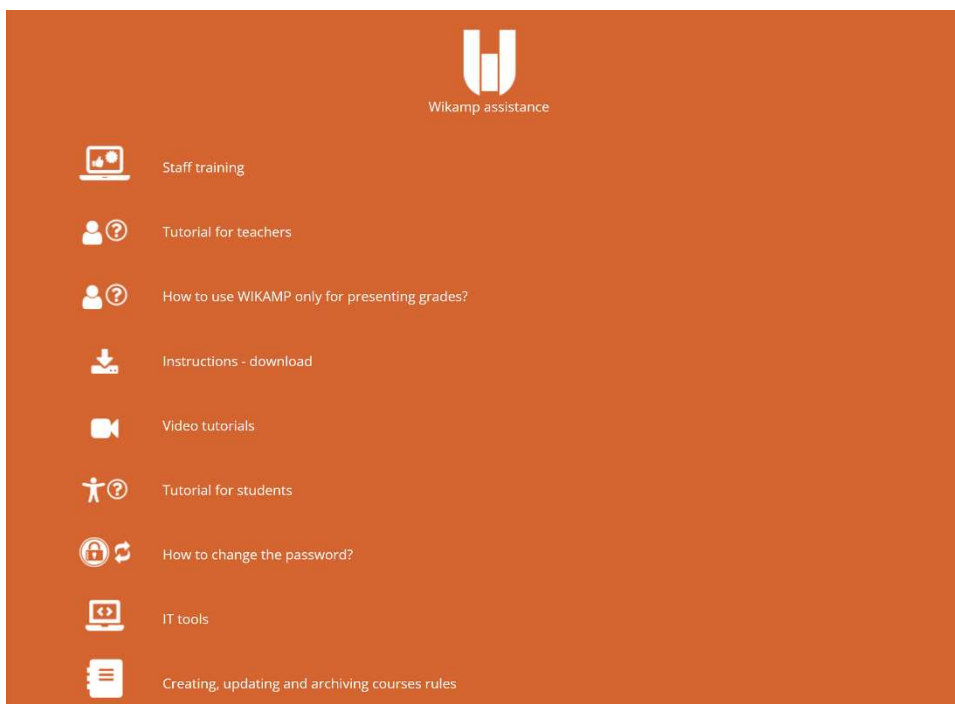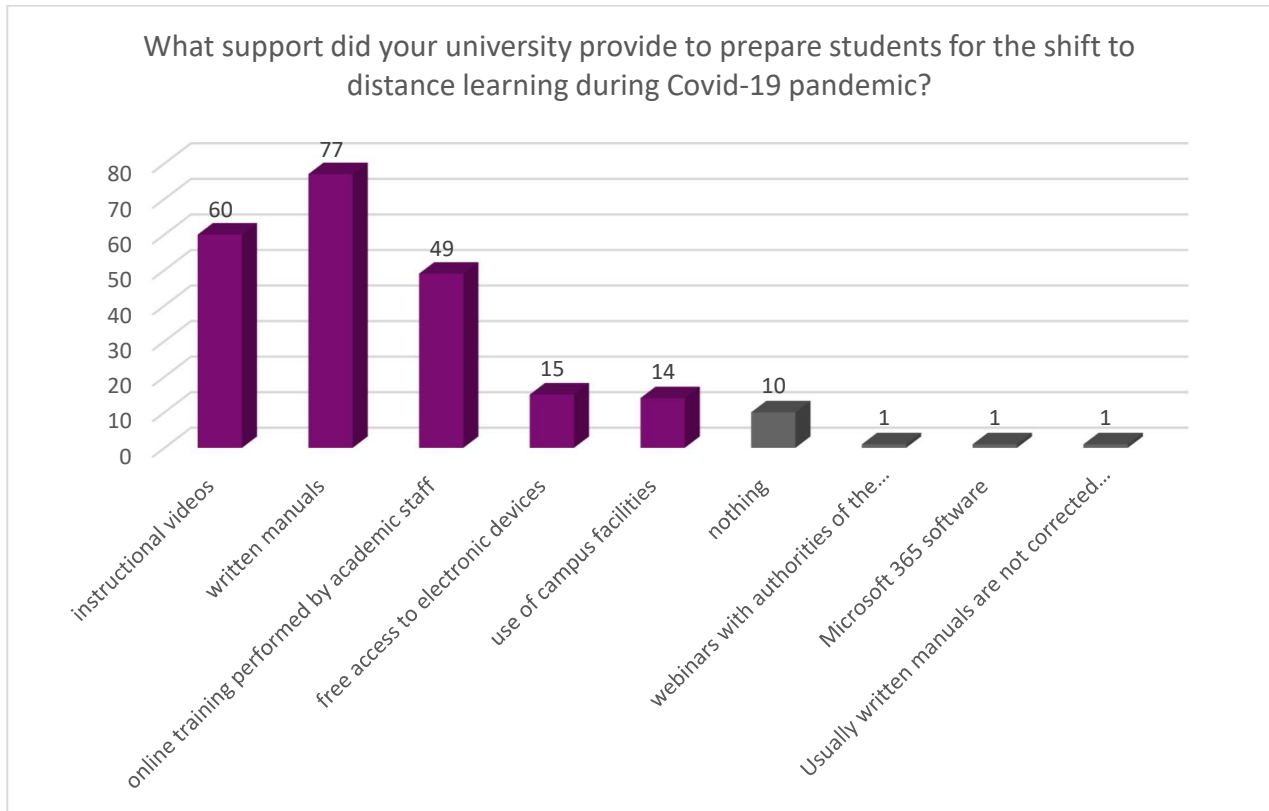
Wikamp assistance

Staff training

Tutorial for teachers

How to use WIKAMP only for presenting grades?

Instructions - download

Video tutorials

Tutorial for students

How to change the password?

IT tools

Creating, updating and archiving courses rules

Fig. 1. WIKAMP directory for teacher support

Students and teachers perspective
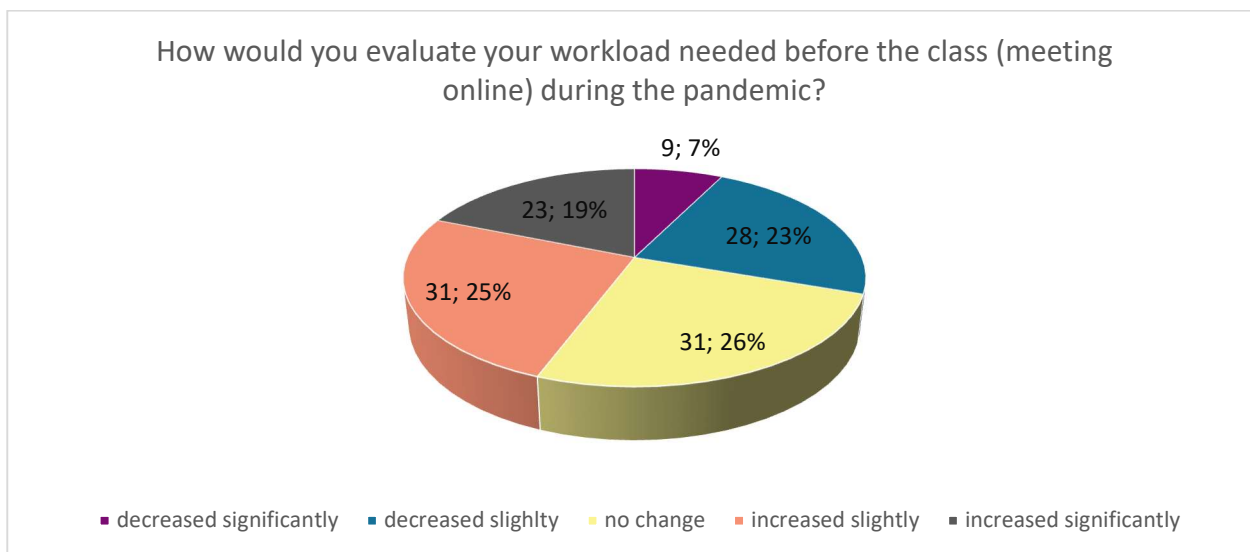
Students perspective

In this section the identified practices of preparation of classes based on distance learning tools and techniques are presented. The charts below provide the results of the survey.
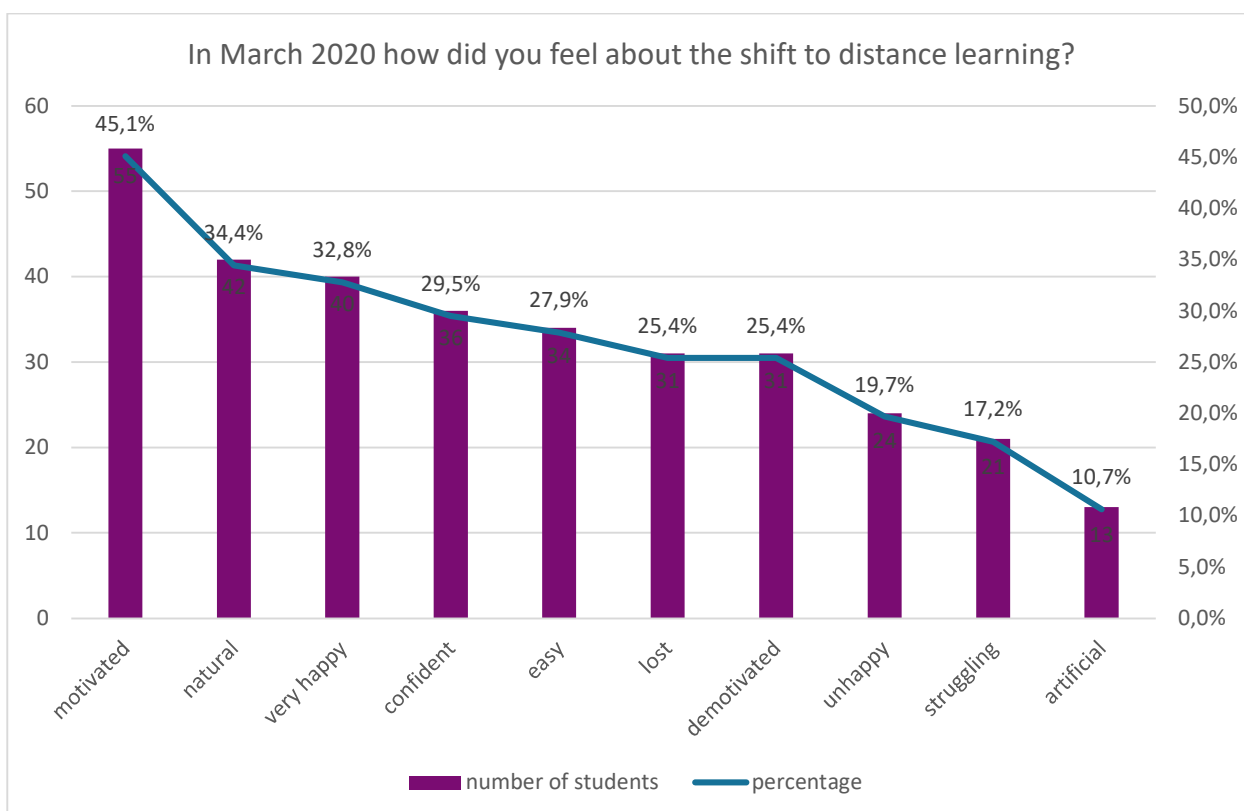
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What support did your university provide to prepare students for the shift to distance learning during Covid-19 pandemic?

"Written manuals" was the most frequent answer and was indicated by 77 (63%) of respondents, "Instructional videos" was the second most frequent answer and the third was "online training performed by academic staff", respectively (n=66; 43%) and (n=49; 40%).

In the „others" category 13 students reported:

 – nothing - 10 respondents,
 – There were webinars with authorities of the university about changed conditions with Q&A session – 1 respondent
 – Microsoft 365 software – 1 respondent
 – Usually written manuals are not corrected in terms of remote learning, they are the same versions as the ones which will be used at laboratory at university - 1 respondent

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How would you evaluate your workload needed before the class (meeting online) during the pandemic?

9; 7%

23; 19%

28; 23%

31; 25%

31; 26%

- decreased significantly
- decreased slighlty
- no change
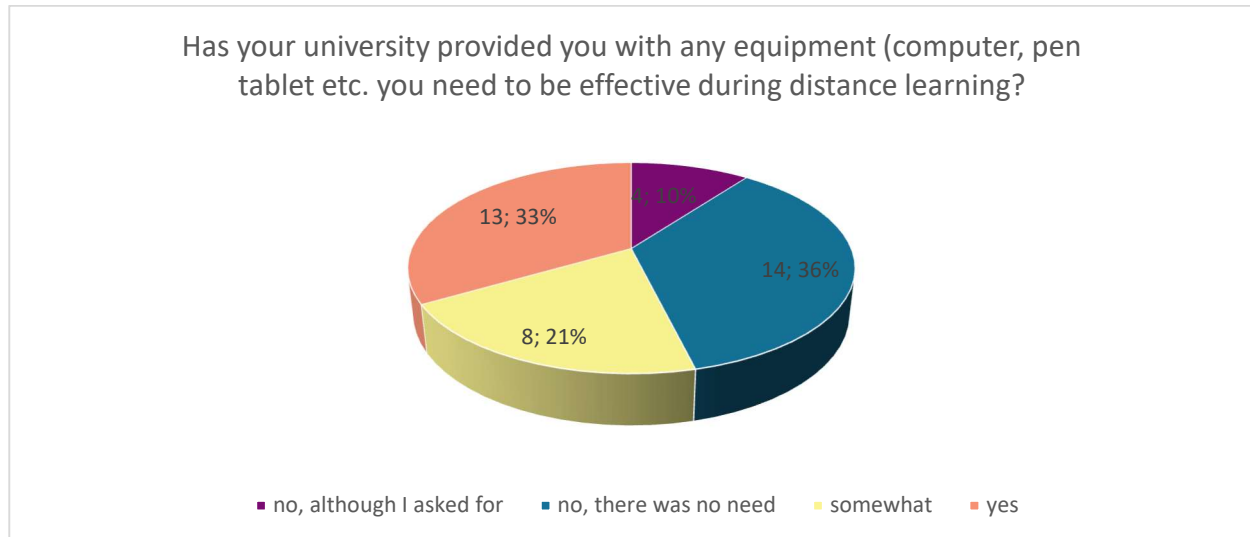- increased slightly
- increased significantly

More than a half of the students indicated the increase in the workload needed, of which 31 (25%) indicated slight increase and 23 (19%) significant increase. Every fourth respondent (n=31; 26%) did not observe any changes.

In March 2020 how did you feel about the shift to distance learning?

45,1%

34,4%

32,8%

29,5%

27,9%

25,4%   25,4%

19,7%

17,2%

10,7%

motivated · natural · very happy · confident · easy · lost · demotivated · unhappy · struggling · artificial
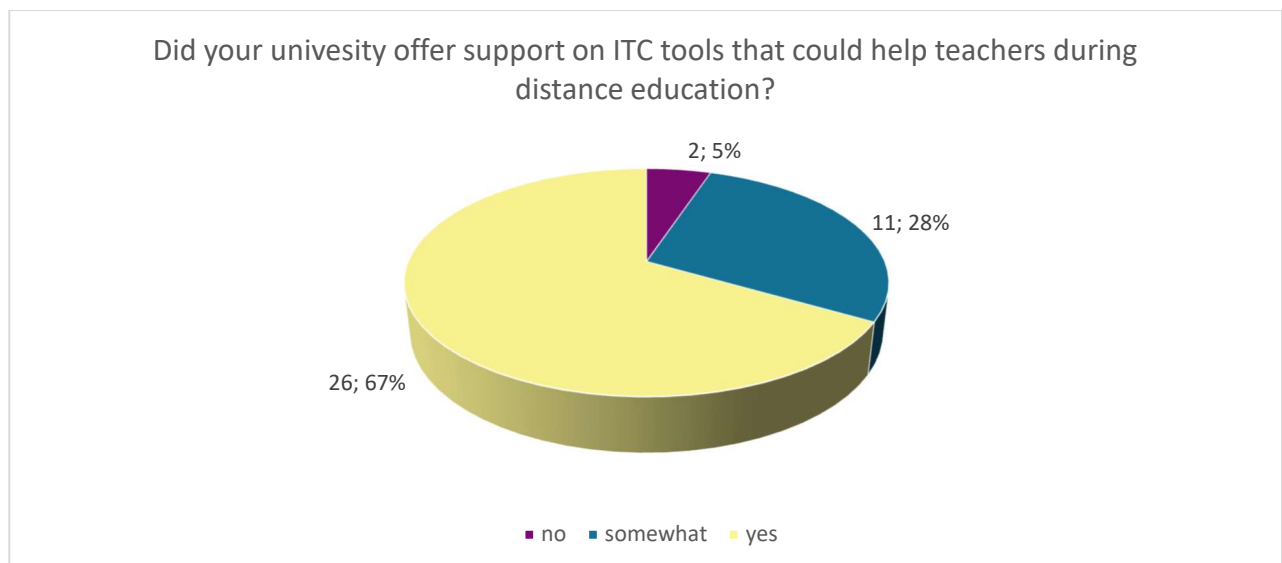
- number of students
- percentage

Rather positive feelings and emotions accompanied shift to the distance learning caused by Covid-19 outbreak among students. Nearly half of the students (n = 55; 45%) felt motivated, and every third respondent (n = 40; 32%) was very happy. Every fourth student was lost (n = 31; 25%)

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and demotivated (n = 31; 25%), and every fifth was unhappy (n = 24; 20%). Only for 10% of respondents the conditions of remote work were artificial (n = 13; 10%).

Teachers perspective

Has your university provided you with any equipment (computer, pen tablet etc. you need to be effective during distance learning?

4; 10%
14; 36%
8; 21%
13; 33%

■ no, although I asked for ■ no, there was no need ■ somewhat ■ yes
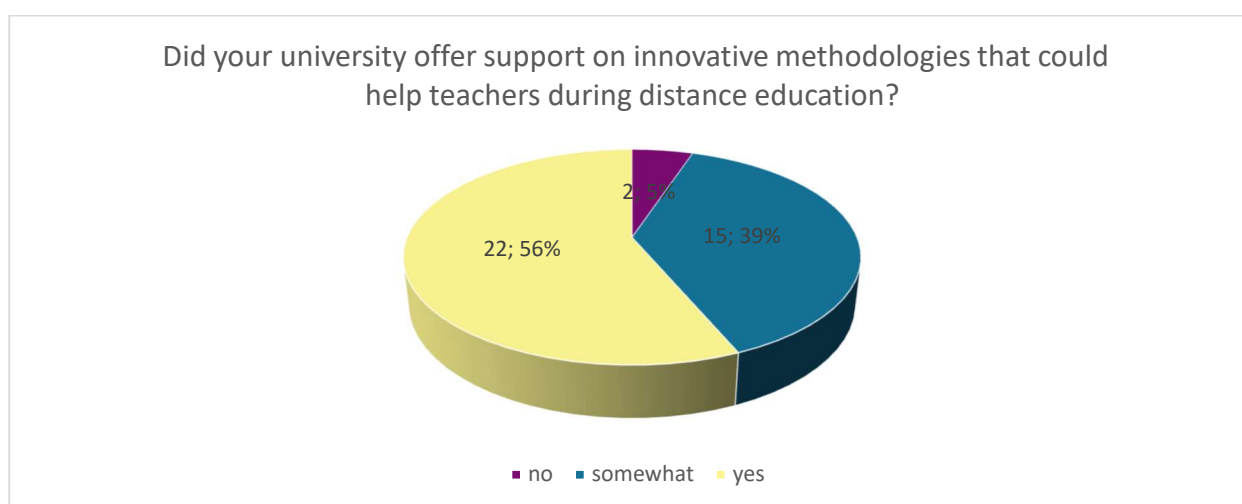
Teachers were asked about if university provided them with any equipment (computer, pen tablet etc.) they need to be effective during distance learning. Over 36% (n=14) of respondents answered no (there was no need), 33% (n=13) said yes, over 21% (n=8) teachers marked somewhat and 10% (n=4) said no, although they ask for.

Did your univesity offer support on ITC tools that could help teachers during distance education?

2; 5%
11; 28%
26; 67%

■ no ■ somewhat ■ yes

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Over 67 % (n=26) respondents confirm that received support on ITC tools that help them during distance education. Others 28% (n=11) answered that they received this assistance only to some extent and only 5% (n=2) of teachers said no.

The graph below shows how many percent of teachers received support from the university for innovative methodologies.

Did your university offer support on innovative methodologies that could help teachers during distance education?

- no
- somewhat
- yes

22; 56%   15; 39%   2; 5%

Conclusions

The vast majority of students declared they received support from the University in the form of written manuals, instructional videos and online training performed by academic staff. Half of the students was motivated when shifting to distance learning. The respondents held rather positive attitude, the number of positive assessments of the students' well-being was nearly two times higher than negative.

When starting remote work, the vast majority of teachers were well-equipped by TUL, did not require additional technical equipment or were provided with appropriate equipment. Only every tenth teacher indicated he did not received the support he asked for. Teachers almost unanimously positively assessed the ICT and innovative methodologies support received from the University.

Delivery

University perspective

The main changes that infuenced teaching and learning were plentiful and they embraced the following areas:
1. Scheduling – all classes but for laboratories were moved to online provision (75% synchronous) and were squeezed, where possible, to the first 10 weeks (out of 15), leaving room for labs to be

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carried out in May and June. In the new academic year 2020/21 further changes were needed, but these were administered directly by the Deans. For ease of scheduling of online classes, the E-learning Centre launched a webinar booking system. 2. Mobility - all mobility was suspended by summer 2020. Erasmus students enrolled in TUL courses continued online learning either staying in Łódź or returning home. Some resigned.

3. Internships – initially all were suspended; after summer holidays new solutions were proposed to replace traditional company work with academic work-like activities (e.g. working as part of university project team, job market research, etc.)

4. Tools and infrastructure – both students and teachers reported ocassionally some shortages in computer equipment or Internet provision. The university tried to accommodate their needs either by providing the necessary equipment (e.g. tablets for easier use of graphics and handwritten algebraic expressions or engineering drawing, headsets with integrated microphones, portable cameras) or giving free access to on-campus computer work stations.

Initially, teachers could use 10 webinar rooms housing 60 students each and one big aula, housing 500 people. These were not sufficient. Our booking system was notoriously overcrowded. Thus, in 2021 we extended the number of virtual rooms to 60 and now offer 8 500-student aulas.

5. Class delivery – most of the teaching was affected. All different forms of classes which were highly interactive and practical (seminars, tutorials, laboratories, projectwork) now relied to a great extent on material presentation, with students mostly listening to the teacher and barely responding to questions asked. Face-to-face contact was inhibited, students rarely turned their cameras on reporting either lack of ones or poor quality internet connection. There were no legal regulations that the univerisity could relate to in order to impose an obligation to join classes with a camera on. Stress and "screen fatigue" added to student low spirits.
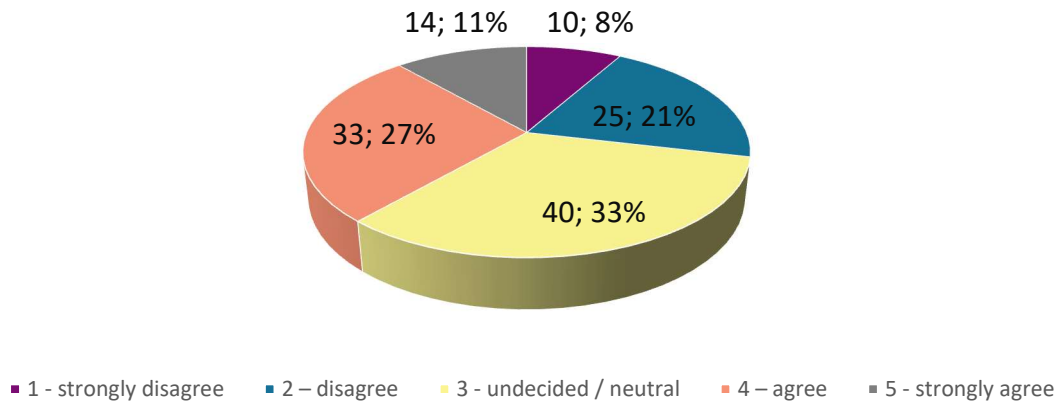
The possibility to work in groups while using Teams was much later discovered and exploited; first using private channels, later in 2021 breakout rooms. Both groups – students and teachers – reported a considerable increase in teir workload.

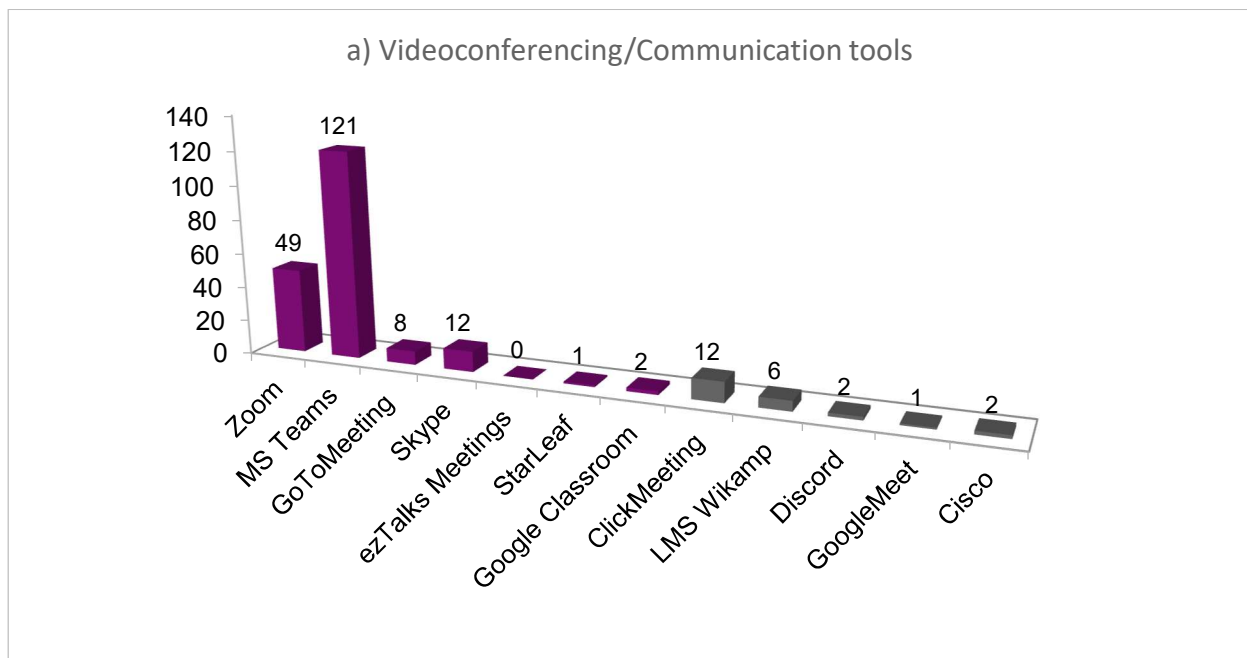## Student and teacher perspective

Students perspective

This section deals with the delivery of classes. It is analysed based on distance learning tools and techniques. In the survey students were asked twelve questions in this category. The results are summarized in the figures below.

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Face-to-face (camera ON) communication is very important while learning remotely.

14; 11%   10; 8%

25; 21%

40; 33%

33; 27%

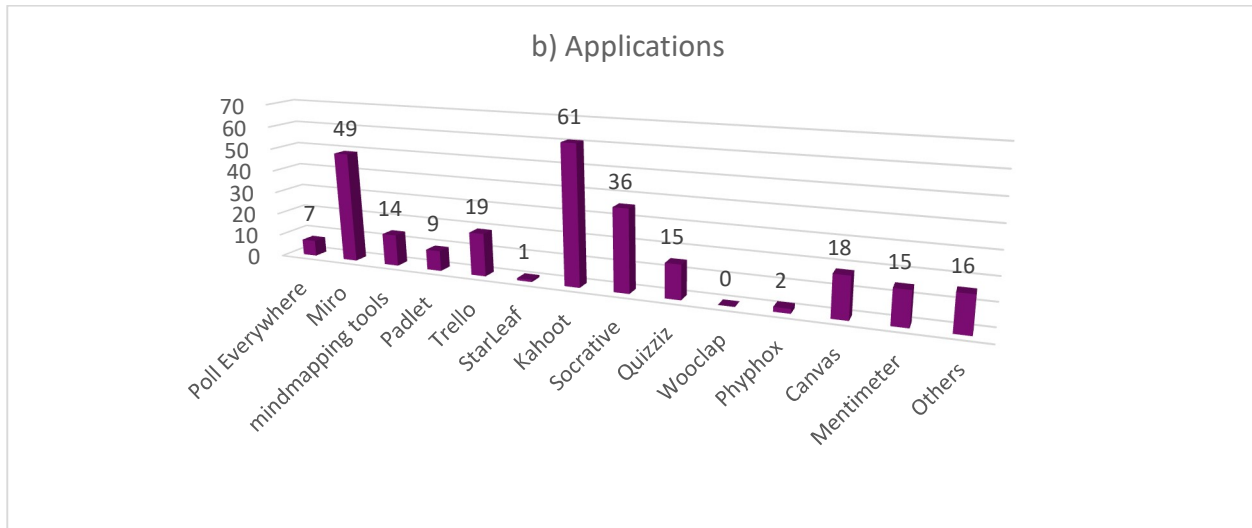- 1 - strongly disagree - 2 – disagree - 3 - undecided / neutral - 4 – agree - 5 - strongly agree

Distribution of answers is close to Gaussian distribution. The great majority of students (n=47; 38%) consider Face-to-face (camera ON) communication to be essential while learning remotely. According to the 1/3 of respondents (n=40; 33%) this aspect is irrelevant. The rest of respondents, only 29% (n=35), consider face-to face communication to be insignificant while learning remotely.

Software tools used for online learning after the outbreak of Covid-19 pandemic:

a) Videoconferencing/Communication tools

Zoom 49, MS Teams 121, GoToMeeting 8, Skype 12, ezTalks Meetings 0, StarLeaf 1, Google Classroom 2, ClickMeeting 12, LMS Wikamp 6, Discord 2, GoogleMeet 1, Cisco 2
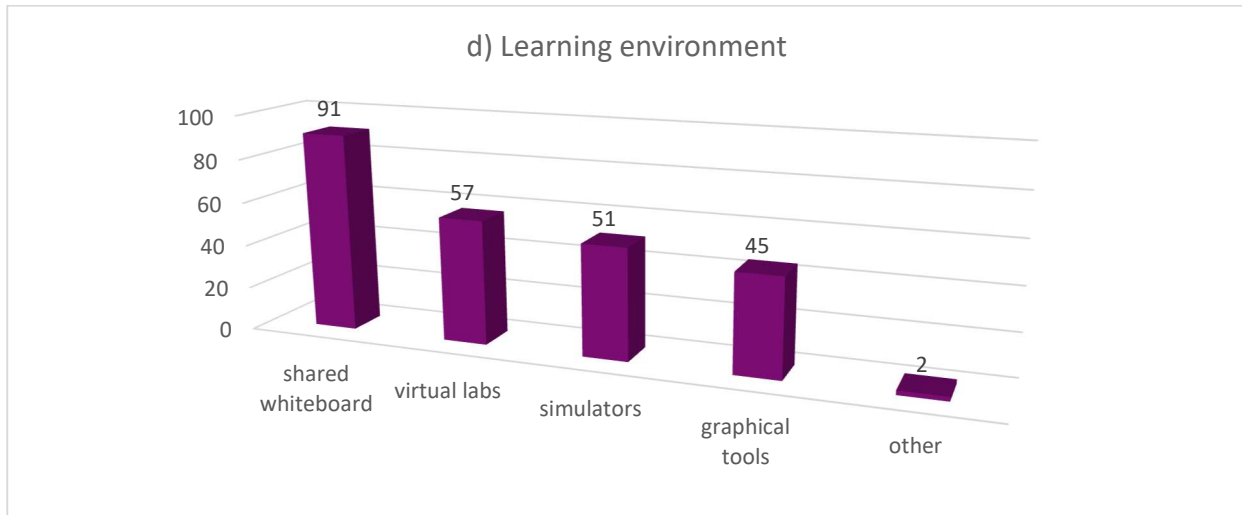
Nearly all students (n=121; 99%) used MS Teams during distance learning. Zoom, Skype and ClickMeeting were very popular as well, respectively 40% (n=49), 10% (n=12) and 10% (n=12). None of the students used ezTalks Meetings oraz StarLeaf.

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b) Applications

During remote classes, the most popular application was Kahoot, which was indicated by half of the respondents (n = 61; 50%). The Miro (n = 49; 40%) and Socrative (n = 36; 30%) applications were very popular. Every seventh student used Trello (n = 19; 16%) and Canvas (n = 18; 15%), and every eighth Quizziz (n = 15; 13%), Mentimeter (n = 15; 13%), and mindmapping tools (n = 14; 11%). None of the Lodz University of Technology students indicated the following tools: StarLeaf and Woolclap.
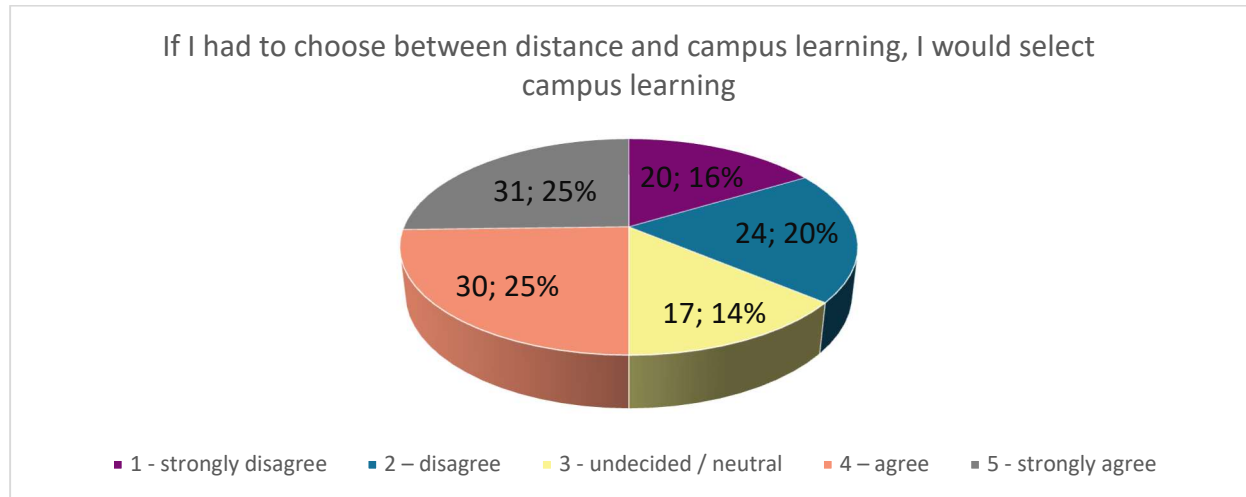

c) Teaching videos
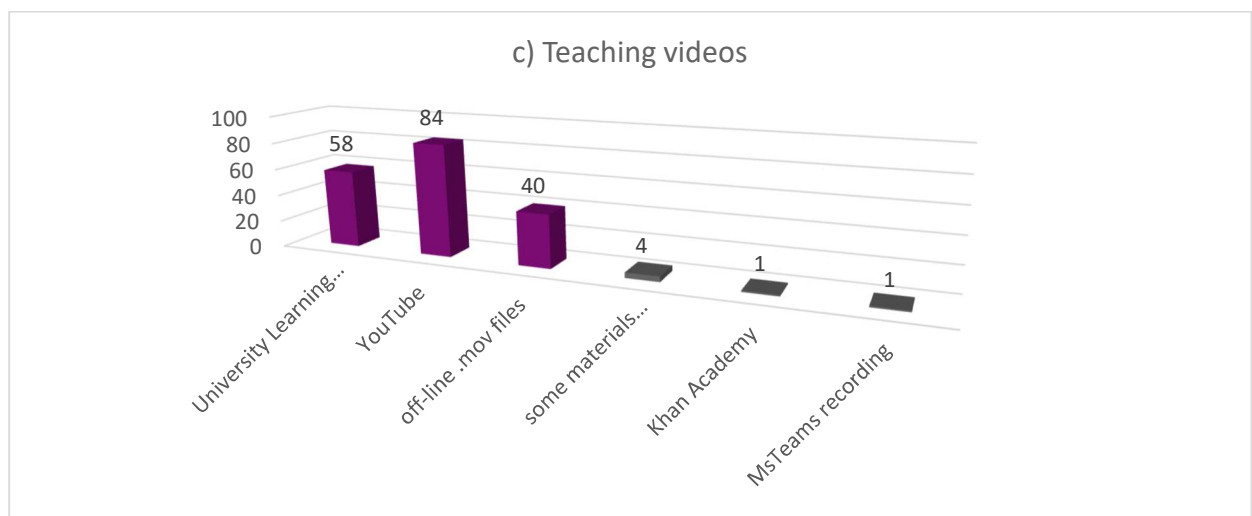
YouTube (n = 84; 69%) and the University Learning Management System (Moodle) (n = 58; 48%) were the most frequently used video software tools. In every third case, off-line .mov files (n = 40; 33%) were used. In a few cases (n = 4; 3%), teachers used their own recordings.
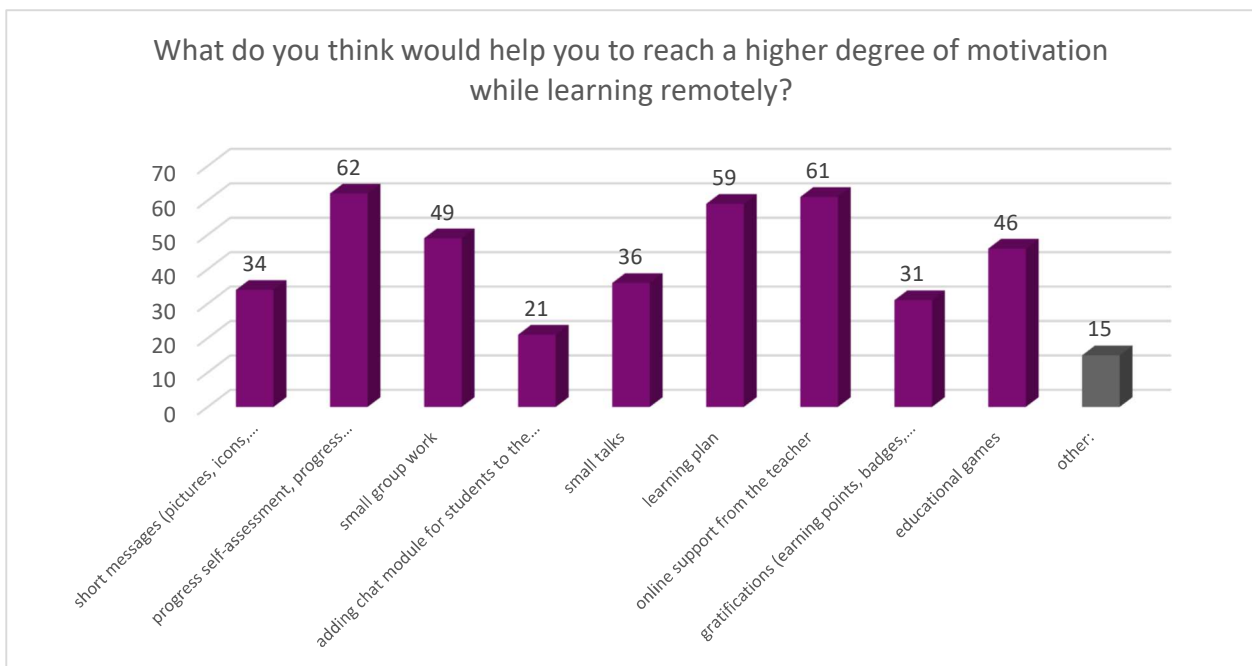
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d) Learning environment

The most popular learning environment was the shared whiteboard (n = 91; 75%), used by ¾ students. Virtual labs (n = 57; 47%) and simulators (n = 51; 42%) were commonly used.

e) Social networks
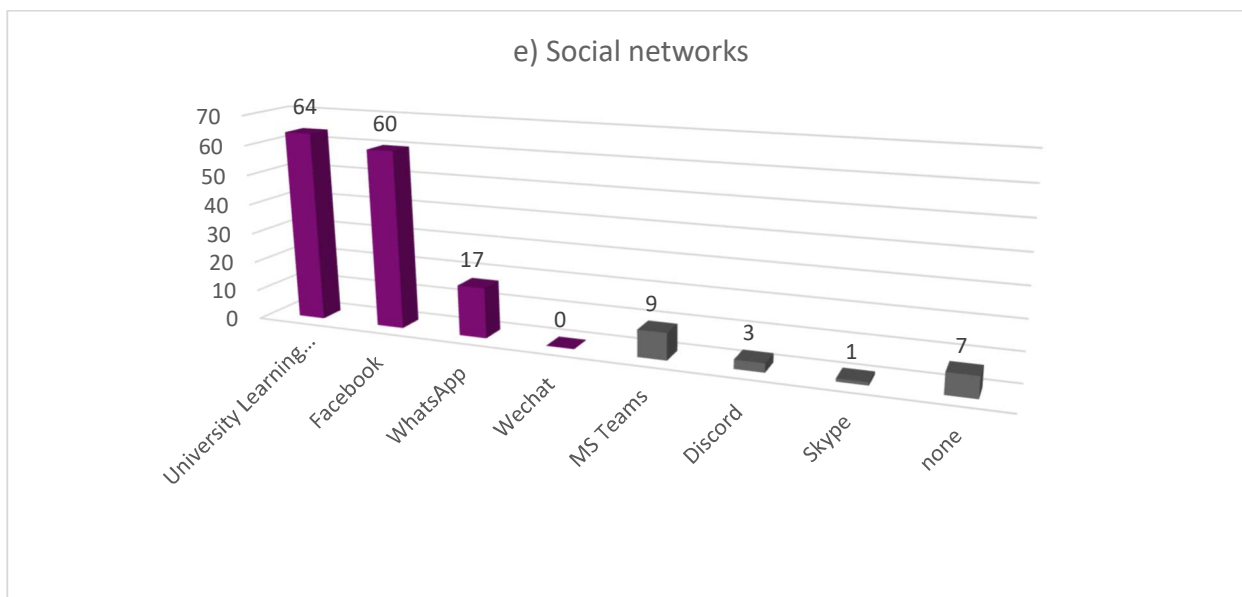
Every second student used the University Learning Management System (Moodle) (n = 64; 52%) and Facebook (n = 60; 49%) as social media. Relatively few students used WhatsApp (n = 17; 14%). Among the respondents 7 people (6%) were not a member of any social group.

If I had to choose between distance and campus learning, I would select campus learning

- 1 - strongly disagree
- 2 – disagree
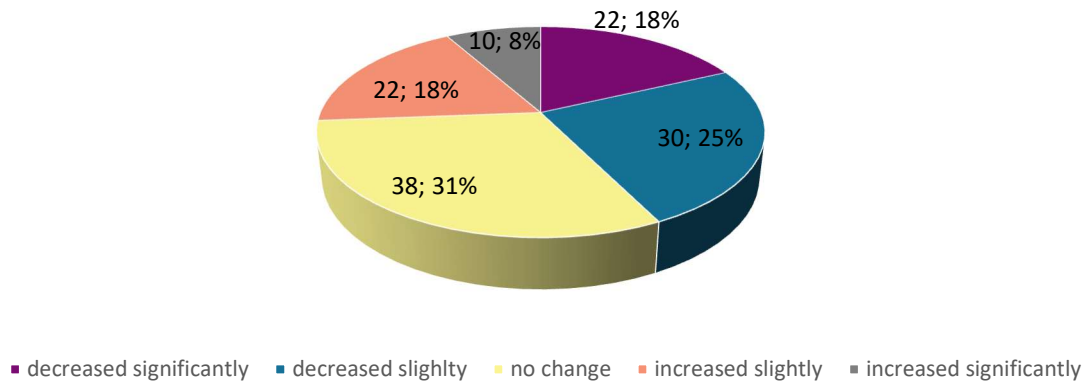- 3 - undecided / neutral
- 4 – agree
- 5 - strongly agree

TUL students definitely prefer campus learning to distance learning, this format was chosen by half of the respondents (n = 61; 50%), the opposite opinion was expressed by 36% of the respondents (n = 44). For only 14% of the respondents (n = 17) it makes no difference whether the classes are held remotely or on campus.

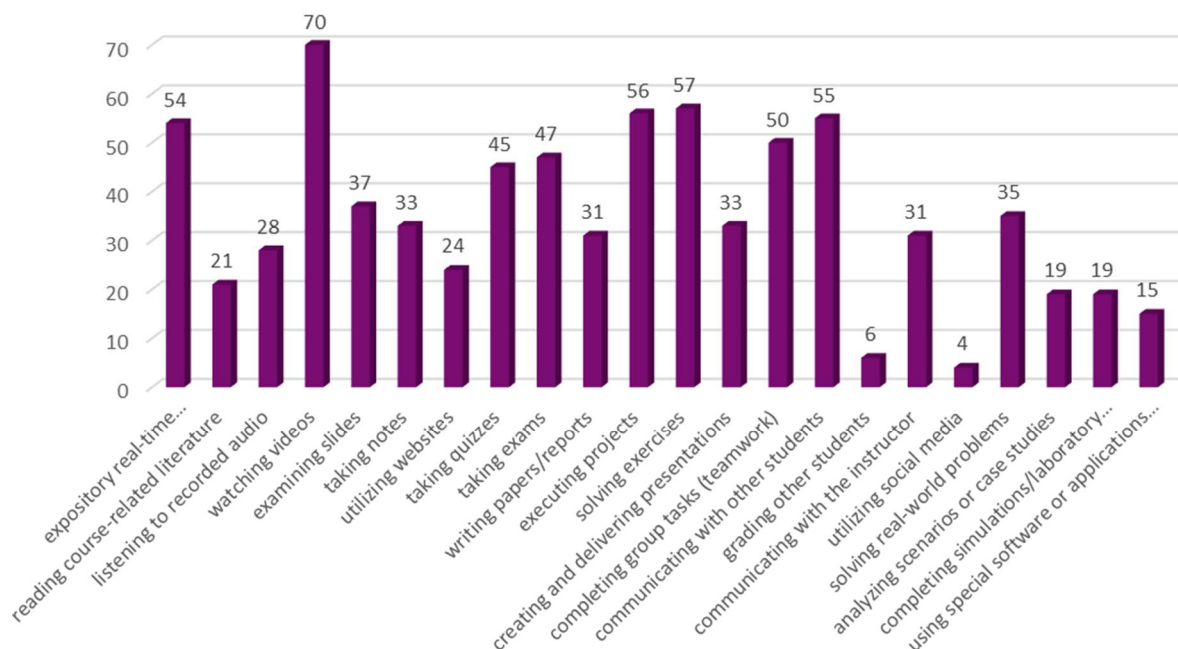## What do you think would help you to reach a higher degree of motivation while learning remotely?

According to students, the best motivators during distance learning would be progress self-assessment, progress monitoring (n = 62; 51%), online support from the teacher (n = 61; 50%) and learning plan (n = 59; 48%), these indications were provided by every second student. The least motivating factor was chat module for students at the subject space (n = 21; 17%).

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How would you rate your in-class activity (measured by your interaction with the teacher/peer(s) or an app) when compared to pre-pandemic period?

10; 8%

22; 18%

22; 18%

30; 25%

38; 31%

- decreased significantly
- decreased slighlty
- no change
- increased slightly
- increased significantly

Distribution of answers is close to Gaussian distribution. Students predominant indication (n = 38; 31%) was the opinion that their activity in classes measured in the teacher / student interaction did not change during the pandemic. A greater number of students indicated a decrease in their activity (n = 52; 43%) in relation to the group whose activity increased (n = 32; 26%).

What types of activities were required in your favourite online course?

Activity	Value
expository real-time...	54
reading course-related literature	21
listening to recorded audio	28
watching videos	70
examining slides	37
taking notes	33
utilizing websites	24
taking quizzes	45
taking exams	47
writing papers/reports	31
executing projects	56
solving exercises	57
creating and delivering presentations	33
completing group tasks (teamwork)	50
communicating with other students	55
grading other students	6
communicating with the instructor	31
utilizing social media	4
solving real-world problems	35
analyzing scenarios or case studies	19
completing simulations/laboratory...	19
using special software or applications...	15

In the question about what types of activities were required in their favourite online course, most often students indicated watching videos (n = 70; 57%), solving exercises (n = 57; 47%), executing projects (n = 56; 46%), executing projects (n = 55; 45%) and expository real-time writing / drawing

23

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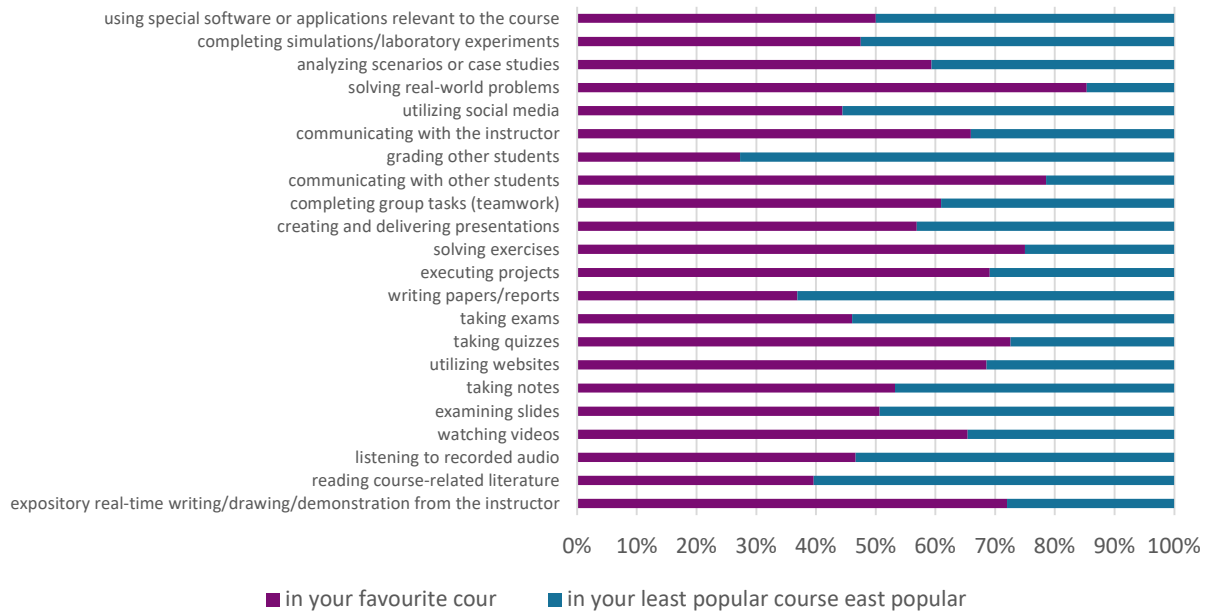Politechnika Łódzka
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/ demonstration from the instructor (n=54; 44%). The least popular were grading other students (n=6; 5%) and utilizing social media (n=4; 3%).
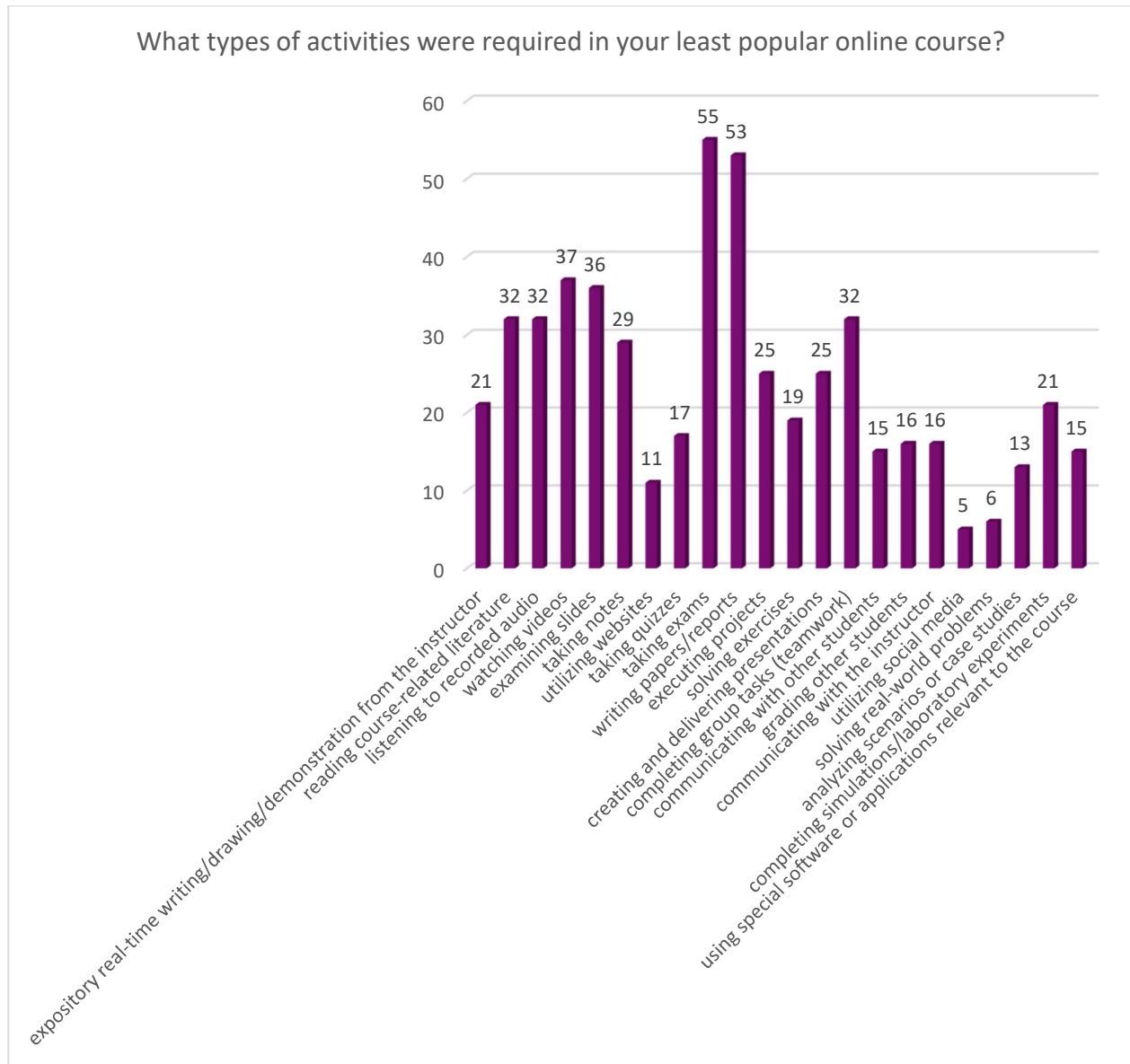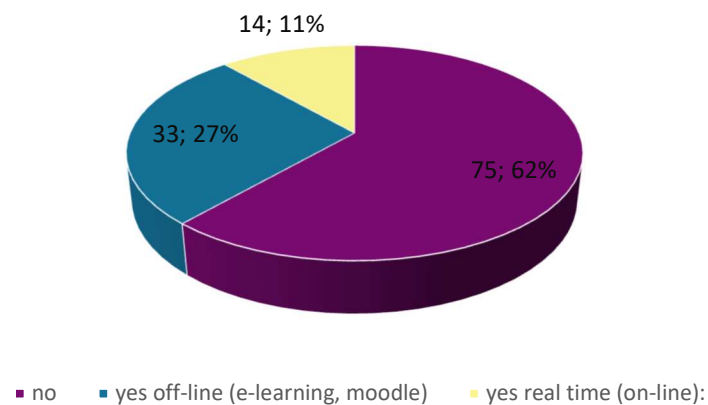

In the least popular online course were required taking exams (n = 55; 45%) and writing papers / reports (n = 53; 43%). The least number of indications received utilizing social media (n = 5; 4%) and solving real-world problems (n = 6; 5%).

The comparison of students' ratings in terms of activity types in the favorite vs least course is presented in the diagram below.

What types of activities were required in online course?

Legend:
- in your favourite cour
- in your least popular course east popular

Activities listed:
- using special software or applications relevant to the course
- completing simulations/laboratory experiments
- analyzing scenarios or case studies
- solving real-world problems
- utilizing social media
- communicating with the instructor
- grading other students
- communicating with other students
- completing group tasks (teamwork)
- creating and delivering presentations
- solving exercises
- executing projects
- writing papers/reports
- taking exams
- taking quizzes
- utilizing websites
- taking notes
- examining slides
- watching videos
- listening to recorded audio
- reading course-related literature
- expository real-time writing/drawing/demonstration from the instructor

Did you attend any distance classes before the pandemic?

- 14; 11%
- 33; 27%
- 75; 62%

Legend:
- no
- yes off-line (e-learning, moodle)
- yes real time (on-line):

TUL students had no experience in distance learning. More than half (n = 75; 62%) of students declared they had not taken distance classes before the pandemic. In the remaining group, 27% students attended off-line classes (n = 33), every tenth student experienced synchronous online education (n = 14; 11%).

Teachers perspective

The graph below shows how important is face-to-face (camera on) communication while learning remotely.

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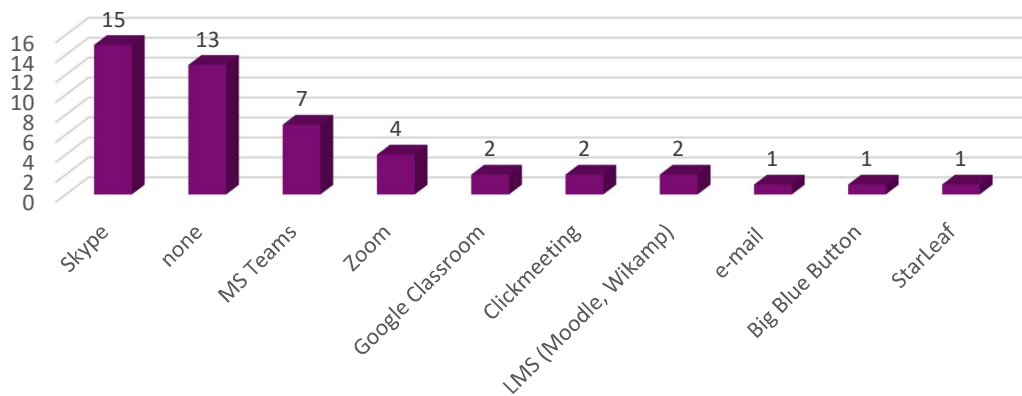**Face-to-face (camera ON) communication is very important while learning remotly;**
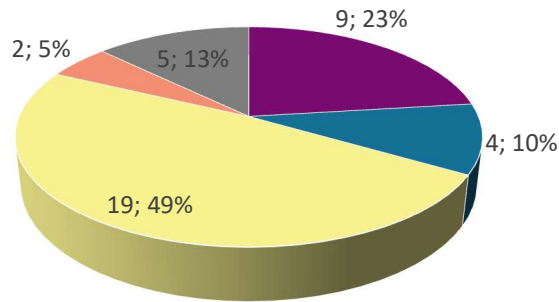
- agree
- disagree
- strongly agree
- strongly disagree
- undecided / neutral

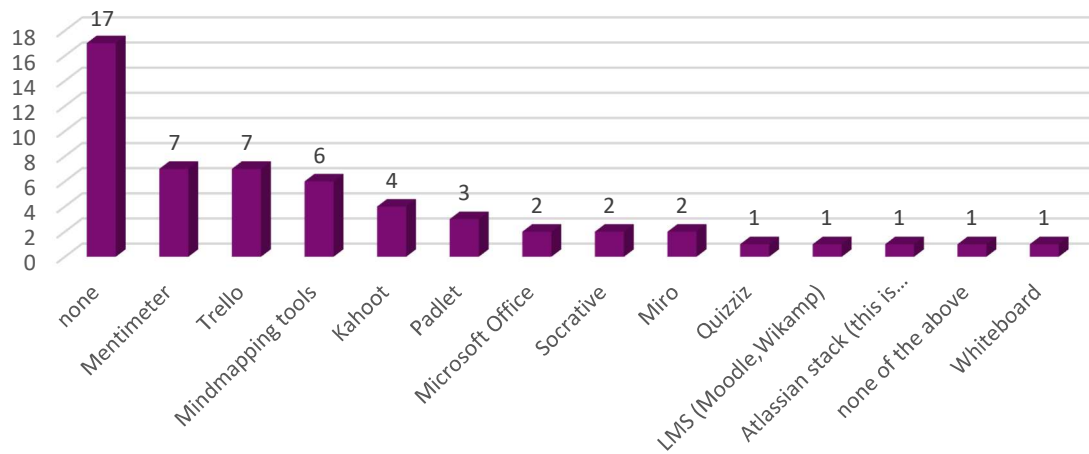Only 13 % (n=5) respondents were undecided/neutral, 10% (n=4) marked disagree and 5 % (n=2) strongly disagree.

Below are teachers' responses to questions related to teaching during the pandemic, the support, tools, and difficulties they felt during this time.

What software tools have you used for online teaching before the Covid-19 pandemic?
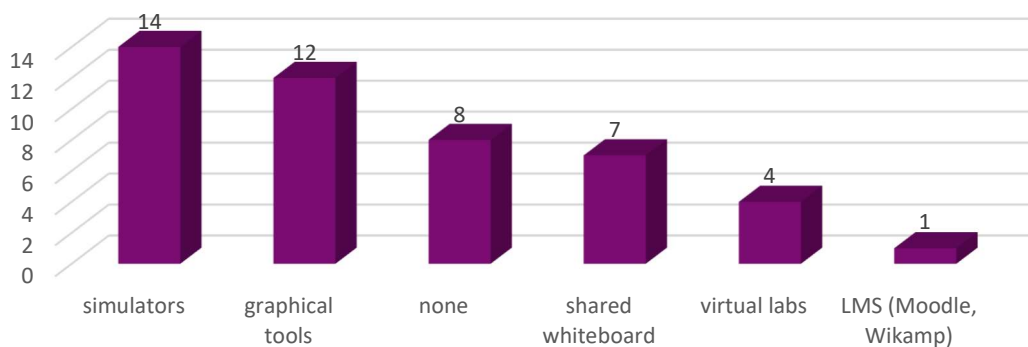
a) Videoconferencing/Comunication tools

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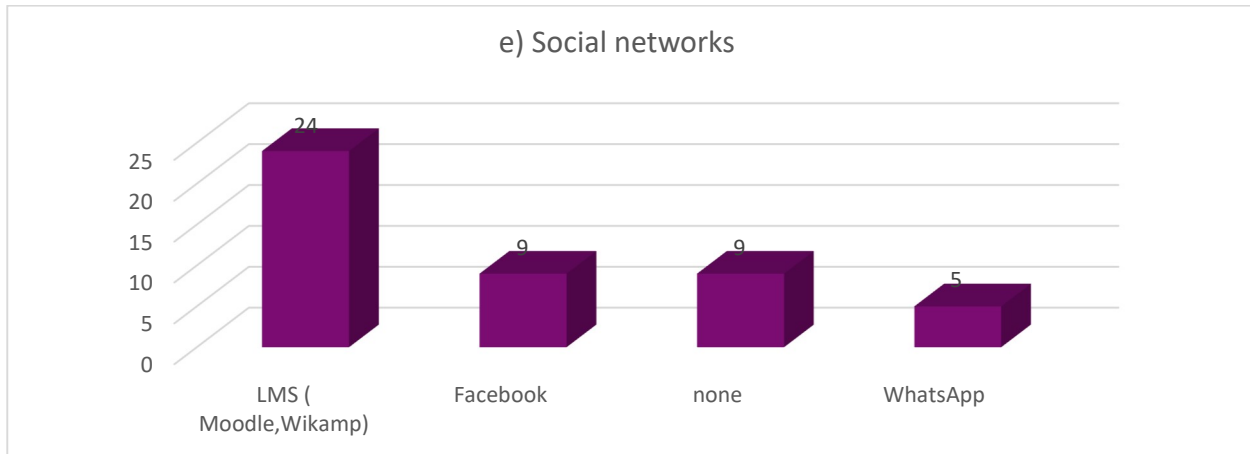Erasmus+ Programme
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b) Applications

Category	Value
none	17
Mentimeter	7
Trello	7
Mindmapping tools	6
Kahoot	4
Padlet	3
Microsoft Office	2
Socrative	2
Miro	2
Quizziz	1
LMS (Moodle, Wikamp)	1
Atlassian stack (this is...	1
none of the above	1
Whiteboard	1

c) Teaching videos

Category	Value
LMS (Moodle,Wikamp)	13
none	10
YouTube	9
off-line .mov files	6
avi files	1

d) Learning enviroment

Category	Value
simulators	14
graphical tools	12
none	8
shared whiteboard	7
virtual labs	4
LMS (Moodle, Wikamp)	1

27

e) Social networks

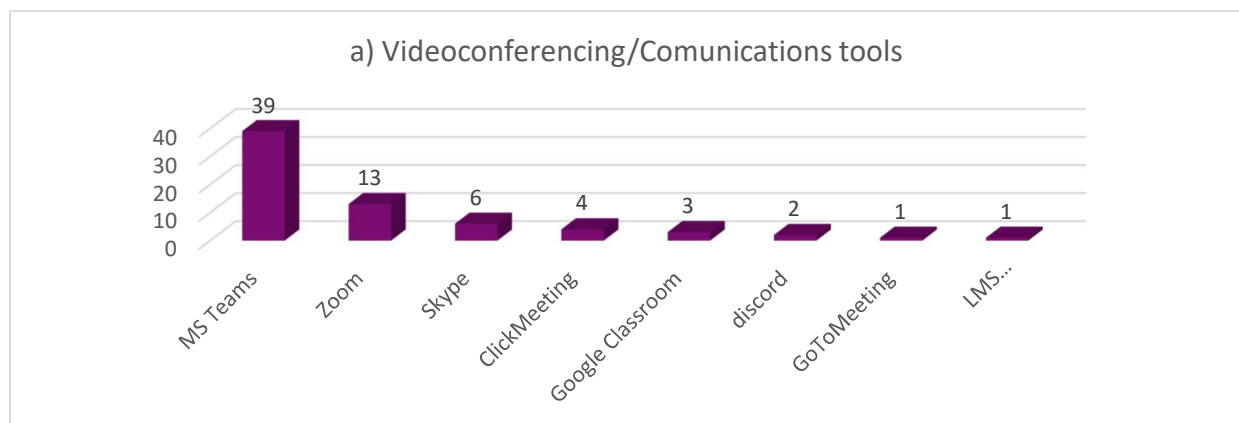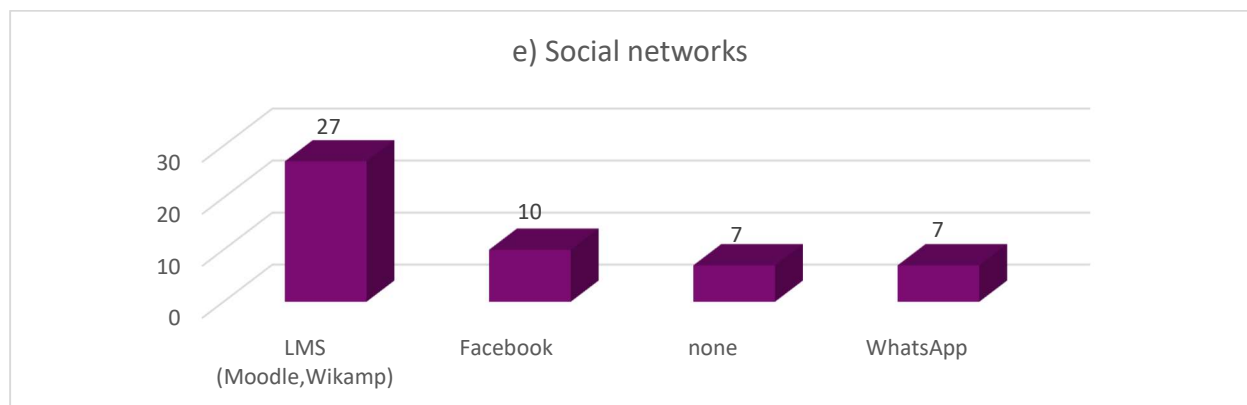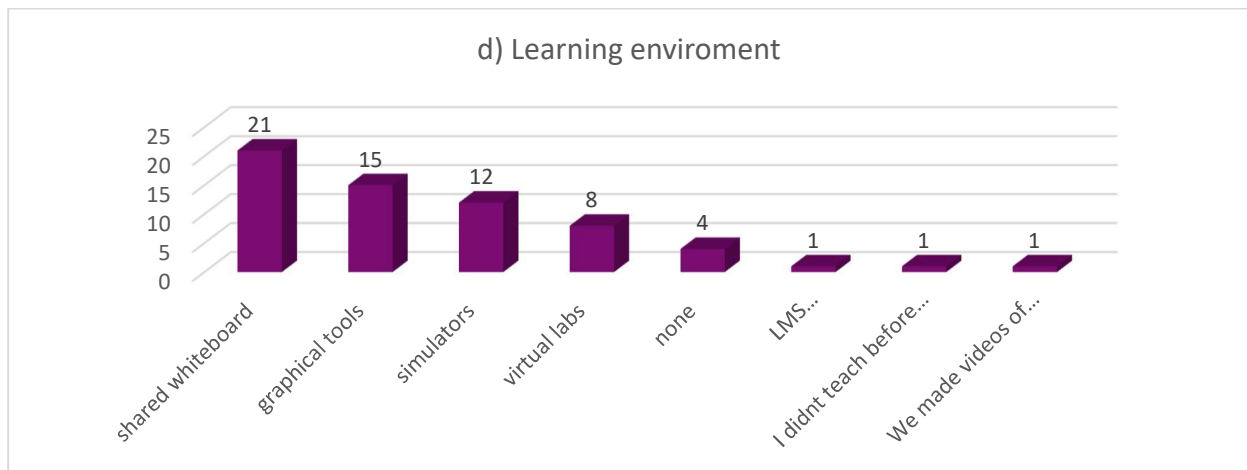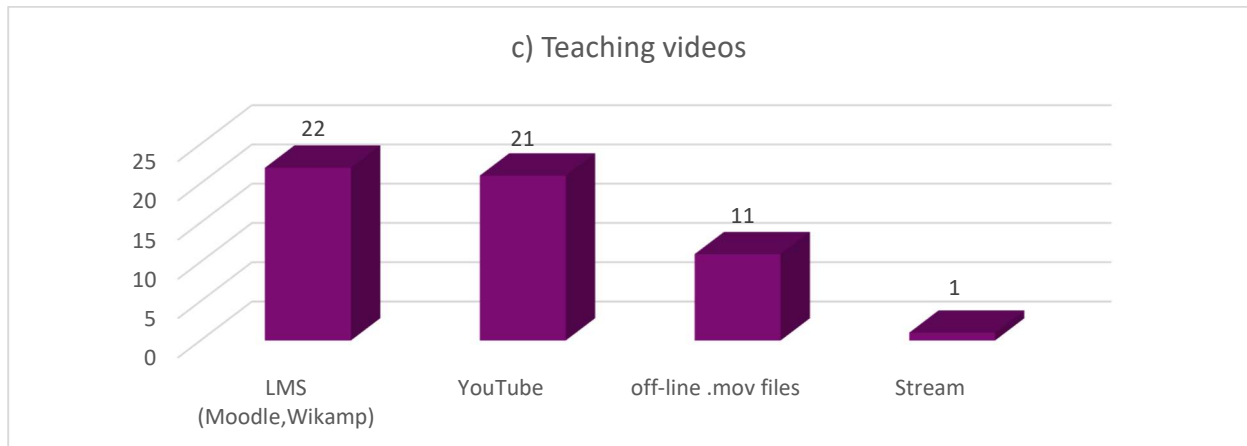| Tool	Value
LMS (Moodle,Wikamp)	24
Facebook	9
none	9
WhatsApp	5

Before the COVID-19 pandemic, 33% (n=13) respondents did not use any videoconferencing tools, and applications 43% (n=17). As for teaching videos over 33% teachers used LMS (Moodle; Wikamp), 25% didn't use any. As we can see LMS (Moodle; Wikamp) was also was highly rated (58%; n=24) as a tool in social networks. Considering learning environment popular tools were: simulators (35%; n=14) and graphical tools (30% n=12).
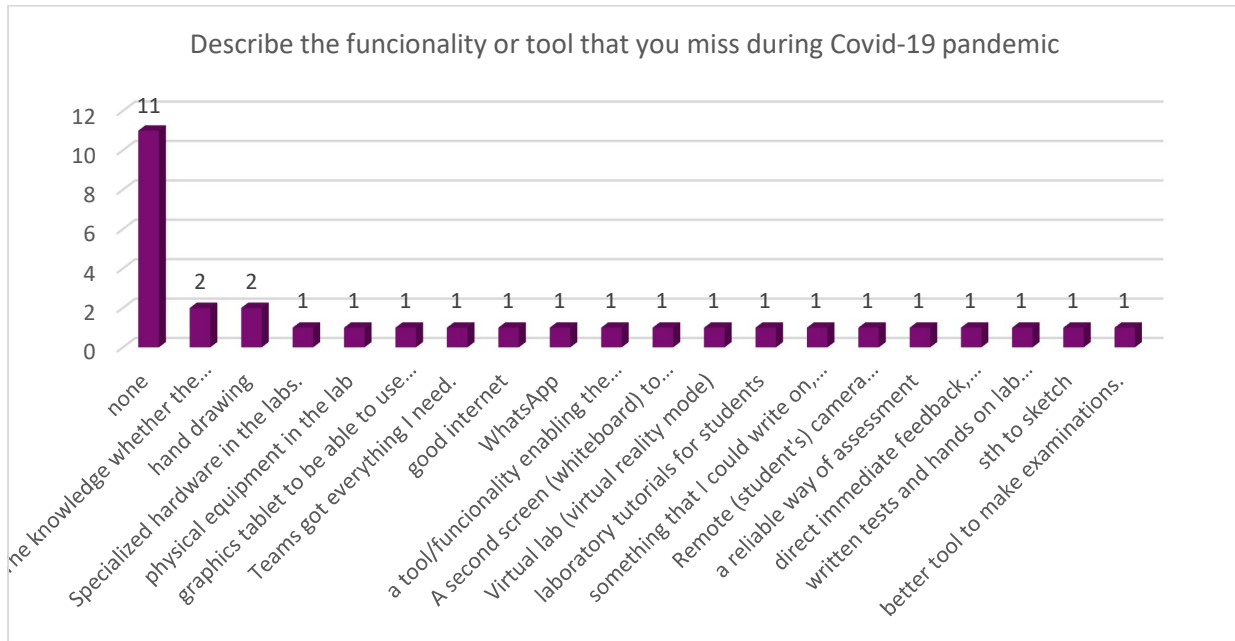
The graphs below show the situation during the pandemic.

What software tools have you used for online teaching during the Covid-19 pandemic?

a) Videoconferencing/Comunications tools

Tool	Value
MS Teams	39
Zoom	13
Skype	6
ClickMeeting	4
Google Classroom	3
discord	2
GoToMeeting	1
LMS...	1

b) Applications

Tool	Value
Mentimeter	12
Miro	12
none	11
mindmapping tools	11
Socrative	9
Canvas	7
Trello	6
Kahoot	5
Padlet	5
Moodle	2
Quizzies	1
LMS...	1
Atlassian stack	1

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c) Teaching videos
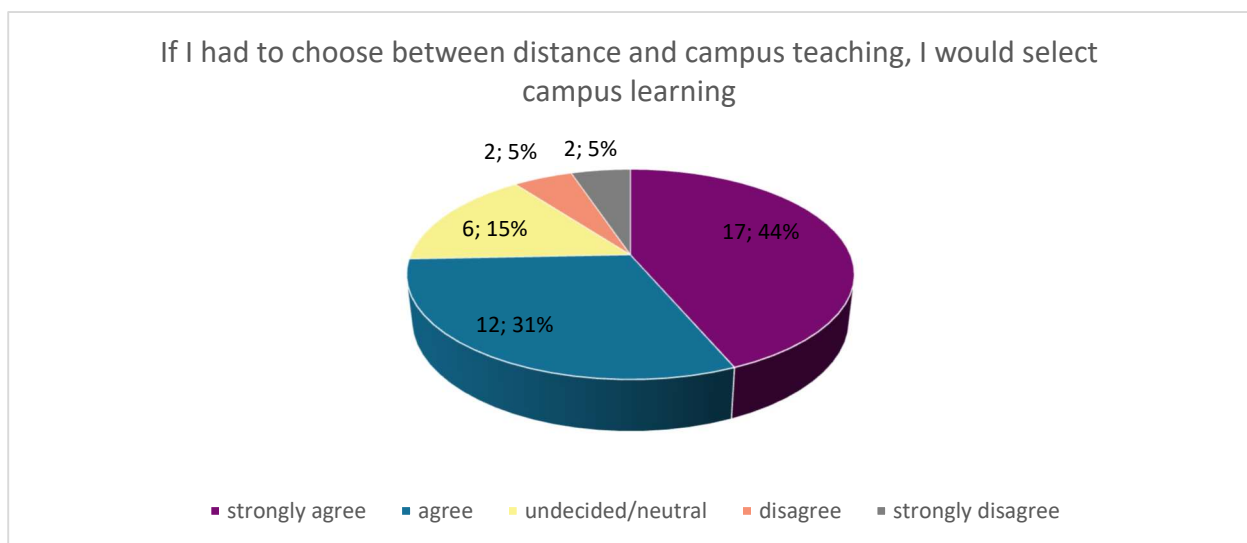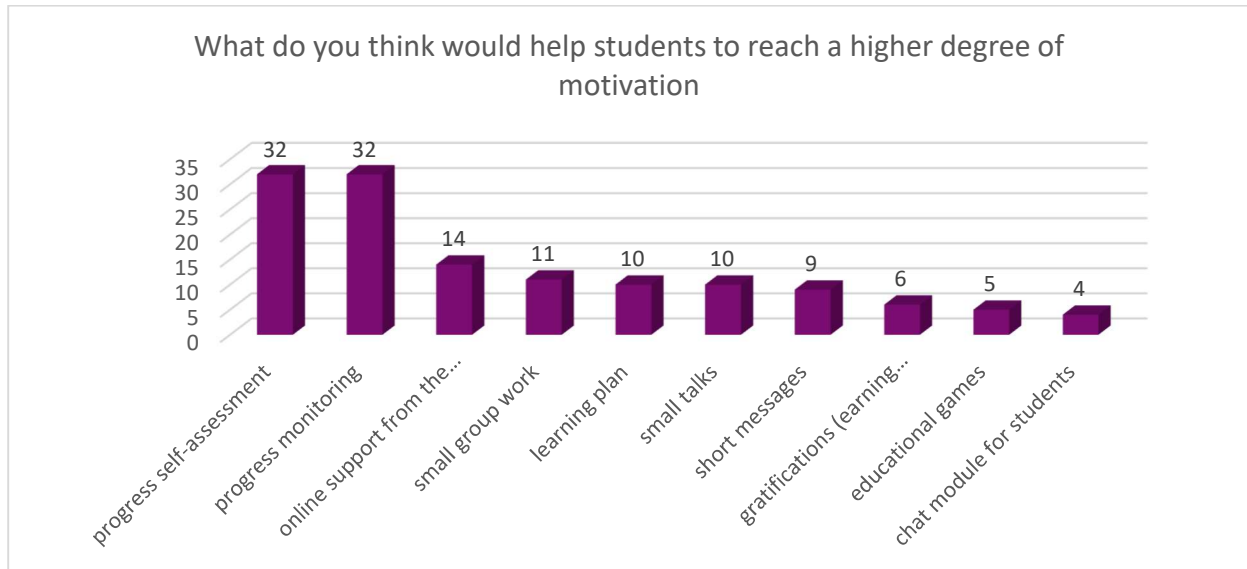

d) Learning enviroment

e) Social networks

During the pandemic, all the respondents used videoconference platforms 100% (n=39) of respondents marked MSTeams. 28% (n=11) of respondents still did not use any applications during the pandemic; however, over 30% (n=12) of teachers surveyed indicated Mentimeter and Miro. Considering teaching videos 56% (n=22) of teachers used LMS (Moodle; Wikamp) and 53% (n=21)YouTube.

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Describe the funcionality or tool that you miss during Covid-19 pandemic

28 % (n=11) of respondents didn't miss any functionality or tool during pandemic.

If I had to choose between distance and campus teaching, I would select campus learning

strongly agree   agree   undecided/neutral   disagree   strongly disagree

Most of respondents strongly agreed (n= 17; 44%) that they would choose campus learning rather than distance learning. 31% (n=12) agreed, 15% (n=6) of respondence were undecided/neutral. Only 5% of teachers (n=2) disagreed and strongly disagreed.
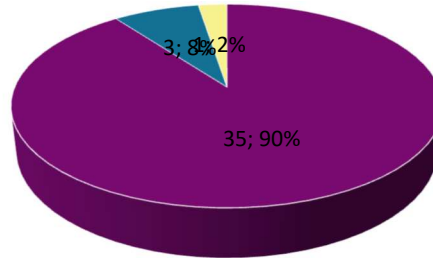
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What do you think would help students to reach a higher degree of motivation

Values: progress self-assessment 32; progress monitoring 32; online support from the... 14; small group work 11; learning plan 10; small talks 10; short messages 9; gratifications (earning... 6; educational games 5; chat module for students 4

Considering the problem of student motivation, the majority of teachers indicated self-evaluation of progress (82%;n=32) and monitoring of progress (82%;n=32) as a condition necessary to obtain more motivation among students.

This graph shows students in-class activity.

In the class you provided online or in blended mode (tutorial/projects, etc.), how would you rate students in-class activity?

- 4; 10%
- 19; 49%
- 16; 41%

- between 20% and 50% (of the time spent in interacting)
- less than 20% (of the time spent in interacting)
- more than 50% (of the time spent in interacting)
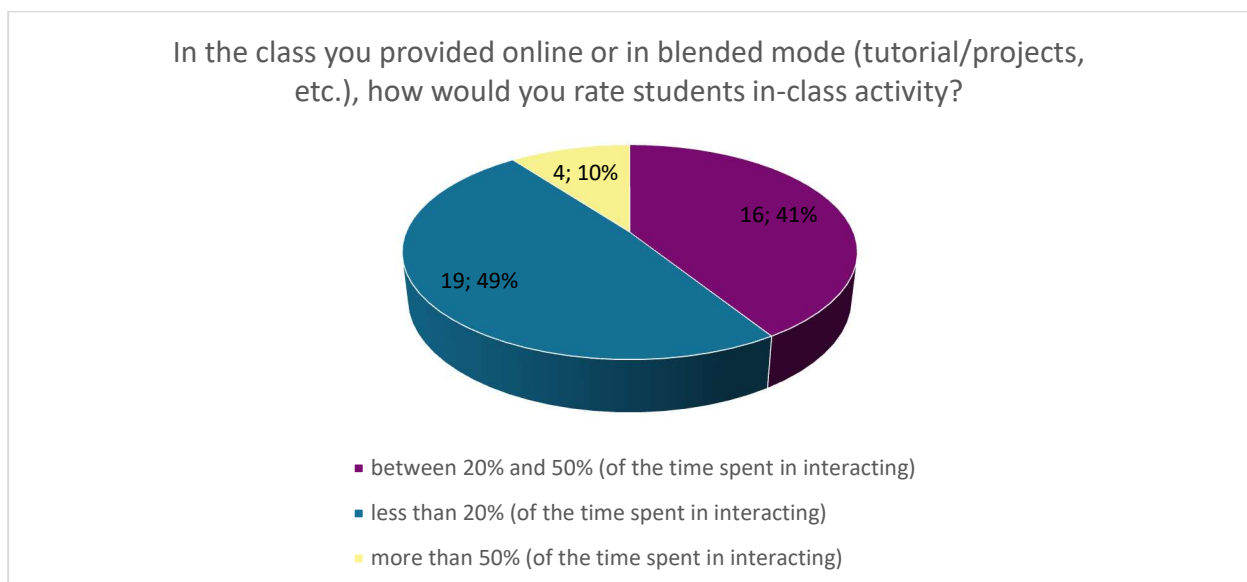
Next graph/diagram shows how the COVID-19 pandemic affected teaching during the second semester of the 2019/2020 . In majority classroom teaching was replacement immediately by distance teaching and learning (90%; n= 35). 8 % (n=3) of teachers answered that some classes were suspended. Only 2% (n=1) claimed that Covid- 19 pandemic didn't affected at all.
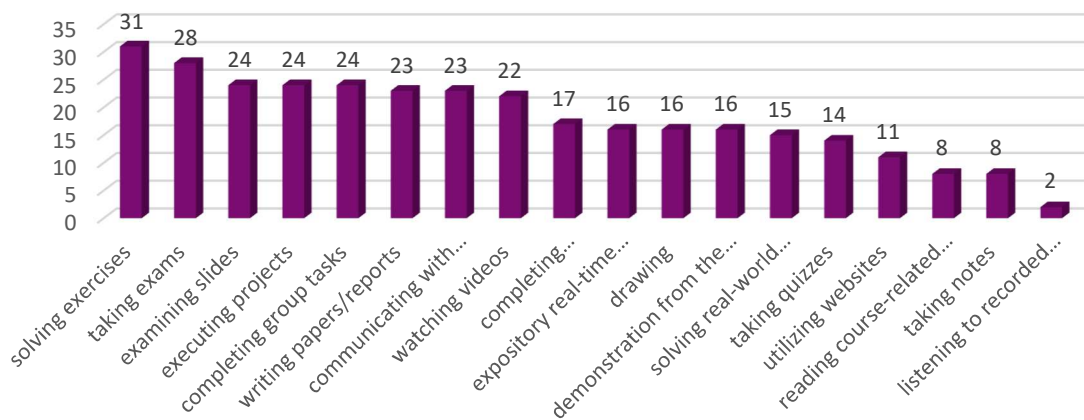
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How did Covid-19 pandemic affect teaching at your institution in the
second semester 2019/2020

3; 8% 2%

35; 90%

- classroom teaching was replaced immediately by distance teaching and learning
- some classes (eg. practical classes, labs) were suspended
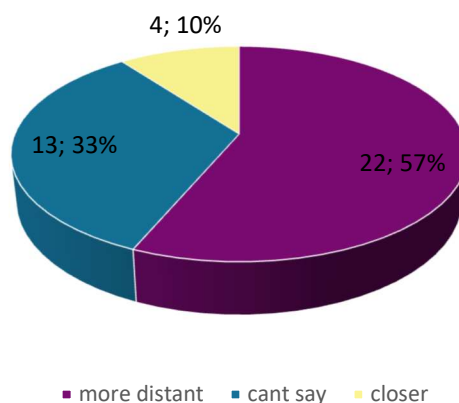- it was not affected

From the graph below we can see the variety of activities proposed to the students while teaching remotely during the COVID-19 pandemic.

What types of students activities did you use while teaching remotely
during the Covid-19 pandemic?

The graph below shows us how distance teaching has affected teachers' interactions with students.

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How does distance teaching affect your relationship with students?

As we can see majority of respondents (57%; n= 22) claimed that remote teaching has caused more distance between the teacher and the students. 33% (n=13) of teachers were not able to answer the question asked . Only 10% (n=4) stands on the position that distance learning has brought teachers closer to students.

Conclusions

Research shows quite significant difference in the students' and teachers' perception of the importance of the communication channel, which is Face-to-face (camera on) during distance learning. According to the ¾ of teachers it is a key element of the distance learning, while for students it is of little or no importance.

The analysis of the use of software tools for online teaching and learning show that during the pandemic the most popular were:

· Videoconferencing / Communication tool: MS Teams, indicated by both students and teachers unanimously;

· Applications: Kahoot, Miro, Socrative – indicated by students, and Miro, Mentimeter and mindmapping tools indicated by teachers;

· Teaching videos: YouTUbe and LSM (Moodle, Wikamp), which was indicated by both students and teachers;

· The learning environment: shared whiteboard, indicated by both students and teachers;

· Social networks: LSM platform (Moodle, Wikamp) and Facebook, unanimously indicated by both students and teachers;

While the above consistence of both groups in relation to the communication tools used during distance learning is not surprising, the selection of the form of education, distance or campus learning, is divergent. Over ¾ of teachers prefer campus learning, while only half of the surveyed students indicated the preference for campus learning.

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Students and teachers agree that progress self-assessment and progress monitoring, followed by online support from the teacher and small group work, are the main factors that allow students to reach a higher degree of motivation while learning remotely.

Among teachers, the most popular form of activating students was solving exercises, taking exams and writing papers / reports. These forms were not assessed positively by students. Taking exams and writing papers / reports most frequently were selected by students as required in the least popular online course.

Assessment

University perspective

(any university guidelines published on this? any common practices? on campus or online? same assessment criteria or amended? on campus or online? rules of academic inegrity – anti-plagiarism or cheating practices/, etc.)

The policy on assessment was evolving troughout the whole period of the pandemic. In the initial period, as teaching on campus was suspended and both teachers and students struggled with the shift to an online mode, there was a recommendation that all testing and other forms of assessment should be postponed till all on campus activities come back to normal and teachers will be able to verify the achievement of learning outcomes as defined in course syllabi. However, with the prolonged lockdown and considerably successful implementation of digital solutions, the university decided to amend their procedures and allowed course instructors to modify the assessment forms provided student consent was given. Detailed, uniform rules were introduced for the conduct of oral and written assessments as well as diploma examinations.

Oral assessments

1. to be conducted via Teams or webinar platform only (online appointments made in advance)

2. with cameras and microphones on, student identity confirmed with student ID presented to the camera

3. day, time and all questions asked recorded on answer sheets/rubrics and stored for reference

Written assessments

1. to be conducted real time via WIKAMP (university LMS) - mainly interactive tests and assignments for upload or direct mailing

2. files with examination tasks were password protected

3. online monitoring of student integrity while in exam session via Teams – teachers were entitled to ask their students to keep their cameras and microphones on throught the whole activity

4. limited time – max. 30 minutes for upload or returning mail since the finish time

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5. regular university anti plagiarism and anti cheating procedures in use

<u>Diploma examinations</u>

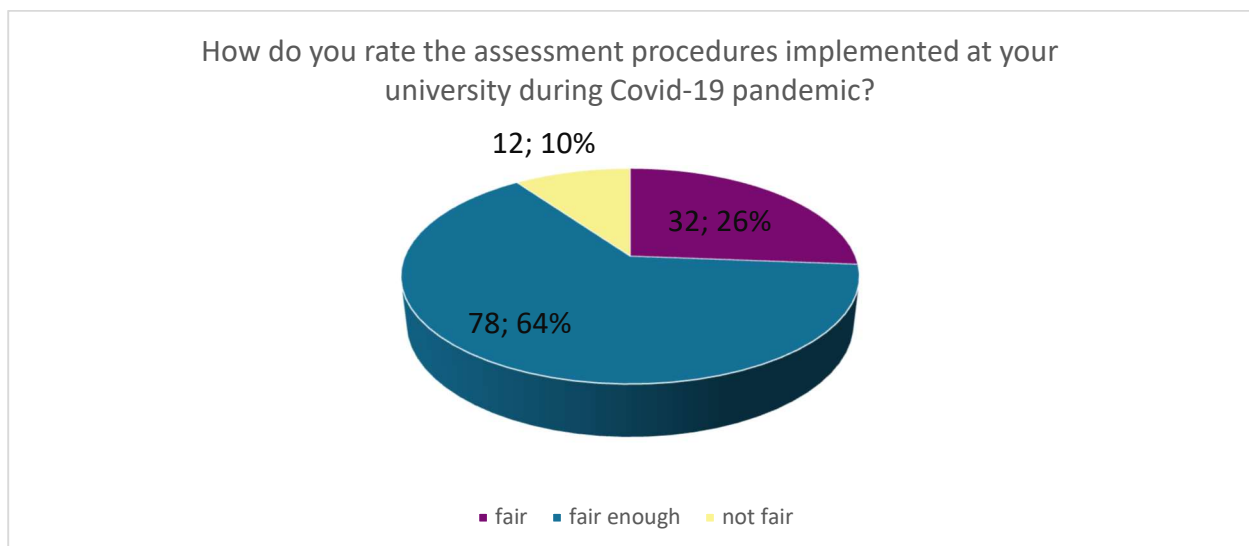General rules for the conduct of diploma examinations were defined at the minsterial level. These included:

1. online mode available only at the request of the student

2.   to be conducted only via Teams (online appointments made in advance)

3. with cameras and microphones on, student identity confirmed with student ID presented to the camera

4. student screen sharing throught the whole examination

5. online recording not allowed, all activities noted down and presented in a report.

Still, some diploma examinations and project or practical work assessments were carried out face-to-face once on-campus activities were resumed.
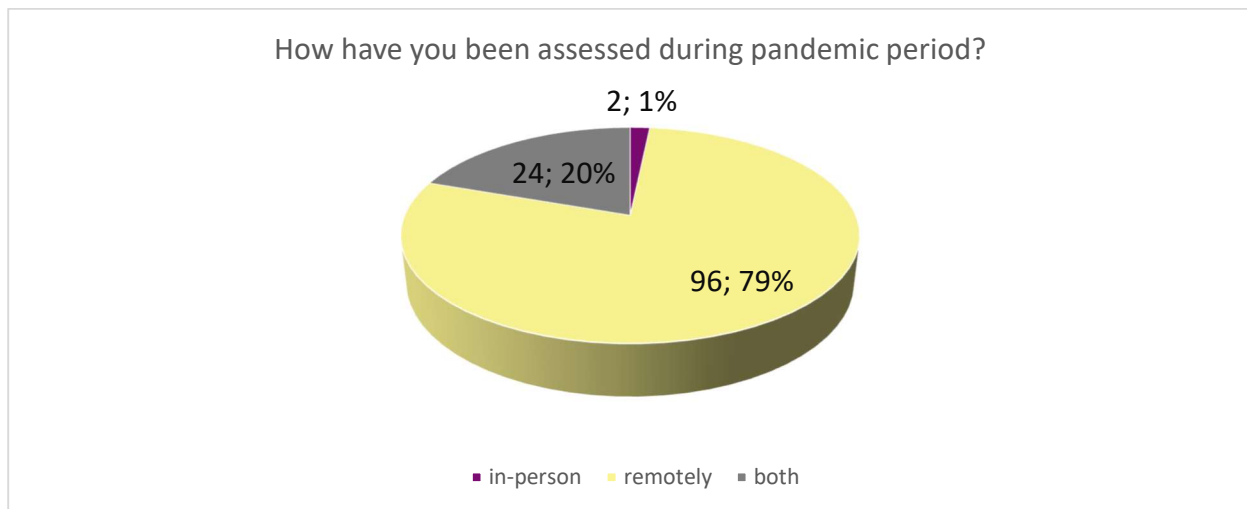
Student and teacher perspective
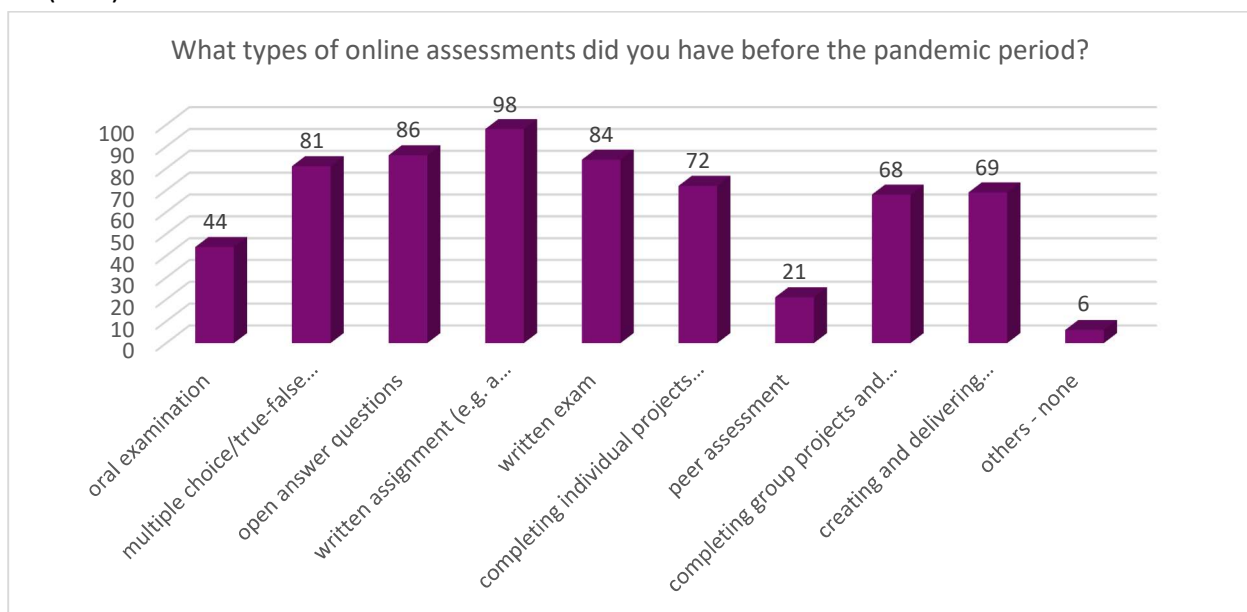
Students perspective

This section deals with the assessment of learning outcomes achieved through distance learning techniques and methods. Four questions were asked students in this category and the results are summarized in the figures below.

How do you rate the assessment procedures implemented at your university during Covid-19 pandemic?

12; 10%

32; 26%

78; 64%

■ fair   ■ fair enough   ■ not fair

Most of the students (n = 110; 90%) positively rated the assessment procedures implemented at university during Covid-19 pandemic. Only every tenth respondent (n = 12; 10%) was of a different opinion.

How have you been assessed during pandemic period?

2; 1%

24; 20%

96; 79%

■ in-person ■ remotely ■ both

During the pandemic period, almost all students were assessed remotely (n = 120; 99%), of which 24 (20%) were also assessed face-to-face.

What types of online assessments did you have before the pandemic period?

Category	Value
oral examination	44
multiple choice/true-false…	81
open answer questions	86
written assignment (e.g. a…	98
written exam	84
completing individual projects…	72
peer assessment	21
completing group projects and…	68
creating and delivering…	69
others - none	6

Before the pandemic period, the most popular type of remote student assessment was written assignment (e.g. a paper / report) (n = 98; 80%), and the least popular was peer assessment (n = 21; 17%).

What types of online assessments did you have during the pandemic period?
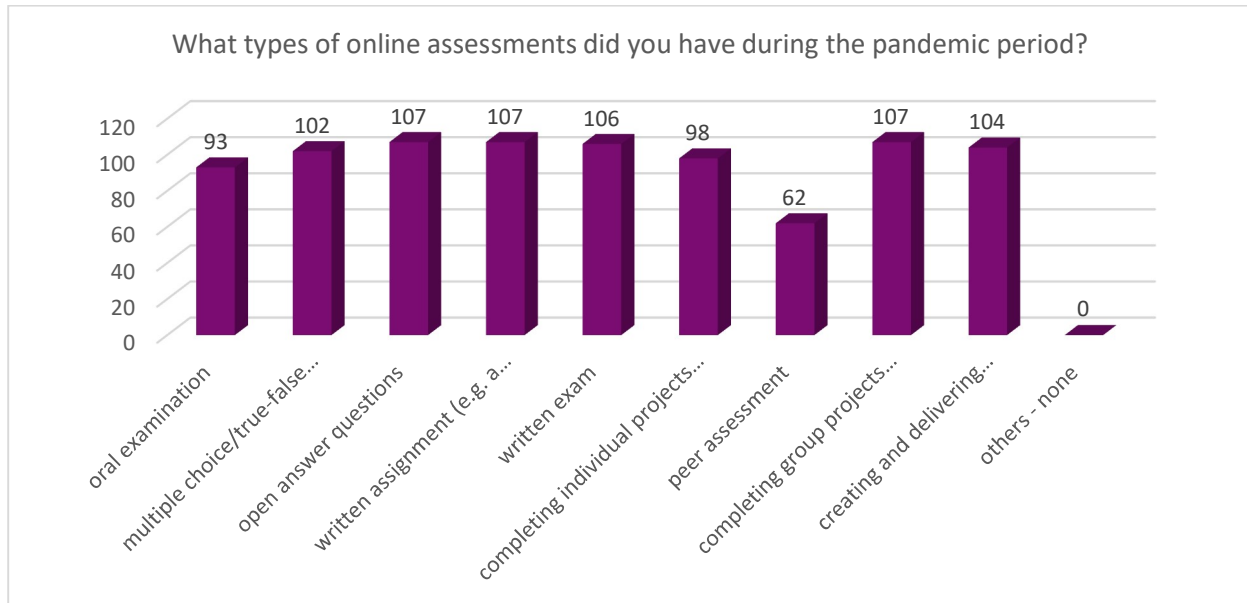
During the pandemic, in the vast majority cases (over 80%) all the listed types of remote assessment were used. The least popular was peer assessment (n = 62; 51%), although it should be noted that this answer was indicated by every second surveyed student.

The comparison of the types of online assessments used in the periods before and during the pandemic is presented in the diagram below.
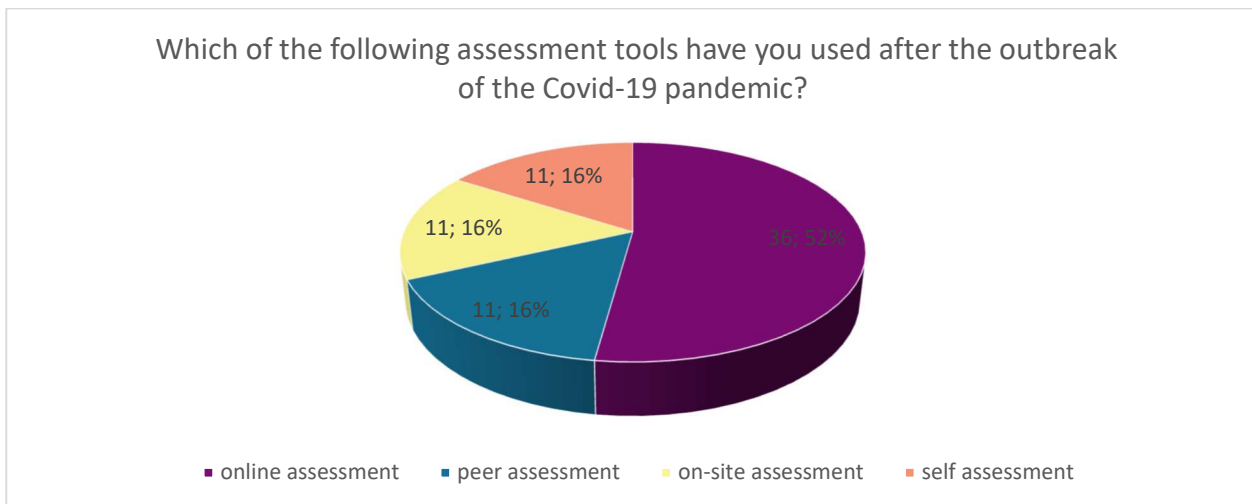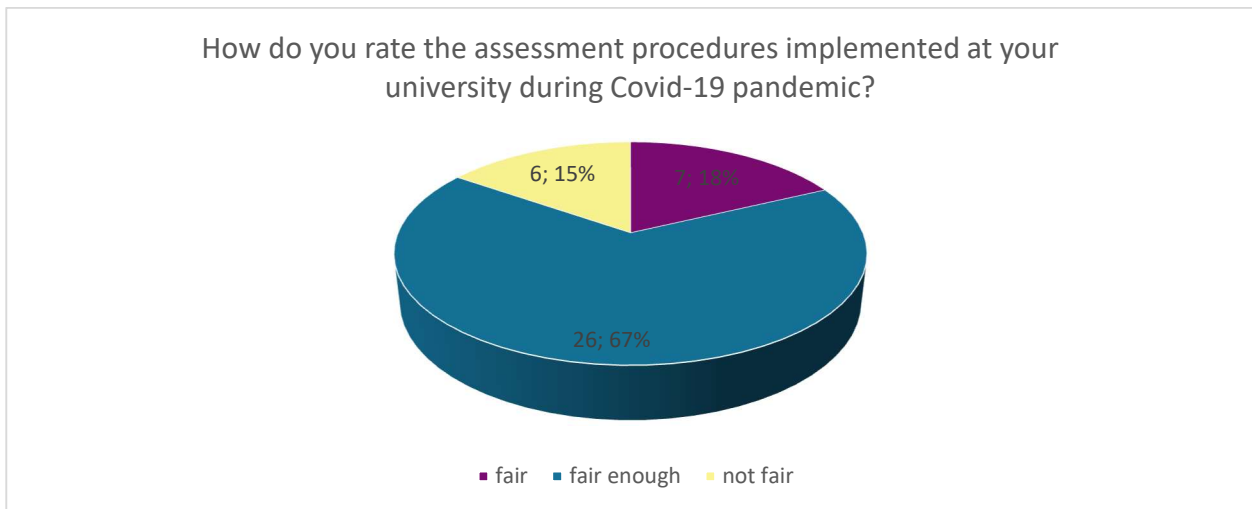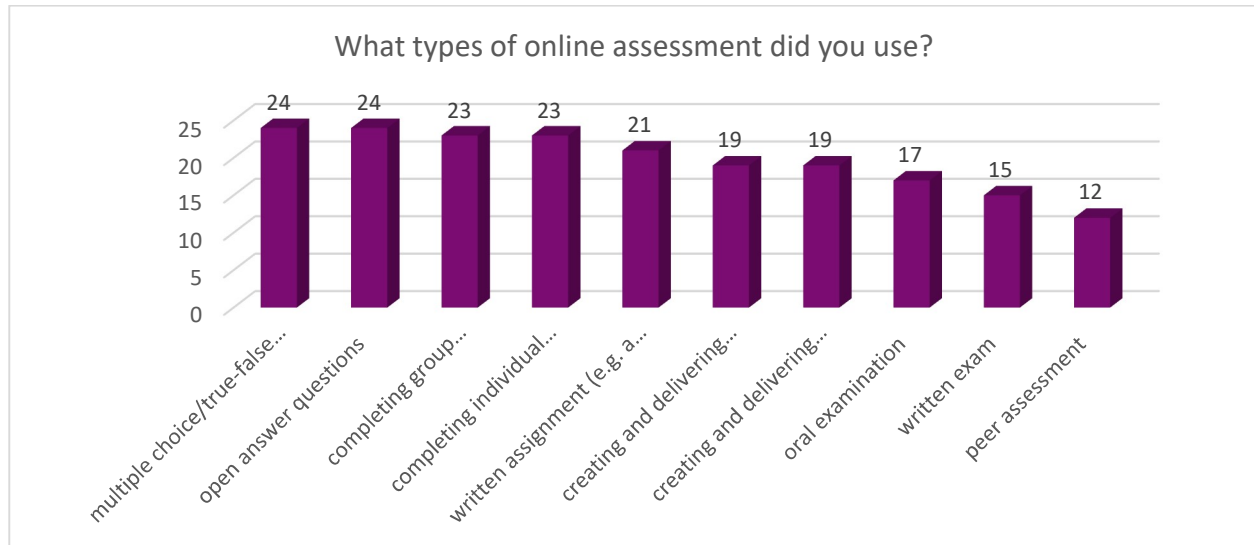

What types of online assessments did you used before and pandemic
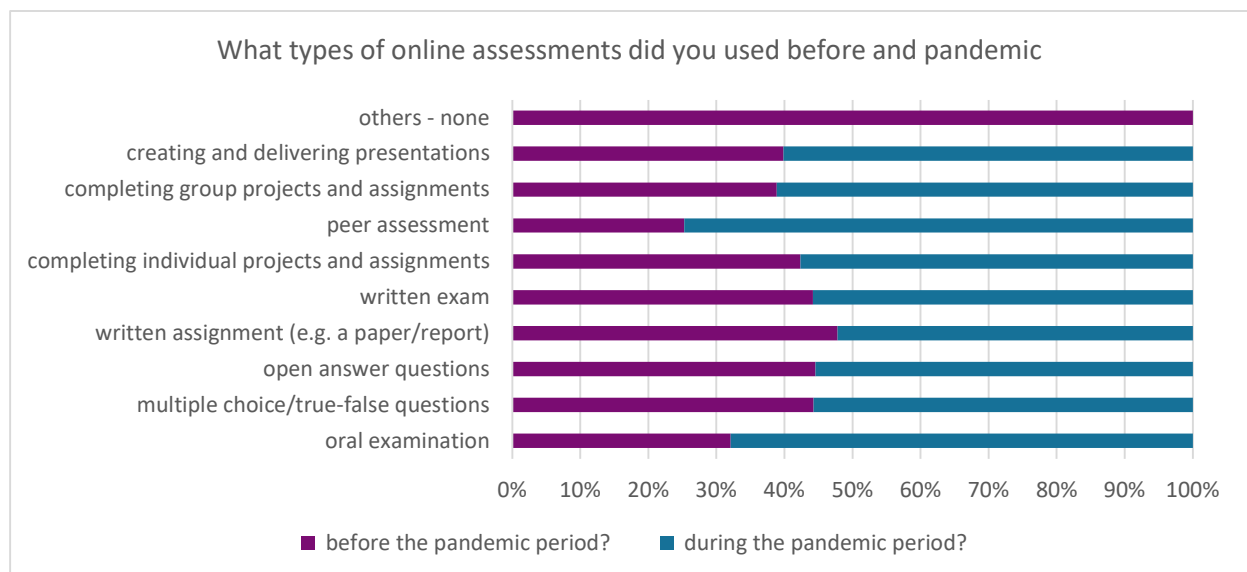
It should be noted that during the pandemic period, all forms of online assessment were used more frequently than before the pandemic. Quite a surprising increase was observed if it comes to oral examination. Research shows that during the pandemic, in regard to peer assessment

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threefold increase was observed compared to the frequency of using this method in traditional learning before the pandemic.

Teachers perspective

The teacher survey included three questions about assessment during the pandemic. Below are the results.

How do you rate the assessment procedures implemented at your university during Covid-19 pandemic?

- 6; 15%
- 7; 18%
- 26; 67%

fair   fair enough   not fair

Which of the following assessment tools have you used after the outbreak of the Covid-19 pandemic?

- 11; 16%
- 11; 16%
- 11; 16%
- 36; 52%

online assessment   peer assessment   on-site assessment   self assessment

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What types of online assessment did you use?

In general, the teachers considered that the assessment procedures implemented during the pandemic were fair (18%; n=7) or fair enough (67%; n=26). Research shows that 52% (n=36) of respondents have used online assessment as the popular form of assessment after the outbreak of the Covid-19 pandemic. 16% (n=11) teachers have used also peer assessment, on-site assessment and self-assessment.

Conclusions

Students and teachers rated the assessment procedures implemented during the pandemic period almost equally. The apparent consistency in the responses of both groups proves that the university has properly implemented the evaluation procedures.

Research conducted among students proved that remote learning activated applying various types of remote assessment by teachers. Teachers willingly were using methods they had not used so far. The biggest, almost threefold increase in popularity was observed with the peer assessment method. It is however still the least used method in the opinion of students and teachers.

Evaluation

University perspective

To monitor and evaluate the quality of online teaching and learning, the university introduced mandatory monthly reporting on the part of the teacher to the supervisor and the Vice-Rector for Education. The University Quality Committee adapted course evaluation surveys to an online course delivery mode. The Student Government conducted independent surveys among students on the overall quality of online teaching and learning in spring 2020 and on the quality of online provision of language education.

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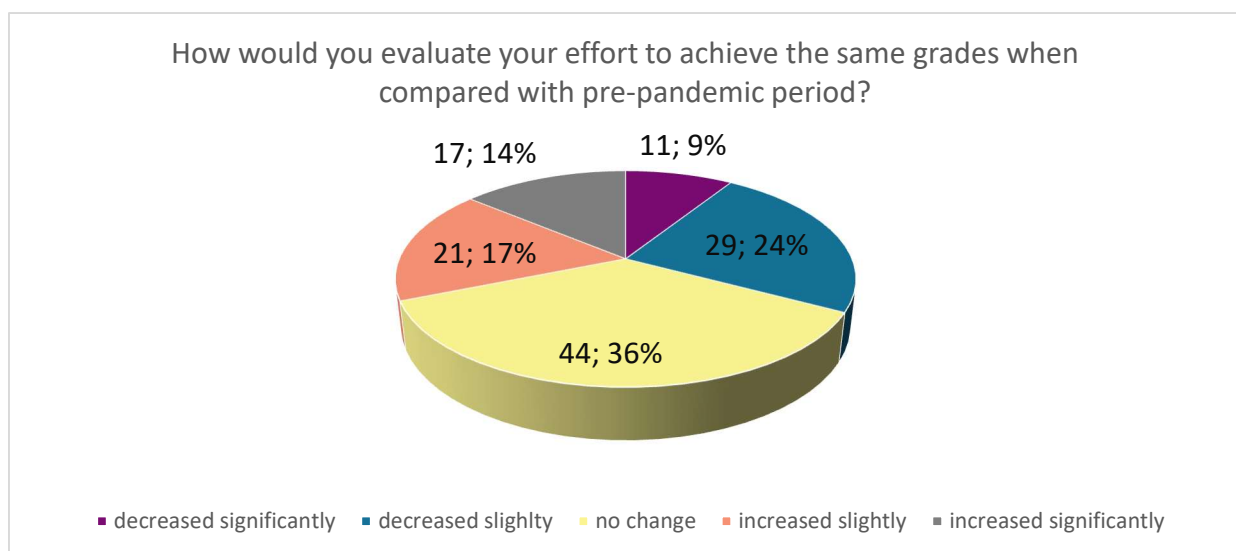
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Teachers were also surveyed on the management of online classes, access to necessary tools and infrastructure, problems with work organisation, support they need, etc. In June/July 2020. To respond to all the problems identifies and the suggestions for improvement offered, a special team of experts was created by Vice-Rector for Education in autumn 2020 to investigate and benchmark all the distance learning practices in TUL, Poland and abroad. The results of their studies were published as the Rector's order on distance learning in operation since October 2021. The document includes links to regulations, procedures, instruction manuals and recommendations, all building a framework for distance education.

A success we can boast of in the area of digital eductaion is the title of "Leader in Microsoft Cloud" that we were granted by the company in recognition of TUL dedication and investment in the development of digital skills and competences of thei staff (both academics and administration) and students.

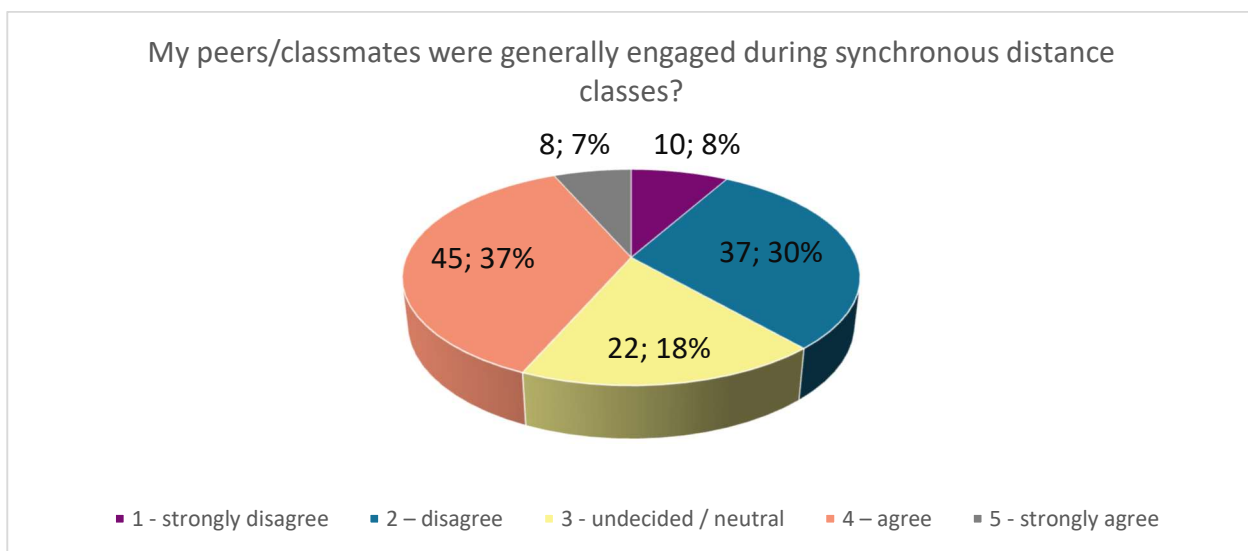## Student and teacher perspective
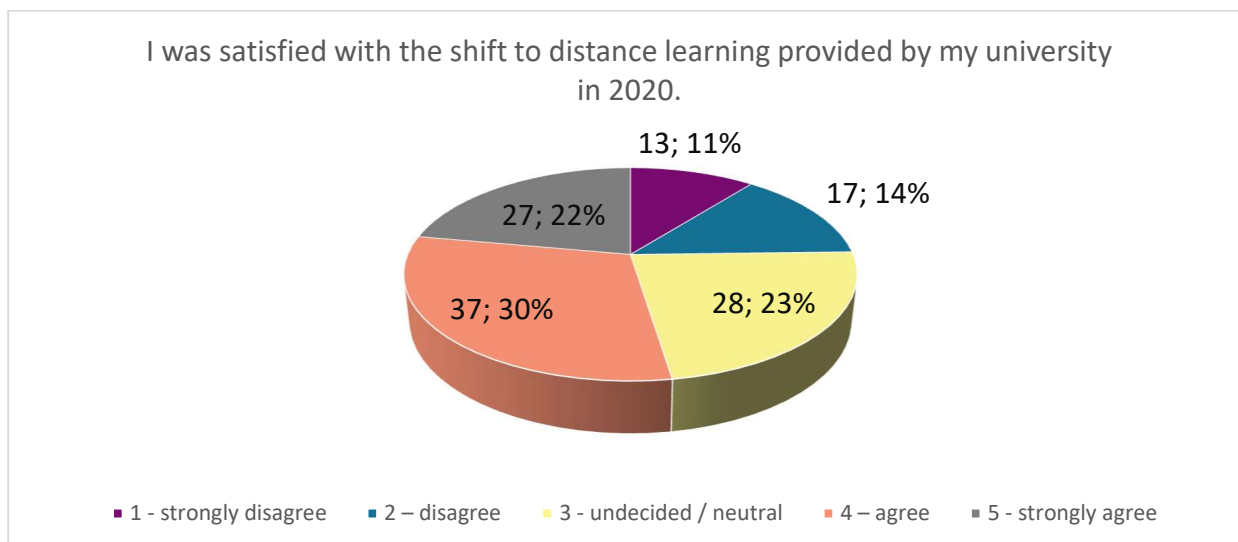
Students perspective

This section deals with the final evaluation of the quality of the adopted distance learning techniques and methods. In the survey twelve questions were asked students in this category and the results are summarized in the figures below.

How would you evaluate your effort to achieve the same grades when compared with pre-pandemic period?

17; 14%   11; 9%
21; 17%   29; 24%
44; 36%

- decreased significantly
- decreased slighlty
- no change
- increased slightly
- increased significantly

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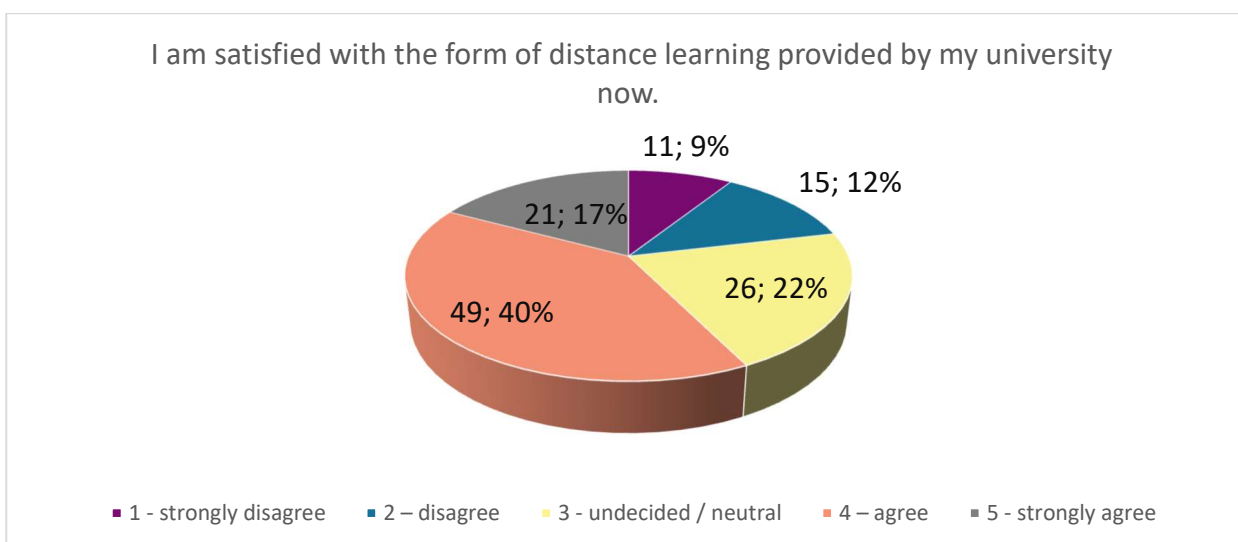## Select the events or interactions that create most stress/anxiety
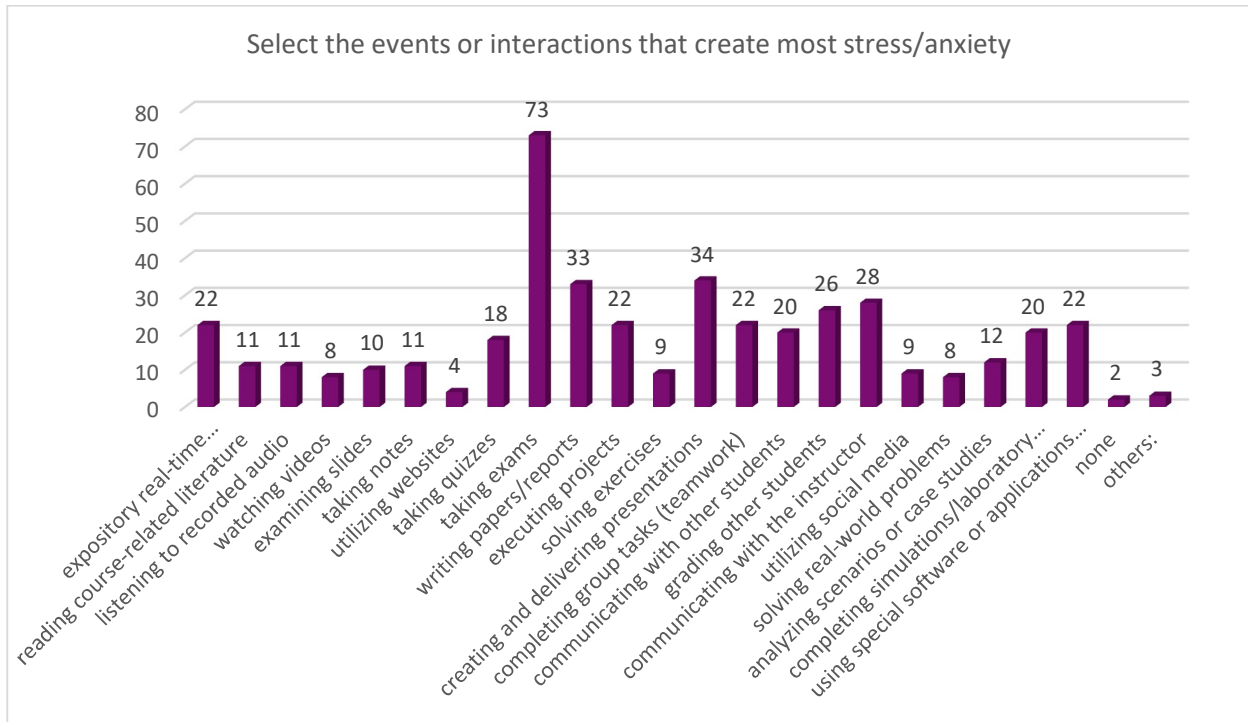
According to the respondents, the most stressful form of activity during remote classes was taking exams, which was indicated by 73 people (60%). The remaining responses received much fewer indications.

My peers/classmates were generally engaged during synchronous distance classes?

8; 7%   10; 8%
45; 37%   37; 30%
22; 18%

- 1 - strongly disagree
- 2 – disagree
- 3 - undecided / neutral
- 4 – agree
- 5 - strongly agree

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I was satisfied with the shift to distance learning provided by my university in 2020.

13; 11%
17; 14%
27; 22%
28; 23%
37; 30%

■ 1 - strongly disagree ■ 2 – disagree ■ 3 - undecided / neutral ■ 4 – agree ■ 5 - strongly agree

Students positively assessed the shift to distance learning provided by our University. More than half (n = 64; 52%) of the respondents were satisfied with the shift, every fourth student was dissatisfied (n = 30; 25%).

I am satisfied with the form of distance learning provided by my university now.

11; 9%
15; 12%
21; 17%
26; 22%
49; 40%

■ 1 - strongly disagree ■ 2 – disagree ■ 3 - undecided / neutral ■ 4 – agree ■ 5 - strongly agree

In general, students expressed their satisfaction with the distance learning provided by the university (n = 70; 57%), of which 21 are very satisfied (17%). The number of negative assessments is nearly 3 times smaller (n = 26; 21%).

A comparison of satisfaction with the distance learning in 2020 and in 2021 is presented in the table below.

Answers	Number of observations		Percentage %		Increase/Decrease Change of percentage
	in 2020	in 2021	in 2020	in 2021	
1 - strongly disagree	13	11	10,7%	9,0%	-1,6%
2 – disagree	17	15	13,9%	12,3%	-1,6%

3 - undecided / neutral	28	26	23,0%	21,3%	-1,6%
4 – agree	37	49	30,3%	40,2%	9,8%
5 - strongly agree	27	21	22,1%	17,2%	-4,9%

The results show that the intense period of distance learning forced by the pandemic positively influenced the assessment of distance learning.
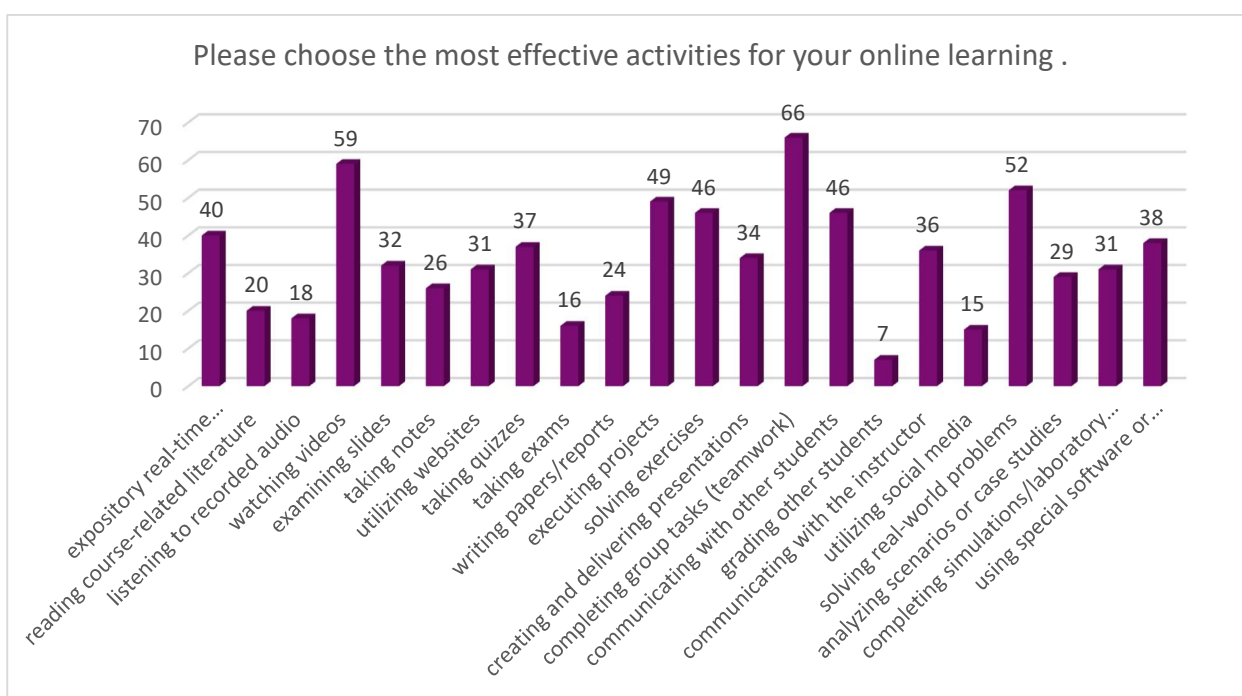

The distribution of responses was very diversified. According to students, the most effective type of activity was completing group tasks (teamwork), indicated by more than half of the respondents (n = 66; 54%), and watching videos (n = 59; 48%). Only for a few students, grading other students (n = 7; 6%) was considered as an effective activity.

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Did lack of personal on-campus contact with peers and teachers affect your motivation?

47; 38%

63; 52%

12; 10%

▪ no ▪ the same ▪ yes
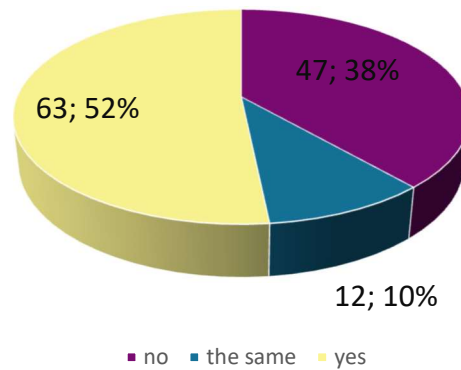
How many online classes have you actively attended?

6; 5%

27; 22%

89; 73%

▪ >60% ▪ 31-60% ▪ 0-30%
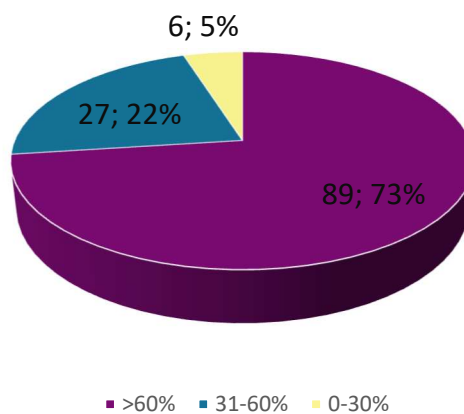
The overwhelming majority of the surveyed students (n = 89; 73%) declared they participated in over 60% of online classes. Out of the remaining group of 31 people (37%), only 6 respondents admitted they were present for a maximum of 30% of the classes.

If your attendance was below 60%, what was the reason for your low attendance?
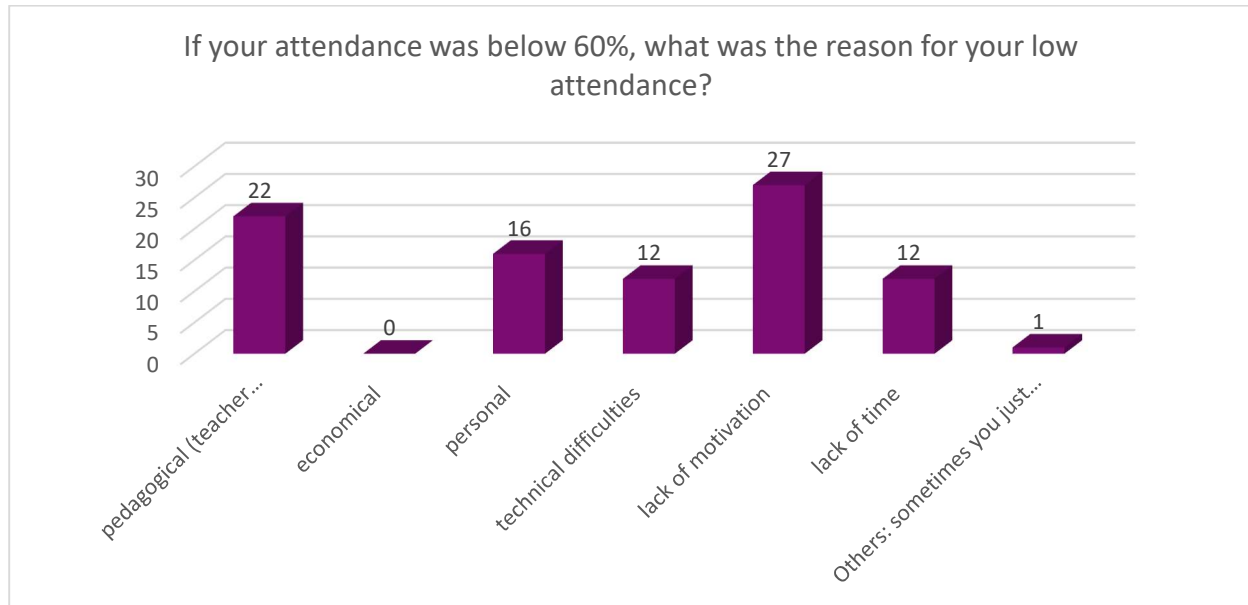
The respondents whose attendance in online classes was less than 60% as a reason of their absence indicated mainly: lack of motivation (n = 27; 67%), pedagogical (teacher performance choice of tools and materials) (n = 22; 55%).

The students were asked an open question about the most challenging aspect of online learning. The major challenge appointed by the students was lack of motivation (n=20; 16%) and lack of concentration and focusing attention on the lecture/class, 15% respondents (n=18) indicated this factor.

The next most popular aspects mentioned were technical problems (n=17; 14%) – having poor internet, not good connection and some software problems. For students demanding was also splitting between several channels like Teams, e-mail, LMS (Moodle; Wikamp), facebook, etc. (n=3; 2%).
Students reported also they were overwhelmed by the amount of work (to many tasks - projects, presentations, reports, making notes, exams (n=12; 11%)). In particular, laboratories (n = 7; 6%) turned out to be difficult, as not all the issues were understandable or not enough time was planned to complete laboratory activities.

5% of students (n = 6) indicated a low level of teacher involvement during distance learning, and some (n = 3; 2%) indicated poor quality of some materials given by tutors.

5% (n = 6) of respondents mentioned problems associated with staying at home: Finding a quiet space for studing and Separation of personal and work space (eat, sleep, learn in the same room). The isolation from other people (n = 4; 3%) and the lack of communication with peers (n = 5; 4%) were listed as problems related to distance learning.

It should also be emphasized that for 5% of surveyed students (n = 6) remote learning was not a challenge during the pandemic.

The second open-answer question was about how distance learning could be improved.

The most common suggestions mentioned by students were related to the education process, in particular to the improvement of teachers' competences, reported by 17% (n = 21) of respondents, and the use of more interactive methods (playing games, interactive whiteboard, quizzes and group tasks, social media aplications) reported by (n = 19; 16%) of respondents. Students also recommended to improve the quality of teaching materials (more videos, instructions, stop boring presentations), (n = 15; 12%), implementation of classes based on more individual tasks, projects, real cases (n = 9 ; 7%). 5% of respondents (n = 6) preferred hybrid learning. Quite a significant group does not see areas for improvement ("none", "I don't know") (n-13; 11%), there are also those who do not see any chances to improve the quality of distance learning (n = 7; 6%).

In the opinion of the vast majority of students, the period of remote learning increased their learning skills through the use of online tools and online education strategies, 83 people (68%) expressed a positive opinion. Only 13% of students (n = 16) were of the opposite opinion.
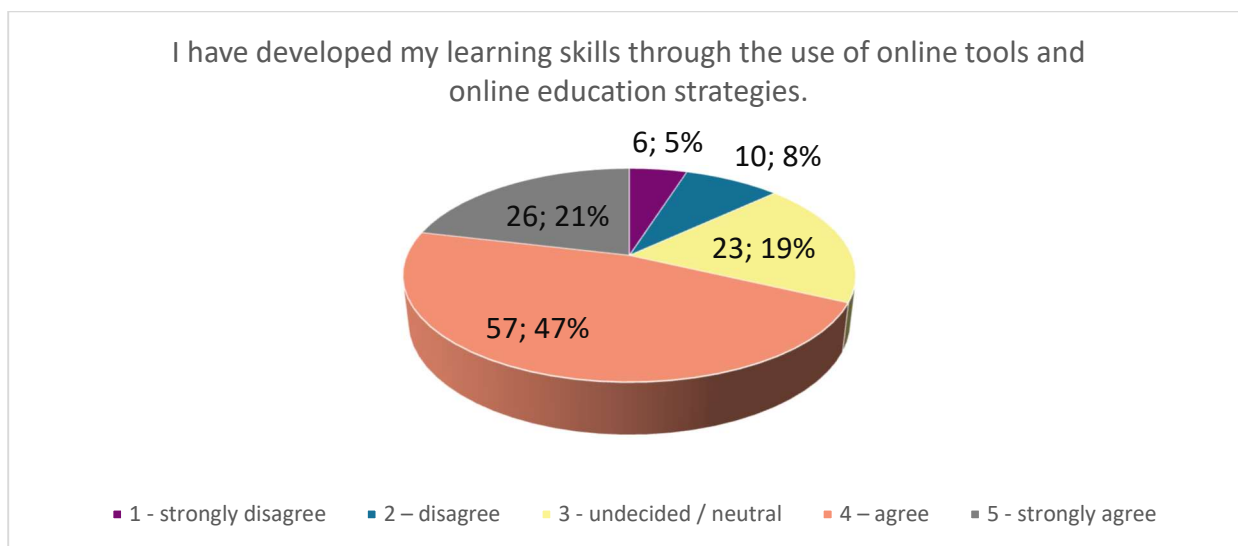

Teachers perspective

In the survey there were thirteen questions suggested for teachers in the category of evaluation.
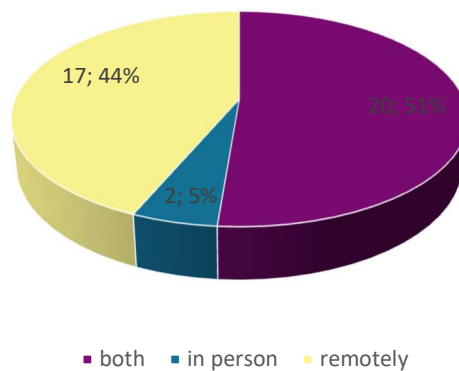
On the graph below we can see that physically attending classes was the most preferred form of education (64%; n=25). 31% (n=12) teachers marked blended learning and only 5% (n=2) selected distance learning.

Which form of education do you prefer?

12; 31%

2; 5%

25; 64%

- blended learning
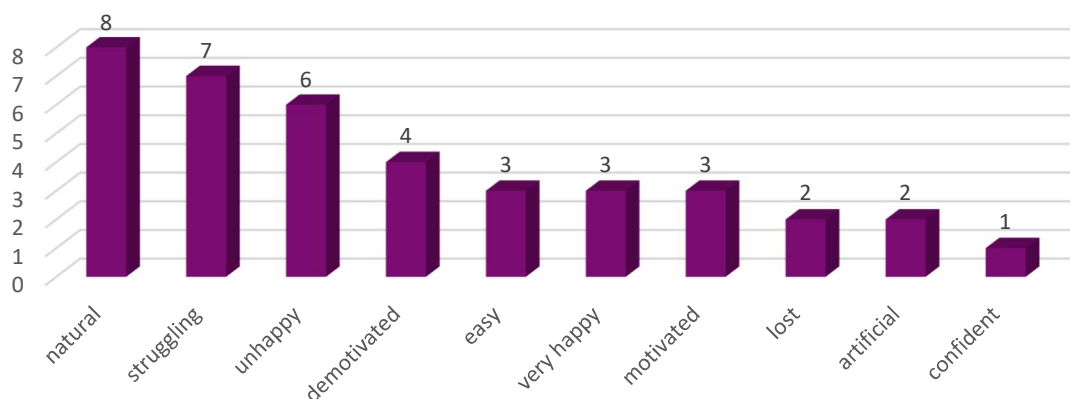- distance learning
- physically attending classes
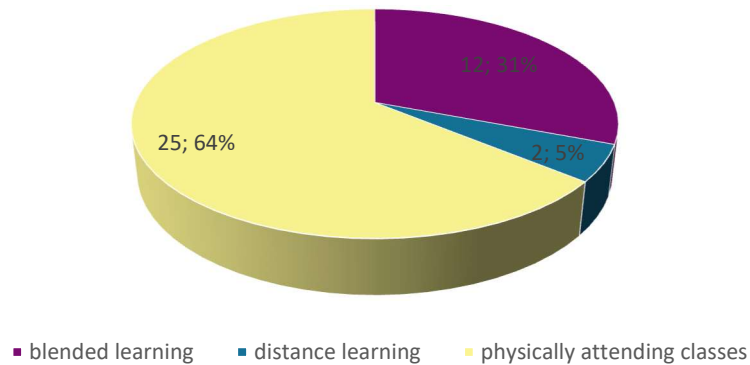
This graph shows how teachers evaluate students. 51% (n=20) teachers selected both (remotely and in person), over 44% (n=17) teachers evaluated students only remotely and 5% (n=2) in person.

Did you evaluate students remotely or in person?

17; 44%

20; 51%

2; 5%

- both
- in person
- remotely

How did you feel about the shift to distance education?

| Feeling	Count
natural	8
struggling	7
unhappy	6
demotivated	4
easy	3
very happy	3
motivated	3
lost	2
artificial	2
confident	1

The feelings about the shift to distance education were in 20% (n=8) natural. 17% (n=7) and 15% (n=6) of teachers answered that it was hard (struggling) and some of them felt unhappy.
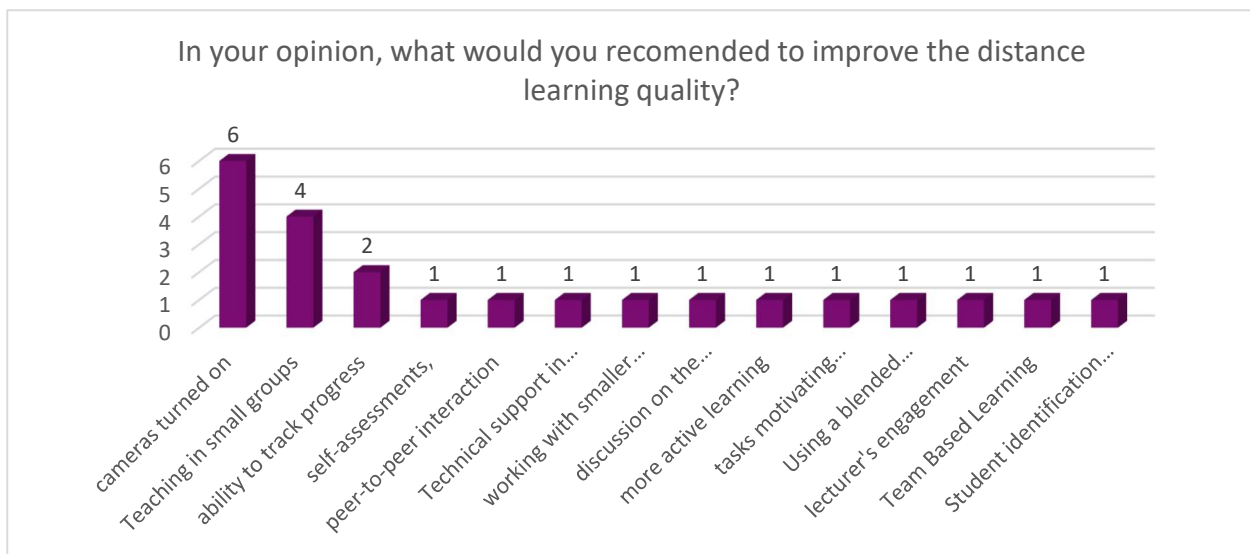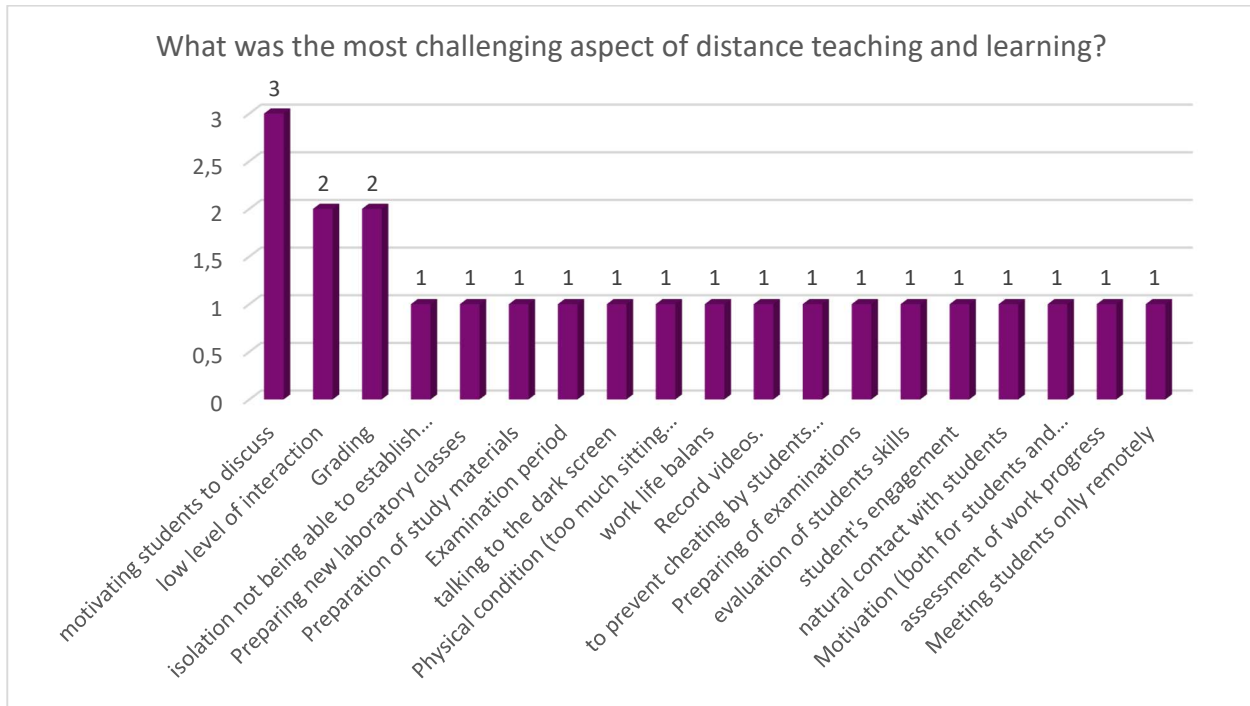
The graph below shows a selection of effective activities chosen by teachers.

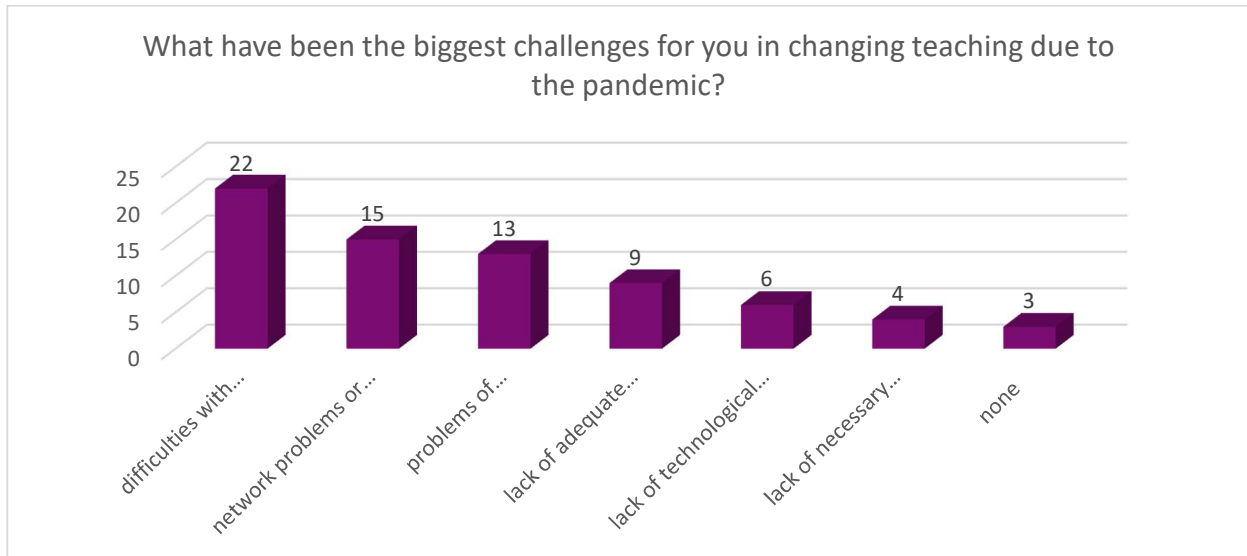**Choose up to four most effective activities for online teaching?**
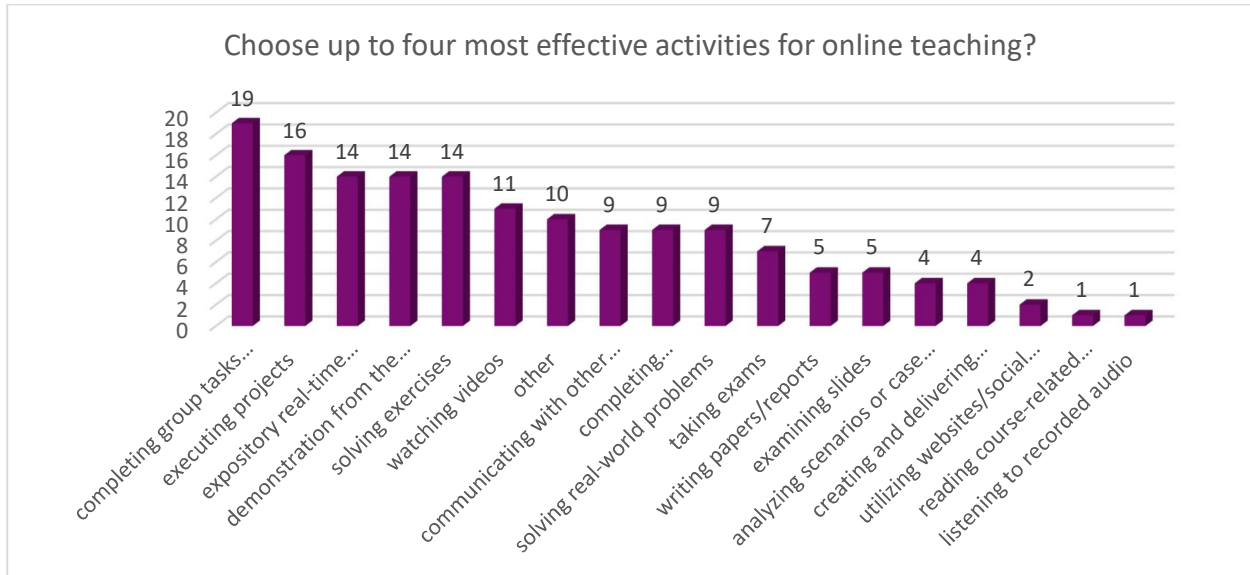
This graph shows that 35% (n=13) of teachers confirmed that lack of personal on-campus contact with students and other teachers affected their motivation. 33% (n=12) answered that it had no impact and 32% marked somewhat.

Did lack of personal on-campus contact with students and other teachers affect your motivation?
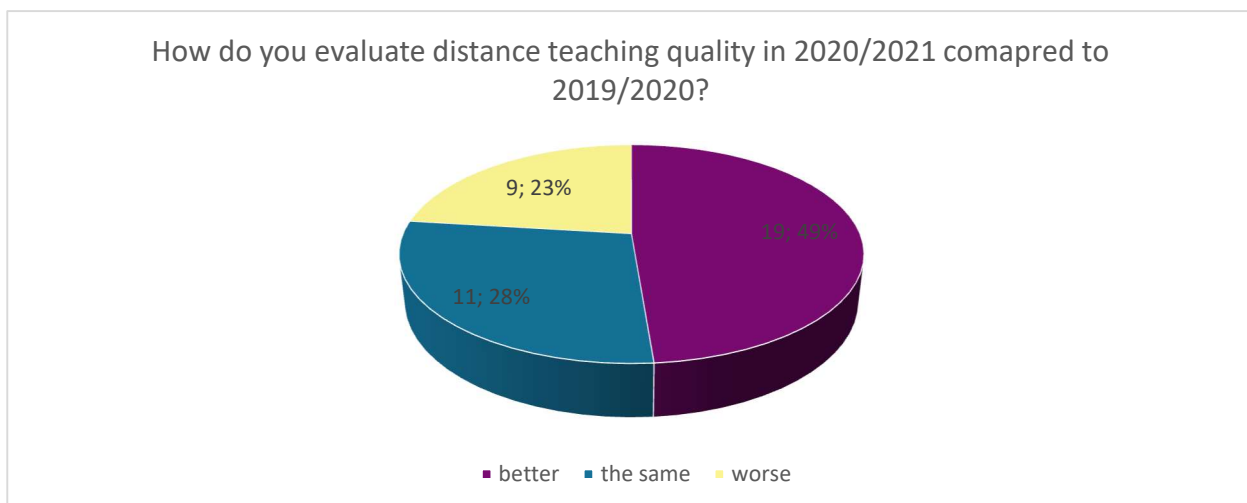
- no
- somewhat
- yes
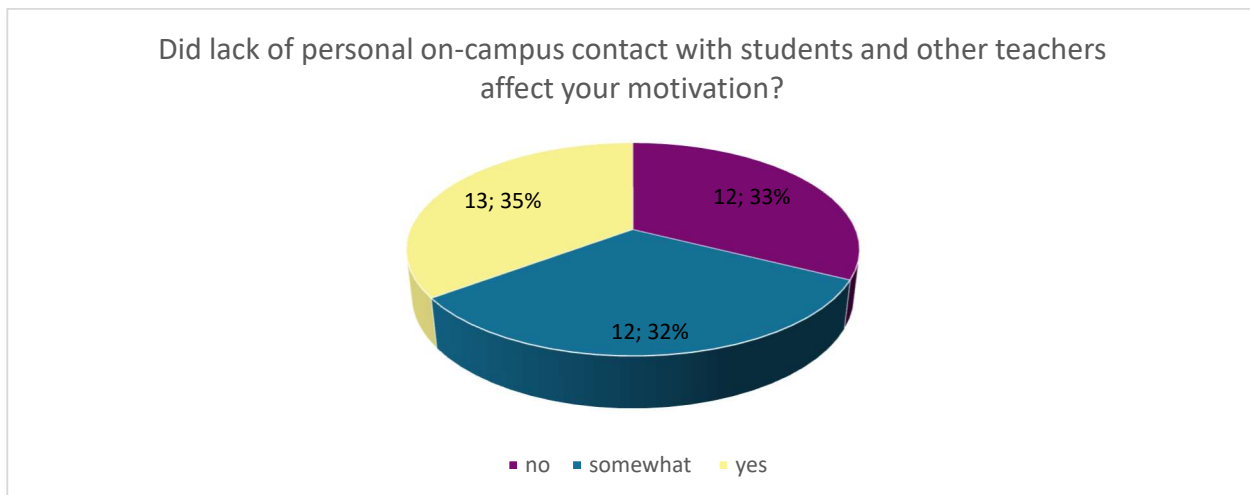
The graph below shows that the most challenging aspect of distance teaching and learning was motivating students to discuss during online lessons (7%; n=3). 5 % (n=2) of teachers answered that low level of interactions and grading was also very challenging.

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What was the most challenging aspect of distance teaching and learning?

In your opinion, what would you recomended to improve the distance learning quality?

When asked "What would you recommended to improve the distance learning quality", 15% (n=6) of teachers indicated cameras turned on. 10% (n=4) of respondents indicated teaching in small groups and ability to track progress (5%; n=2).

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What have been the biggest challenges for you in changing teaching due to the pandemic?
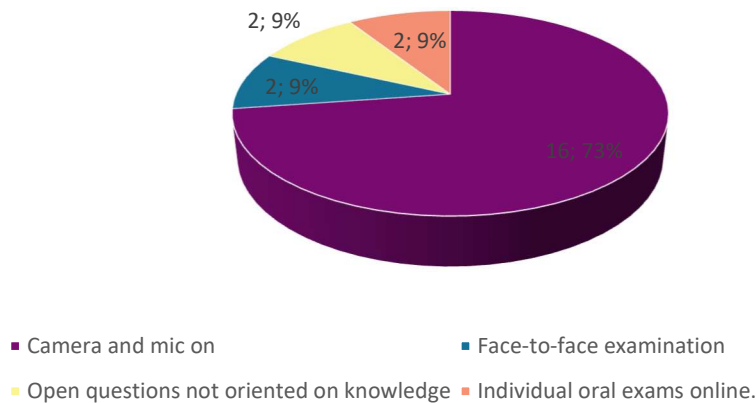

The biggest challenge in teaching during a pandemic was, according to the interviewees difficulties with practical and laboratory tasks (56%; n=22), network problems such as poor network connection (38%; n=15) or problems of concentration and motivation (33%; n=13). 23% (n= 9) indicated lack of adequate location or adequate working space and lack of technological skills (15%; n=6). Only for 10% (n=4) of teachers the biggest challenge was lack of necessary equipment. 7% (n=3) of the respondents did not find any difficulties when teaching remotely.

How do you evaluate distance teaching quality in 2020/2021 comapred to 2019/2020?

9; 23%

11; 28%

19; 49%

■ better ■ the same ■ worse

Research shows that 49% (n=19) of teachers evaluated distance teaching quality in 2020/2021 better compared to 2019/2020 academic year. 28% (n=11) of respondents evaluated the same and 23% (n=9) answered that it is worse compared to 2019/2020.

How do you try to prevent cheating by students during tests and exams?

2; 9%　　2; 9%

2; 9%

16; 73%

- Camera and mic on
- Face-to-face examination
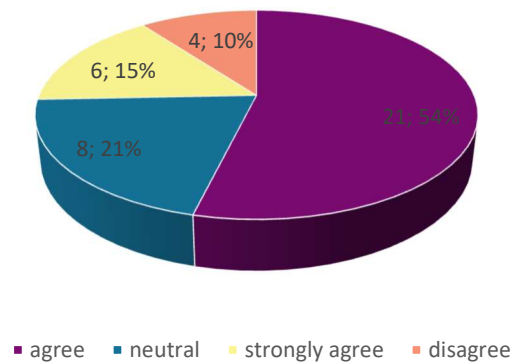- Open questions not oriented on knowledge
- Individual oral exams online.

When asked "How do you try to prevent cheating by students during tests and exams", 73% (n=16) of teachers indicated cameras and mic on as the best way. Others (9%; n=2) face-to-face examination, individual oral exams online and open questions.

I have learnt how to support students in their learning through digital tools

3; 8%　1; 2%

18; 46%

17; 44%

- neutral
- agree
- disagree
- strongly agree
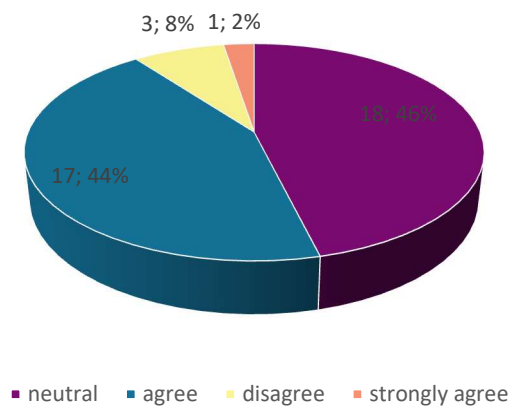
Using digital tools during pandemic by teachers was reflected in student support in this area. 44% (n=17) teachers agreed that they have learnt how to support students in their learning through digital tools. The graph below shows that also 69% of teachers developed their skills through the use of online tools (54%; n=21 and 15%; n=6). 21% (n=8) of teachers were neutral in this matter and only 10% (n=4) disagreed that they .

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I have developed my skills through the use of online tools and online eucation strategies

How do you evaluate the achievement of learning outcomes by your students after switching to distance learning when compared to your previous experience?
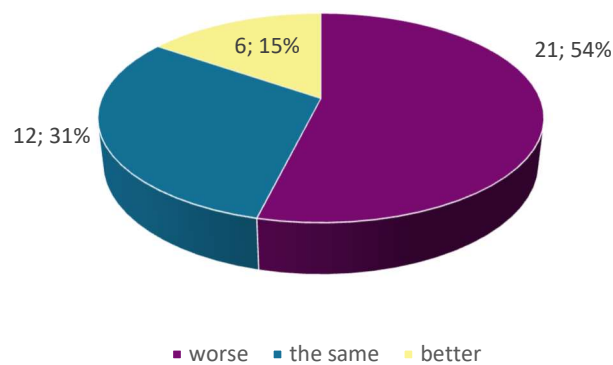
Most of teachers 54% (n= 21) believe that the learning outcomes achieved by students after the transition to distance learning have changed for the worse compared to the previous system. 31% (n= 12) claim that they are the same and only 15% (n=6) think they are better.

Conclusions

While teachers are still strongly in favour of the campus teaching, the level of student satisfaction with remote learning slightly increased (4%), compared to 2020.

Both students and teachers indicated completing group tasks (teamwork) and executing projects as the most effective activities for online learning. Students indicated watching videos and solving real-world problems as an effective activity two times more often than teachers. The detailed distribution of answers showed a different students' and teachers' perception of this issue.

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A similar group of students and teachers stated (about 1/3 of the respondents of each group) that lack of personal on-campus contact with peers and teachers did not affect their motivation. In terms of the most challenging aspect of online learning, we should be cautious in drawing conclusions due to the relatively few answers provided by teachers. However, when building the ranking of the most popular answers of both groups of respondents, it should be noted that both students and teachers indicated lack of motivation.

Completely different opinions were expressed by the respondents of both groups in terms of the recommendation for the distance learning improvement. Students suggest implementation and dissemination of more active tools and methodologies and improving teachers competences. In the opinion of teachers, the most important aspect improving distance learning is camera on.

The use of online tools during the COVID-19 pandemic period enabled students to improve their learning skills and allowed teachers to improve teaching quality, although these positive changes were noticed by 25% more students than teachers.

Recommendations

(describe all good practices that have been noticed or appreciated by the students, teachers or the uni management – i.e. strengths as well as some weaknesses that have been pinpointed and need urgent action, perhaps with ideas for improvement)

The outbreak of the pandemic has forced both teachers and students to quickly adapt and adjust to new realities in terms of education. The survey results shows that despite receiving a lot of support from the University in technical and logistical terms, both teachers and students encountered a number of difficulties that they had to face. Despite of positive feelings and emotions accompanied shift to the distance learning caused by Covid-19 outbreak among students, they still prefer campus learning rather than distance learning (however, we can see that the level of satisfaction with distance learning has increased slightly (4%). The same feelings were shared by the teachers; the vast majority, given the choice between remote teaching and campus teaching, would choose teaching within the walls of the University.

The biggest problem revealed by the survey were a definite decrease in motivation among students, low level of engagement and interaction in classes. In terms of increasing motivation among students, teachers indicated mainly progress self-assessment (82%; n=32) and progress monitoring (82%; n=32). The same answers were indicated by students progress monitoring (n = 62; 51%). Students also indicated online support from the teacher (n = 61; 50%) and learning plan (n = 59; 48%). The least motivating factor was chat module for students at the subject space (n = 21; 17%). An interesting result of the survey is the completely different opinion of the respondents regarding the recommendation to improve the distance learning. While the students focused on the implementation of more active learning methods and the improvement of teachers competences, in the opinion of teachers by far the most important improvement aspect of distance learning will be cameras turn on.

Another challenging aspect about distance learning were definitely technical problems such as poor network and connection with internet.

53

Both students and teachers emphasized that another problem with distance learning was the lack of a proper place to teach or participate in the lessons. The onset of the pandemic made it difficult to participate freely in classes and to conduct them due to the presence of other household members.

In considering the above problems, TUL University should consider the possibility of creating sanitary places to attend lectures (online) for people who, in the era of the pandemic, did not have the opportunity to study freely or adequate conditions at home. Such a solution would also solve the technical problems with the internet connection.

The positive aspects resulting from this survey is a fact that it has helped to develop developed learning skills among students as well as increased teaching quality among teachers.