

Shaping the digital education in a new normal: teacher experience

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Abstract

The paper presents a summary of findings from the teacher digital experience insights survey carried out among lecturers of the University of Warsaw in the end of the winter semester 2021/22.

It provides an overview on how teachers perceive the effectiveness of the teaching and learning with the engagement of digital tools. They share opinions on what digital tools were most commonly used at their courses during the pandemic, when they had to face emergency teaching circumstances and, from day to day, shift their classes to the online mode. The feedback information includes an assessment of their reliability and usefulness in the education process. The lecturers also indicate the advantages and disadvantages of digital education, revealing its potentials and barriers and share their experience from the last semester teaching when they were granted more freedom in deciding on the form of their classes.

The outcomes are put together with the results of the survey on student digital experience during the pandemic and findings obtained in other similar research carried out at European universities.

Hence, the insight delivered in the survey is valuable for identifying which digital methods should be developed further and adapted to the blended model of post-pandemic education.

Keywords: digital education, higher education, teacher experience, student experience, online learning and teaching, post-pandemic, remote education

1 Introduction

The 2020/21 academic year has changed the HE landscape by a sudden shift to remote teaching and learning caused by the COVID-19 pandemic. Teachers and students have been challenged in many different ways. The digital leap was massive and unavoidable. Consequently, the opportunity to benefit from these experiences has emerged to assess which methods proved successful. This is therefore worthwhile to collect feedback both from teachers and students.

Experiences gained during the pandemic have created new expectations for the future teaching and learning and a need to develop its various and flexible forms. Key factors in the success of the digital transformation should be therefore considered.

In order to meet teachers' digital experience during the pandemic and post-pandemic semester (winter 2021/22) an online questionnaire has been distributed among the lecturers of the University of Warsaw. The survey focused on Technology Enhanced Learning, individual digital teaching habits and online teaching methods worth continuing in post-pandemic.

2 Background information about the university digital infrastructure

2.1 Virtual Learning Environment at the University of Warsaw

For more than 20 years University of Warsaw (UW) provides a virtual learning environment for e-learning needs (Galwas, 2021). A common Moodle based interuniversity platform called Kampus is integrated with the central Learning Management System (LMS), called USOS. It is maintained and developed by the Digital Competence Centre - the unit that is also responsible for creating e-courses, helpdesk and trainings on the e-learning platform functions for the whole academic community.

Some faculties at the UW set their own Moodle installation or other platform for an internal use; they do not offer any helpdesk or training support however.

Academic teachers have autonomy in deciding on the form of their course and online component to be applied. They may use VLE for fully online courses, blended ones or as a repository for materials and literature. In general, once acquainted with the platform, they find it beneficial at least as a repository of the course materials.

Moreover, the University of Warsaw e-mailing system is maintained under G-Suite, which has been particularly useful during the Covid-19 pandemic emergency teaching, as teachers quite easily could reach all Google support and collaborative tools (such as Google Meet, collaborative docs, forms or Jamboard). Additional licenses for Zoom or Microsoft 365 have also been provided.

2.2 Emergency teaching during the pandemic (March 2020 – March 2021) and winter semester 2021/22

Covid-19 outbreak has challenged Higher Education in many aspects. As for the teachers, they came under intense pressure with the enforced move to online learning. That immediate shift was very stressful for both teachers and students, particularly to those who have not dealt with online education ever before.

At the University of Warsaw digital infrastructure has already been set, though an immediate technical reinforcement was necessary in order to face the massive demand for the online education followed by the trainings on how to use the tools being offered.

According to the data obtained in March 2021 (Pacholak, 2021), the number of e-courses at the Kampus platform increased to 7 814 (seven times more than on average). The number of teachers running the courses on the Kampus platform grew from approx. 900 to 2 231 teachers. There were 67 705 active users noted at the platform at that period.

In the winter semester 2021/2022 university authorities granted freedom to faculties on deciding on the form of classes being run. It was therefore up to the faculty to make such a decision and in case of face to face classes (mostly laboratory or field classes) ensure safety conditions in accordance with the epidemic regulations.

This approach was pragmatic in the light of unpredictable epidemiological situation at that period. Although lecturers had a voice in decision on how they were going to carry out their courses and had influence on what would be the online component of their course, they had to fit with their proposal, to the overall faculty courses' timetable and thus mode of teaching.

3 The online survey among teachers

In order to meet teacher digital experience during the pandemic and post-pandemic semester (winter 2021/22) an online questionnaire has been distributed. It is worth emphasizing that in winter semester 2021/22 most faculties decided to continue on-line mode of teaching, excluding mostly those courses which included the practical aspects.

The online survey was anonymous and replies were collected on a voluntary basis. With this approach in mind the survey was composed to focus on the qualitative aspects of teaching. 161 anonymous replies have been collected from all faculties, such as Biology, Mathematics, ICT, Economy, Geography, Philology, Philosophy, History, Physics, Law, Psychology, Management etc. (Chart 1).

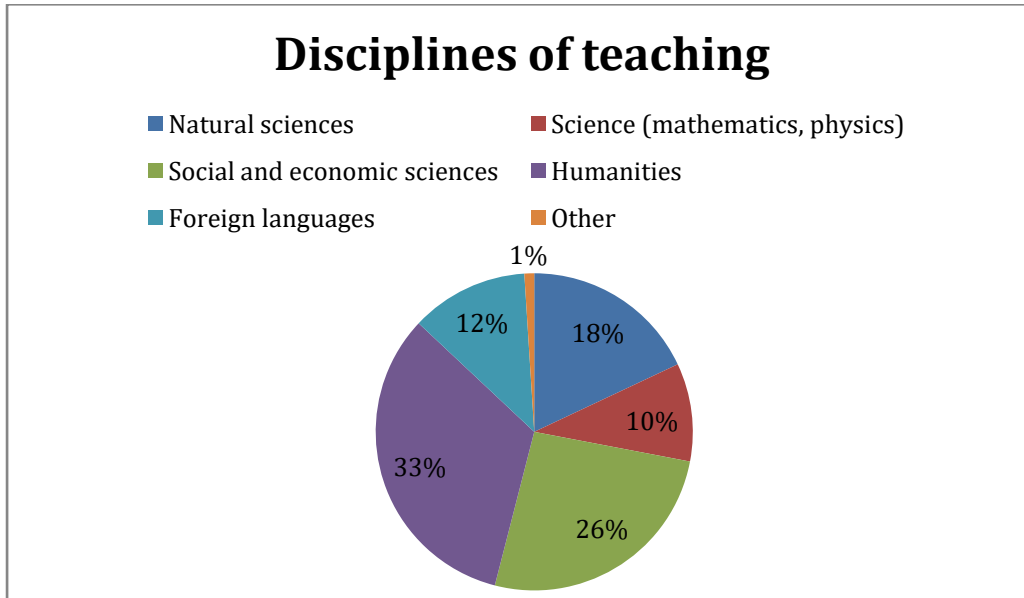


Chart 1. Percentage of replies obtained from teachers indicating in which disciplines they specialize in.

The survey consisted from both closed (multiple choice) and open questions on:

- Technology Enhanced Learning in the courses they have conducted,
- evaluation of the tools used at their courses,
- Individual digital learning habits,
- advantages and disadvantages of online education,
- online teaching methods worth continuing in post-pandemic.

The emphasis was put on the end user experience and questions focused on assessment of tools and methods from an individual perspective. Teachers were asked on their usefulness and potential worth to be applied in curricula.

4 Key findings

Online teaching is not a new concept and Higher Education institutions have been researching and developing new practices for many years now. Regardless of previous experience and troubleshooting their own technical problems and being outside the comfort zone, the pandemic circumstances meant upskilling for most of the teachers. The purpose of the survey was to find out what were the outcomes of this experience.

4.1 Digital experience of teachers

Teachers have been asked in the survey about their former experience with online teaching before the Covid-19 pandemic. Out of 161 teachers who filled it only 8% admitted they have carried out classes

fully online and 23% have used the online component to combine it with the face to face classes. 69% teachers have no previous experience with e-learning at all (Chart 2).

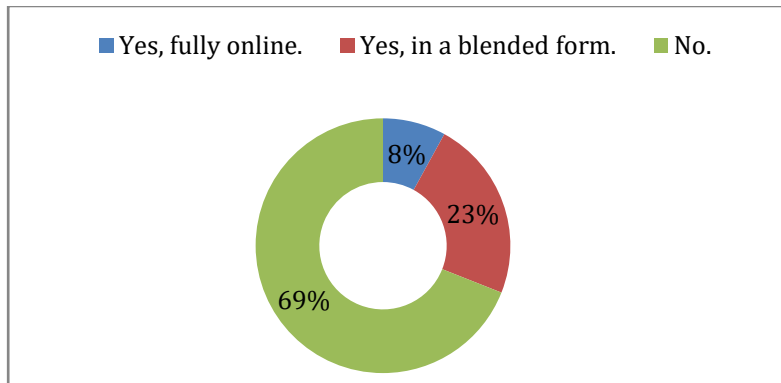


Chart 2. Replies obtained for the question if teachers have any previous experience before the pandemic with conducting classes with the e-learning component in a blended form or fully online.

These indicates that only approx. 30% of teaching staff have been familiar with the digital technologies and reflects a high number of those who desperately needed an immediate upskilling in the pandemic circumstances.

In this respect, there is no surprise that many teachers were interested in raising their competences in didactics, e-learning and digital technologies in education. They were therefore questioned about the trainings they found useful.

According to the data obtained, 47% of teachers decided to get familiar better with the Kampus e-learning platform. 39% took part in general university trainings from the VC tools and others aiming at activation of students during online classes, and only 22% participated in similar trainings offered by their own faculty. At the same time 43% learnt on their own and 42% from informal consultations with teaching colleagues. This results reflect not only a lot of effort put into digital teaching skills increase in the last year but also says a lot about the individual learning habits and learning preference of the teaching staff.

Among the emergency teaching digital means that have been most common during the pandemic there were live lectures in a form of VC (84%) followed by the sharing the presentation (79%), and practise in groups during the video meetings (69%).

Only 39% used other collaborative tools in groups. 58% of teachers decided to launch the e-course on the Kampus e-learning platform (Moodle) and 17% on the other platform. 45% shared video recordings and tutorials with students.

It's worth to pay attention however, that remote teaching during the pandemic, in various contexts, is very different from participating in a well-planned and high-quality online or blended implementation (Kullaslahti et.al., 2021)

Regarding students exams and assessment, the most common form of testing in winter semester 2021/22 there were:

- online tests on the e-learning Kampus (Moodle) platform (58%)
- oral exam on-line (53)%
- assigned project (45%)
- written on-line final exam at Kampus (Moodle) platform (34%)
- online tests in Google forms (30%)
- in-class face to face written exam (24%)
- in-class face to face oral exam (22%)
- online tests on other e-learning platforms (11%)

As for the final digital written exams, the special Moodle installation has been launched Kampus-exams. It occurred very reliable and thus over 2 200 exams have carried out via the platform (from March 2020 to March 2021) during the pandemic and is constantly in use for that purpose (Pacholak, 2021).

4.2 Evaluation of the digital tools

In general, teachers expressed satisfaction from the digital tools as they were the only alternative to run classes during the pandemic. The replies obtained in the survey suggest that some of them are still eager to apply them to their future teaching, whereas the others are looking forward to the face to face teaching only. This depends a lot on the discipline being taught, form of a course (laboratory or field practice) but also to individual habits of the lecturer. This findings are very much in line with students opinions obtained in the last year survey (Pacholak, 2021).

4.2.1 What proved successful

In the pandemic period (from March 2020 to March 2021) actually any digital form of running class could be consider as a success as there were no alternative. However, in 2021/22 winter semester the tools were already much better known and thus chosen with higher awareness.

When asked (in open questions) which digital forms of teaching proved particularly successful an interesting bunch of repeating replies have been collected. They include:

- VC platform features such breakout rooms, rising hand, polls and other ones activation participants.
- Recorded lectures allowed students to listen to them at any convenient time. It is especially useful when conducting a lecture in a foreign language - thanks to the recording, students can stop the lecture, check unknown words, or slow down the pace of speaking.
- Materials on Kampus platform combined with VC meetings in groups, what obliged students to be prepared for classes.
- Whiteboards (eg. Jamboard, Miro).

- Work in groups/subgroups.
- E-courses due to the possibility of embedding all the materials for students in organized way eg. by topics containing presentations and the ease of creating the final test
- All Moodle functionalities.
- Online synchronous collaboration and active teaching (quizzes, final tests, crosswords, homework submission at Kampus platform, Kahoot games, Slido - various types of surveys during classes (e.g. cloud of concepts).
- Mix of synchronous and asynchronous forms of teaching and learning.

All the tools and techniques mentioned above are also much appreciated by students (Pacholak, 2021). Both recorded lectures and asynchronous learning on Kampus platform were particularly valued as they were giving more flexibility in learning at their own pace. All forms of active online teaching during the lecture were also welcomed. Moreover, final online exams removed geographical barriers as could have been taken from anywhere.

Basing on the positive experience with digital teaching respondents were requested to indicate digital tools and methods they plan to benefit from and apply in the following semester. Among the most popular replies there were:

- e-course or materials at the Kampus e-learning platform
- videoconferences (especially for online lectures and consultations)
- online repository and online lecture with quizzes and other elements of interaction
- G-suite collaborative tools
- recorded tutorials
- interactive practise via Quizlet, Wordwall and other tools
- hybrid classes.

They have also been requested to give examples of digital tools (e.g. software, communication tool) or applications that they find very useful in teaching of their subject. The most frequent replies have been combined with the discipline taught in Table 1.

Humanities	Science	Social sciences
Google Jambord (oriental language teaching, sociology, management, history)	Miro (maths)	Zoom (sociology, management, psychology)
Zoom (foreign language teaching, Polish literature, digital humanities, history)	Kampus e-learning platform (physical chemistry - lecture, exercises and laboratory, biology, geology, geography)	Kampus e-learning platform (sociology, management, psychology)
Google collaborative docs (language culture, linguistic, language editing, editorial workshops, stylistics)	MS Whiteboard (chemistry)	Kahoot (sociology, management)

Google meet (literature studies)	Zoom (chemistry, biology)	Google Jamboard (sociology, management)
G-suite tools (digital history, digital humanities)	Google meet (chemistry, geography)	Slido (sociology, management)
Kampus e-learning platform (history)	Google Jambord (biology, geography)	Mentimeter (management)
Kahoot, Google Jamboard, Slido (sociology, management)	Quizlet (biology)	Discord (management)
Padlet (linguistic subjects)	Mentimeter (biology, chemistry)	
Different types of spin wheels (practical English language; methodology of English teaching)	OBS studio for tutorials recording (chemistry)	
Speech2Go (foreign language teaching)	ActivelyLearn, (chemistry)	
Happyscribe (foreign language teaching)	Nearpod (chemistry)	
Pleco (linguistic)	Wolfram Alpha (physics)	
Google Classroom (Russian literature)	Mathematica (physics)	
	3D anatomy atlases (bioarchaeology)	
	3D scan repositories (bioarchaeology)	

Table. 1. Digital tools and applications the teachers found useful in teaching of their subject.

These brief summary of digital means of teaching gives a general overview on how and in which disciplines they are found useful. VC tools, G-suite, Kampus e-learning platform, Mentimeter, Kahoot are the examples of the ones that can actually be adapted for any subject. There is another category of the more subject specific tools such as 3D anatomy atlases, Wolfram Alpha, Mathematica or Pleco. It means these tools of general use can play a role of a basis in digital teaching for any subject, whereas for certain purpose or specific subject some more in depth analysis is need and awareness of how they can be used. These is also potential field for the targeted trainings for interested teachers or experience exchange between teaching staff.

4.2.2 What failed and what kind of barriers were encountered during remote teaching

At the beginning of the pandemic the main concern for some teachers was lack of private technical equipment. According to the Report of the University Office of Education Quality Evaluation from February 2021, 75% of UW's teacher had access to the necessary equipment when switching to e-learning and in February 2021 the overwhelming majority of academic teachers (95%) had it already to own disposal (Bożykowski et.al. 2021).

Another serious barrier, especially during frequent lockdowns, was a problem with the care of children. Every third academic teacher who have children under the age of 12 reported problems with caring for them when performing professional duties (Bożykowski et.al. 2021).

The most important obstacle for some teachers was a poor quality of internet connection that was seriously affecting their teaching and lack of enough private space for teaching, what refers to the socio-economic situation.

Regarding the methods and quality of remote teaching, many respondents of the survey admitted that it caused much worse contact with students when lecturing. During the VCs their cameras were often switched off and they were not active or even not present. Moreover, it has also affected relations in the student groups not allowing to build and create learning community.

Digital teaching was the major obstacle in conducting laboratory classes. It required a lot of inventiveness from teachers to design and replace such classes at home conditions (eg. in vitro tissue cultures). Another example given are foreign language classes where bad quality of sound makes it impossible to correct the pronunciation. It has also referred to mathematics “Conducting maths exercises is still troublesome - despite the existence of good tools such as Jamboard or Miro. Many students do not have the tools to efficiently write on tablets or other touch screen devices.”

Teachers also point to the fact, that even if online exams were technically possible, they could not fully control if students are cheating in the exam. Moreover, for many teachers the online exam was a first such an attempt ever thus technicalities were challenging for them. Both synchronous online oral or written exams had also not always been successful, as sometimes student reported lack of sufficient internet connection thus unable to take the exam.

According to some teachers, hybrid teaching was very disappointing and not effective.

The remote form of teaching seemed for some overwhelming, as stated in this quote: “chained to a desk during synchronous work and an increased number of hours for preparing classes and evaluating the work of students”. Another remark taken from Jisc Report (Jisc 2021) refers to psychological aspect of teaching staff: “Loneliness has affected my mental health at times.”

Replies obtained in the questionnaire suggest the barriers or obstacles perceived in remote teaching are very individual matter and depends much on the tech skills, socio-economic conditions, working place and specific of the subject being taught. What seems advantage for ones may occur as a disadvantage to the others.

4.3 Digital education in progress

Among the most important questions within the survey was the one on plans of teachers regarding online component involvement in their future teaching. It occurs that 55% wants to incorporate blended learning into their teaching and 29% is not decided yet. Consequently, only 16% doesn't want it at all. Taking into account that only 31% of the respondents had have any experience with online teaching before the pandemic, the progress and increase in the number of digital teaching “fans” is clearly visible.

As mentioned above, what one teacher considers as useful in his/her work the other may perceive it as useless. This approach depends on many factors such e.g. digital and didactic skills of the teacher, but on the top of that is the specific of the subject being taught. This is confirmed by the investigations at Finnish universities (Kullaslahti, et.al. 2021), that show clearly that the same teaching practices e.g. online exams worked well for half of teaching staff and worked not well for the rest. Moreover, it has been found in the same research study, that the differences between fields of education were also significant in terms of the success of all teaching activities e.g. teachers in the ICT field, business and administration as well as education and culture felt they were the most successful and the teachers in technology and services the least successful.

Jisc report (2021) delivers even more in-depth insight, concluding that teaching preferences are individual – what some teaching staff really like, others do not.

This is quite a natural phenomenon, as according to UW's report (Bożykowski et.al. 2021) in the pre-pandemic period, representatives of the socio-economic sciences as well as the humanities and linguistics had much more experience in distance learning than lecturers of mathematics and natural sciences and consequently all aspects of remote work were rated the lowest by academic teachers mathematics and natural sciences, and at most by people teaching humanities and languages.

Interestingly, in February 2021 (Bożykowski et.al. 2021) the only aspect of didactic work in which remote work was assessed better than work in the classroom was the effectiveness of on-call and consultation. However, in this research survey (February 2022) there were much more digital means evaluated in a positive way, what leads to conclusion that once the teaching staff met them better is more eager to apply in their teaching routine.

5. Summary and conclusions

University of Warsaw reacted quickly to Covid-19 pandemic and teachers received both technical and training support in many different ways.

Previous experience of e-learning was an advantage to cope with new circumstances and to progress with gaining new digital skills within the time. All the teachers felt a need for upskilling. The most popular were trainings from Kampus (Moodle e-learning platform), self study, informal consultations with teaching colleagues and general university trainings from selected tools.

Among the most common concerns there were lack of stable internet connection but also lack of privacy in working space or disruption caused by missing external childcare. Much worse contact with students during VC lectures was pointed out by many teachers. Another negative aspect was the difficulty in creating learning community among students or feeling of loneliness both by students and teachers either, what in some cases even affected the mental health.

Most of the digital tools were positively assessed as serving well during pandemic for the emergency teaching purposes, however what worked well temporarily not necessary will work in a longer perspective. It is still a transition period. Thus, the awareness of tools available is crucial for teachers to let them decide freely on which of them they are going to apply at their course.

The readiness to transfer teaching online was, however, higher in some fields (humanities) than others (mathematics, physics, biology). During the pandemic, teachers employed various solutions for their lectures and practical exercises. Those positively assessed will be developed further and applied in

post-pandemic teaching, preferably in a blended form. Such a declaration was given by 55% of respondents, what put together with 31% who had been familiar with online teaching indicated to a progress in applying digital tools to daily teaching routine. These proves that the experience and achievements gained during the pandemic pay off now and will benefit further.

It is therefore worth to come up with sector-specific digital solutions and effective pedagogical methods in order to support the learning outcomes.

Consequently, developing an active teaching and learning student-oriented culture will enable different ways for students to participate in the education process.

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2. Author biography



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