Obstacles of Distance Learning During the COVID-19 Pandemic Lockdown and Their Immediate Effect on the Acquisition of Digital Skills

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Abstract

Before 2020, there were three methods for students at the University of Zilina (hereafter referred to as UNIZA) to pursue their education. Students have to complete exercises and lectures as scheduled during their daily study. Students were required to participate in classes or exercises individually, as agreed upon with the instructor, through an external study method with a timetable for their educational activities. Beginning in 2020, distance learning (which took place online) was added, changing this. Moodle seemed no longer sufficient; thus, Microsoft Teams was adopted to handle large-scale online collaboration. The paper addresses the benefits and drawbacks of the platforms, as mentioned earlier and analyses the survey results obtained from UNIZA students. Students have become somewhat accustomed to distance learning while developing their digital skills through various programs and software. Some applications were made available to them thanks to MS Teams. Students learned to develop their logical, technical, and analytical thinking potential. They had to learn to work independently and with new platforms. This experience can give students a competitive advantage in the job market.

Keywords: Digital skills, Moodle, Microsoft Teams, COVID-19 pandemic, distance learning

1. Introduction

The University of Zilina (hereinafter UNIZA) has provided education for over 65 years. Approximately 80,000 students have been educated at the University during this period. The University
encompasses seven faculties. One is the Faculty of Operation and Economics of Transport and Communications, which we will refer to in our paper. So far, education has been carried out by traditional forms of teaching, namely daily (full-time), individually or externally. However, during the COVID-19 pandemic, a new form of education was added, namely distance learning (Jandacka, 2017; Strenitzerova & Stalmachova, 2021).

The Slovak Republic still pays for a specific number of school years for those students who were and still are supposed to pursue full-time study (unless their studies are extended). Some full-time students cannot undertake their daily coursework due to some obstacles (e.g., health reasons). Therefore, individual research has been created for them. No matter their age, students who wish to pursue an education in a particular field or program and are unable to do so because of a full-time job or other commitments might consider external study. In contrast to full-time or individual study, however, external analysis is compensated for unless the student has prolonged their studies (Koncova & Kremenova, 2021; Kremenova, Fabus & Koncova, 2021a).

However, the coronavirus pandemic outbreak and consequent lockdown in Slovakia prompted the implementation of distance learning in the early months of 2020. With this type of education, the teaching staff of UNIZA attempted to maintain the flow of educational activities. Unfortunately, it hasn’t always been well welcomed by the students or the teaching staff (sometimes referred to as researchers or non-teaching staff in this paper). Although this method of instruction has made some courses easier to teach, it has not proved suitable for all subjects. As a result, it was feasible to detect discrepancies in people’s views on this type of instruction (Koncova & Kremenova, 2021; Fabus, Kremenova, Fabusova & Tothova, 2017).

Distance learning was initially a little disorganized. This occurred because not even the teaching staff was aware of the best format to use while imparting to the pupils the knowledge necessary for the course. Later, favouring specific platforms created to give classes and hand out assignments to pupils was common. Before 2020, UNIZA previously utilized the e-learning platform Moodle. 2020 Microsoft Teams (MS Teams) was added to this platform as a replacement (Fabus, Kolarovszka & Fabus, 2013; Strenitzerova & Stalmachova, 2021; Koncova & Kremenova, 2021).

The paper aims to address the benefits and drawbacks of the platforms and analyse the survey results obtained from UNIZA students. The paper is divided into several chapters. The introduction explains the reasons for the creation of the paper and partially outlines the theoretical background of the problem, which is addressed in more detail in a separate following chapter. The chapters also explain e-learning platforms used in the UNIZA environment, specifically MOODLE and MS Teams. In the section devoted to data and methods collected, we present the methods used and the primary research addressed. Subsequently, a discussion is developed to address the issue based on primary and secondary research and conclude the paper with our perspective.

2. Theoretical Background

Schooling represents the skills, information, and learning that have also been obtained through education. Education can occur at many levels and in various formats. Hence, the type of education obtained varies. Though it may or may not be conscious, education lasts for a lifetime, whereas learning is more closely characterized by the length of time spent attending educational institutions (AlKhamaiseh, 2021). There are three types of education: formal, non-formal, and informal. Formal education is something acquired voluntarily, whereas informal education is unintentional. E-learning is a form of education that uses information and communication technology as a medium (Fabus, Kolarovszka & Fabus, 2013; Kuckova, 2019). Synchronous online learning is becoming more and more popular than asynchronous online learning. Offline learning is now only occasionally employed. The synchronous format necessitates a constant Internet connection and real-time interaction between the instructors and students (Koncova & Kremenova, 2021; Kremenova, Fabus & Koncova, 2021a).

2.1 Challenges of education during COVID-19
Global school systems are seriously concerned about the COVID-19 outbreak. Over 190 nations worldwide experienced unplanned school closures due to COVID-19 containment efforts, leaving students without apparent alternatives for education. As a result, the education sector has become increasingly dependent on technology to maintain online learning during the pandemic. Online learning has been demonstrated to be hampered by inadequate infrastructure, including network, power, accessibility, and availability concerns, which are further exacerbated by a lack of digital literacy (Koncova & Kremenova, 2021; Kremenova, Fabus & Koncova, 2021a). The effects of COVID-19 across all educational institutions, teachers, students, and education can be viewed as a call to adopt technology and enhance one’s digital literacy to keep up with the new global trends in education. Some educators had to change the tools through which they interpreted their teaching to students. Other teaching staff and students had to change their hardware at hand at home (Sunita, 2020; Koncova, Kremenova & Fabus, 2021).

However, not only education system was conflicted and underwent challenges during the pandemic of COVID-19. The impact of this pandemic has not only limited people’s regular lives in terms of their leisure time but has also limited the variety of options for shopping, modes of transport, healthcare provision, information sharing, etc. In terms of transportation, people (in some pandemic-affected countries) have been subjected to constraints related to vehicle capacity, the need to wear protective equipment covering the upper respiratory tract, and the need to prove their health status. This has also affected staff and students at various levels of educational institutions in their commute to these facilities (Hemdi, 2021; Assadi & Kashkosh, 2022). Therefore, in terms of commuting, many may have found it easier to remain working in the form of a home office. Regarding shopping and food availability, it may have appeared that goods were in short supply, but this may have been due to various constraints on the cross-border logistics of goods for individual businesses.

2.2 E-learning at the University of Zilina

At the University of Zilina, two virtual platforms are currently used for learning. It depends on the educators, which one they will choose, and what they deem more appropriate for the specific subject they teach.

- E-learning via MOODLE
  Assignments can be given and turned in electronically in Moodle, which stands for Modular Object-Oriented Dynamic Learning Environment. It is also appropriate for publishing study guides for a specific course. The Moodle architecture is built to accommodate various plugin types (e.g., source files, questions, activities, etc.) (Kuckova, 2019; Kremenova, Fabus & Koncova, 2021a; UNIZA, ret. 2023).
  In Moodle, courses are made, and inside them, students who are enrolled in a specific class can access the different tasks necessary to finish that course (subject). Depending on their position (i.e., teacher, student, administrator) in the class, course participants only have limited competency (Fabus, Kolarovszka & Fabus, 2013; Kuckova, 2019). The numerous tools teachers can employ in their classes are one of Moodle’s benefits. A place to submit assignments, tests, polls, questionnaires, a dictionary, a forum, and other tools can be created by teaching materials. Educators can submit documents, books, URLs, and other resources to this environment. In the instructor’s opinion, the primary drawback of Moodle is the lack of description of specific tools, which pushes the inexperienced user to experiment. Additionally, it does not permit simultaneous online interactions between numerous users and a single file, as it is possible, for instance, on Google Drive (Fabus, Garbarova & Vartiak, 2022; Garbarova & Vartiak, 2022; UNIZA, ret. 2023).

- E-learning via Microsoft Teams
  A cloud storage tool called MS Teams allows users to add and download files with various types of material, have meetings, and have chats. MS Teams comprises channels where separate teams can be formed, whether with open or private connections to other students or educators, for a particular
subject, in which different channels can be made for private study groups. The advantages of MS Teams include its simplicity of use, the application’s logical organization of tabs and media, the speed at which information can be retrieved, and the ease with which files can be accessed and sorted. The application is accessible around the clock, and MS Teams enables online collaboration with more users from various locations. The drawback of MS Teams is that due to background communication noise, it is necessary to turn off each participant’s microphone while undergoing the course during the meeting. Individual Internet access also seems to be a concern because each user’s end gadget transmits signals differently (Martin & Tapp, 2019; Pal & Vanijja, 2020).

2.3 The Advantages and Disadvantages of Moodle and MS Teams

Moodle’s benefits include several tools for instructors to employ in their courses. Here, professors may designate a location for students to submit assignments in the form of files or remarks. Additionally, it is possible to establish a dictionary, a forum, tests, surveys, and questionnaires. You can add documents, books, URLs, pages, and other things from the teacher’s perspective. Although it is functional from the student’s perspective, they have little access to shared resources. Because several capabilities in Moodle are not adequately explained, it is necessary for a novice user—especially a lecturer—who has never used Moodle before or has only used it from a student’s perspective to experiment.

Additionally, numerous users can’t collaborate on a single file (such as Word, Excel, or another type) online like with Google Drive, for example, in an Excel file, where one may share the file and make changes in real time. The time limit for using Moodle also poses a problem because, after a short period, the user logs out without making any changes, regardless of how elaborate the activity was when it was saved. The progress is not stored using different words, and the user is taken back to the home page of all courses in which they are enrolled. As a result, they must enter the activity again and begin from scratch. The ease of use, orderly organization of user bookmarks and channels, rapid access to saved files and the potential classification of those files are all benefits of MS Teams. Positive aspects include the 24/7 application access and the ability to connect with a broader group of online people in various locations. The work that needs to be done using this user interface takes less time than in the Moodle environment (Koncova & Kremenova, 2021).

The disadvantage of MS Teams is the need to turn off the microphones of individual participants, especially during communication during the meeting. Otherwise, there is communication noise in the background, and individual participants cannot be heard. The Internet connection of individual users also seems problematic, as the signal transmission from the terminal devices of individual users is not the same. This is limited by the purchased Internet services from an Internet provider with different data transfer rates, etc. Another drawback is that the user must immediately download this program onto his device to use MS Teams for speedier communication. But in this situation, it consumes a lot of space on the memory storage media. When used on a smartphone, the application is always "awakened" even when the user logs out, disables it, and forces it to stop in settings. For a brief period, the application will reactivate itself on your device without your permission, using more battery power (Koncova & Kremenova, 2021).

3. Data and Methods

The paper aims to assess the positive and negative impacts of distance learning on the development of digital skills and identify the shortcomings and strengths of distance learning. The paper also stated the pros and cons of the e-learning platforms used at UNIZA. The theoretical underpinnings of challenges related to distance learning are discussed in the study, along with the analysis and synthesis of data from primary research. The necessary information for this paper comprises information channels such as scientific publications, Internet resources dealing with the subject, and undergraduate theses. The practical information was gathered through primary research that was
compiled into a questionnaire intended for students of later specifics.

During our primary research, we polled 100 students from the Faculty of Operation and Economics of Transport and Communications (FPEADAS) of UNIZA to better comprehend how distance learning platforms are used during the coronavirus period. The responders came from the economics, communications, rail, and transportation departments. The data gathering took place between November 30, 2020, and January 7, 2021. The 10% level is the highest allowable margin of error (Kremenova, Fabus & Koncova, 2021a).

As there were not as drastic changes in the form of education and the primary shock in education changes (in 2020) was ceased by previous experience in 2021 and 2022, we did not evaluate students' behaviour in the following years after 2020.

4. Analysis and Results

In the questionnaire, we gathered some interesting data. Those are stated as follows. The questionnaire was completed by 54% of men and 46% of women. Those will be furthered as our responders. Precisely 96% of respondents stated they were taking classes full-time. On the other side, 3% said they were taking classes individually, whereas one responded to be studying externally. Most respondents represented the 1st year of engineering studies (34%). The 3rd year of bachelor studies was attended by 29% of the respondents, and the 2nd year of engineering studies was participated in by 16%. Of the respondents, no one had extended their engineering studies, and three had extended their undergraduate studies. The overall distribution of students based on year of study is shown in Figure 1.

![Figure 1](image1.png)

**Figure 1:** The respondents' study year.

When asked if they preferred online education, 24% of respondents responded: Distance learning is favoured by 24% of respondents, selected by 35% of respondents, not selected by 29%, and utterly inappropriate in 12% of circumstances. This is displayed in Figure 2.

![Figure 2](image2.png)

**Figure 2:** Representation of responses, indicating whether distance learning suits respondents.
According to the data above, 59% of the students who were polled indicated that they preferred this type of schooling. Overall, 41% of respondents said that distance learning had somehow discouraged them. Up to 80% of the students stated they needed extra time to complete assignments and issues when taking a course online instead of in person. Below 11% of those surveyed said they still had questions about the exercises or assignments they were given in lectures. A maximum of 96% of respondents are proficient in using MS Teams, where they have posted study materials, and 91% of respondents are skilled in using Moodle. When we surveyed regularly utilized learning methods, we got unexpected results. While 73% of the students believed that the lecturers tried to use creative teaching techniques, 27% did not feel this way. Despite the MS Teams platform’s later launch for usage by the University in e-learning, we further discovered through the research that students had a better experience with it since they could traverse it more easily. During distance learning, 54% of respondents said they experienced health issues unrelated to COVID-19 (Koncova & Kremenova, 2021; Kremenova, Fabus & Koncova, 2021a).

Figure 3: Health issues of students surfaced while learning remotely (not bound to COVID-19).

Figure 3 shows the physical health problems that the respondents (who chose to share this information) noted.

Students would welcome a single place in the University where announcements, including the LMS Moodle, would be made. In Moodle, students find it difficult to mix materials from lectures, which are sometimes similarly named. Students would welcome a single place in the University where announcements, including the LMS Moodle, would be made. In Moodle, students find it difficult to mix materials from exercises with materials from lectures, which are sometimes named similarly.

Students have a better experience with the MS Teams platform, as they can navigate it better, despite its later introduction into use by the University as part of e-learning. Speaking via communication channels such as Microsoft Teams replaced in some form the environment of the usual class attending the lesson at the same time during face-to-face study form.

Educators mainly tried to engage students by calling them up individually while demanding the answer to the problem. They tried to engage students in discussions and let students work in groups by MS Teams. By Moodle, educators engaged students in activities agreed upon at the start of the semester or let them work on individually given tasks.

One of the respondents pointed out: "It is difficult to replace what an experienced teacher can give us during a lecture, but it is even more difficult to study these things on your own.” One of the respondents noted: "It is difficult to replace what an experienced teacher can give us during a lecture, but it is even more difficult to study these things on your own" (Kremenova, Fabus & Koncova, 2021b).

5. Results Summary

To conclude, the questionnaire was aimed at finding out the student’s attitudes towards distance learning during the COVID-19 pandemic. When asked if they preferred online education, distance
learning was favoured by 24% of respondents, selected by 35% of respondents, not selected by 29%, and utterly inappropriate in 12% of circumstances. Also, 59% of the students indicated that they preferred this type of schooling. Overall, 41% of respondents said that distance learning had somehow discouraged them. Up to 80% of the students needed extra time to complete assignments and issues when taking a course online instead of in person. Below 11% of those surveyed said they still had questions about the exercises or assignments they were given in lectures. A maximum of 96% of respondents were proficient in using MS Teams, where they have posted study materials, and 91% of respondents are skilled in using Moodle. Additionally, while 73% of the students believed that the lecturers tried to use creative teaching techniques, 27% did not feel this way. Despite the MS Teams platform's later launch for usage by the University in e-learning, we further discovered through the research that students had a better experience with it since they could traverse it more easily. Students would welcome a single place in the University where announcements, including the LMS Moodle, would be made. On the other hand, they have a better experience with the MS Teams platform, as they can navigate it better, despite its later introduction into use by the University as part of e-learning. Finally, educators mainly tried to engage students by calling them up individually while demanding the answer to the problem. They tried to engage students in discussions and let students work in groups by MS Teams. By Moodle, educators engaged students in activities agreed upon at the start of the semester or let them work on individually given tasks.

6. Discussion

Working with new ICT has become necessary due to the shift to distant learning as a mode of study. Student's access to the platforms their teachers picked was limited at home and school. To address the demands of both instructors and students, the cycle of discovering new and suitable platforms persisted. Both students and teachers now have better digital skills as a result of this (Kuckova, 2019; Wahab, 2020; Jucha & Corejova, 2021; Janošková & Repkova Stofkova, 2021; Laitkep, Repkova Stofkova & Jucha, 2021).

Increasing peoples' skill sets throughout their lives is now essential for nations to improve the labour market and give people more influence in the digital economy, which is bringing about changes in the public sector. As a result, gaining new digital abilities can present students with the opportunity to advance in their job hunt (Chinoracky & Corejova, 2019; Antonio Manco-Chavez, 2020; Zilincikova & Repkova Stofkova, 2020; Janošková & Repkova Stofkova, 2021; Zilincikova & Stofkova, 2021).

These digital abilities may include proficiency with various software, programs, applications, or other platforms accessible via mobile devices or computers (e.g. smartphones). As a result, the education system is being significantly altered by a variety of today's ICT innovations. Students' ability to make decisions and think critically may develop flexibly. As a result, they are creating new employment options (Corejova, Kincl, Jucha & Rostasova, 2020; Strenitzerova & Stalmachova, 2020; Janoskova, Kovacikova & Repkova Stofkova, 2021).

7. Conclusion

As the global pandemic of COVID-19 spread, there were many fields in education to which educators had to pay attention. Areas like creating or adjusting study materials were needed in many subjects and adjustments to creating exam tests while using new electronic platforms. Evaluation of the student is also one area to which educators must pay attention. Many educators used to have predefined ways of evaluating students by giving them points based on the student's processing of the assigned topic, bound to taking an exam, either written or oral. In many subjects, students had to find and study some materials attached to the issue, write some semestral thesis, and present their results during lessons. In many ways, those predefined tasks stayed the same; however, usual literature (books or physical journals) was replaced by electronic forms of publication. Thus,
checking sources of literature became from one side more accessible from the other side harder. Also, not all the needed information could be found on the Internet, which could delay submissions of semester theses for specific subjects or their incorrectly written versions because many libraries were closed during the pandemic. Thanks to this, educators had to consider those circumstances and advise, if possible, to correct those works if students could communicate those problems with the educators. However, not all the students did so, which could lead to misunderstandings between the educator’s demands and the student’s understanding of specific tasks.

Although distance learning has numerous drawbacks, it may also be a great way to develop new skills in digital, linguistic, or presentational areas. When dealing with ICT technology in daily life, those who possess digital skills might benefit from a competitive edge in the labour market. This may inspire some people while demotivating others.

Everything is dependent on one’s perspective, specifically if they are concentrating on the immediate benefits or considering the long-term ones. Working with several programs demonstrates the digital skills that were learned throughout e-learning. Here are a few instances from each student’s academic experience that we are providing: Microsoft Word, Microsoft PowerPoint, Microsoft Excel, Visio, Draw.io or other applications meant for creating diagrams and so on.

Specifying all the abilities concerning this is impossible because each lesson has unique requirements for technology and learning platforms. However, working with the applications mentioned earlier can aid someone in developing their analytical, logical, and technological thinking. It all depends on the individual’s approach and drive to improve.

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References


