

Agnieszka Parlińska
Warsaw University of Life Sciences

E-LEARNING CHALLENGES IN POLAND DURING THE COVID-19 PANDEMIC

The main objective of the paper is to show the new challenges for education that arose in Poland from 2019-2021, and the use of e-learning methods. This new approach, and the purpose and added value of this study, is to enrich the knowledge of the use of new teaching and research methods gained during the Covid-19 pandemic and applicability to pandemics generally, as well as continued use of these methods afterwards.

To achieve the objective, the method of literature analysis and critique was used, as well as a ratio analysis based on historical data from Statistics Poland (GUS), EUROSTAT and the author's own first-hand observations as a university educator.

The research results helped to formulate several conclusions regarding the factors which influence effective e-learning, such as: internet access and quality; the availability of adequate software, hardware and other tools; and the digital competence of teachers and students. A short SWOT analyse is also presented to highlight key considerations that are crucial for the future of e-learning.

Key words: COVID-19, e-learning, distance learning, remote education

JEL code: A2, I2, P46

Introduction

Since March 2020, many things have changed because of the pandemic. There have been many challenges for individuals, institutions, and companies around the world. Teachers and students also had to adapt to the emerging changes in the way they communicate and work. Working at a university, teaching and researching, has provided a good opportunity to share first-hand experience. The situation caused by the virus brought the need to implement new ways of learning, communicating, and sharing knowledge and research results. Because of the lockdown it was necessary to work online throughout the entire academic year. Comparing both methods – traditional and online – illuminates both advantages and disadvantages.

As technology advances, the training and e-learning systems industry has expanded, and so has the terminology that functions within it. Many new words and concepts have appeared, the meanings of which either overlap or are simply not obvious. Some of them can be used interchangeably, others – less so. This paper, among other things, seeks to organize some of the basic terminology functioning in the e-learning industry, specifically the lexicon related to forms of remote learning.

Material and methodology of research

The main purpose of the paper is to show the need to work on new challenges for knowledge acquisition with the use of e-learning methods in education, as well as in research activities. The study was carried out on the example of solutions in Poland in the time frame 2019-2021.

The first part of the paper presents a literature overview. The author focuses on the definitions of e-learning and other similar terms, as well as fundamental perspectives of e-learning. In addition, the positive benefits and negative effects of e-learning and the factors that influence e-learning are discussed.

In the empirical section, the author's own analyses and assessments were made on the basis of data from Statistic Poland (GUS), EUROSTAT and personal observation.

Literature overview

The term e-learning was developed in the mid-1990s when the Internet began to gain momentum (Garrison, 2011), and the application of e-learning includes both computer-based and networked learning. Learning content can be delivered via the Internet, intranet, video/audio cassettes, CD-ROM, DVD, and television channels. Papanis (2005) stated that "e-learning provides faster learning at reduced cost, increased access to learning, and clear accountability for all participants in the learning process".

Wentling et al. (2000) pointed out that e-learning is the use of Internet technologies that can provide a wide range of solutions to enhance knowledge and productivity. It facilitates and enhances learning through and based on computer and communication technology. In addition, it can also support Wide Area Network (WAN) learning and can be considered as a flexible way of learning. At the same time, Papanis (2005) stated that e-learning components include content delivery in different formats, learning management, network community of learners and content creators and experts.

As technology advances, the training and e-learning systems industry has expanded, and so has the terminology that functions within it. Many terms have appeared, the meanings of which either overlap or are simply not obvious. Some of them can be used interchangeably, others – less so. It is helpful to organize the basic terminology functioning in the e-learning industry, specifically the lexicon related to forms of remote learning.

First, the differences between some terms related to e-learning should be distinguished. Digital learning (d-learning), which is the broadest term in meaning, is a tool which addresses a number of challenges that are faced by educational institutions, community leaders and policymakers, and it helps learners to connect from remote areas. Online learning as a form of distance learning can be described as teaching via the Internet using personal computers or portable wireless devices – smartphones, tablets, laptops (mobile learning/m-learning). M-learning is e-learning through mobile computational devices: Palms, Windows CE machines, even digital cell phones.

It should also be pointed out that there are four fundamental perspectives of e-learning that are delivered in higher educational institutions – see Figure 1. These basic perspectives of e-learning are interdependent and equally important when it comes to the possibility of using electronic devices as tools to run educational institutions.

When it comes to the factors influencing e-learning, researchers have pointed out: accessibility of Internet broadband, cost of mobile Internet, lack of formal implementation process, lack of interest of faculty, lack of ICT-enabled teachers and enabled students, power failure, lack of learning objects in local language, socio-cultural norms, lack of resources, practical arrangements for practical oriented courses, and literacy rate (Buabeng-Andoh, C. 2012; Vasilevska, D., et al. , 2017; Kumar Basak, S. et al., 2018; Tomczyk, Ł., Walker, C., 2021)

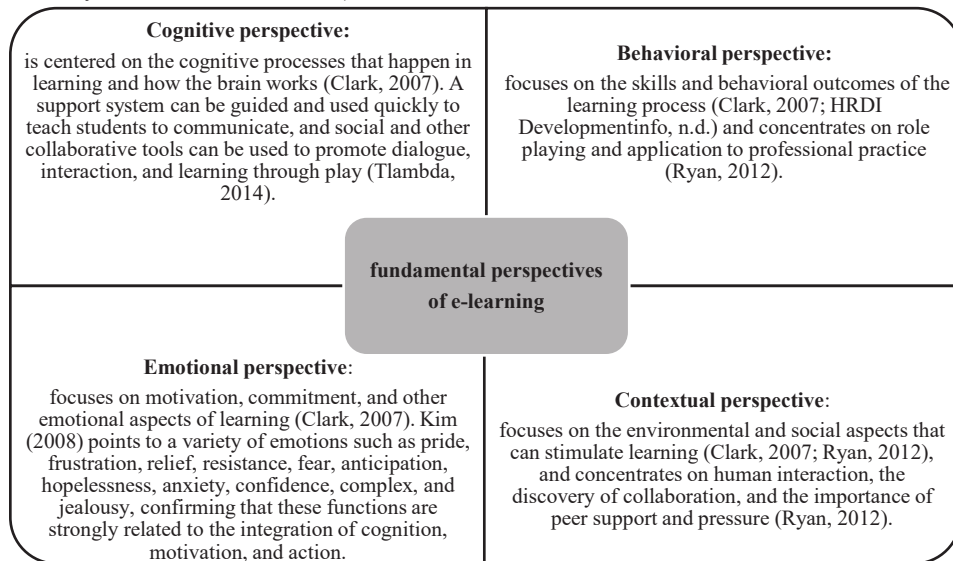


Figure 1. Fundamental perspectives of e-learning

Source: Kumar Basak, S. et al, 2018, p.197

Online education offers both positive benefits and negative effects. Within positive benefits students can:

- feel flexible to attend classes and work at their own pace and time;
- not have to deal with commuting or parking issues;
- learn to take responsibility for their own education with information available at their fingertips;
- hand in assignments easily and comfortably;
- are more willing to express their own opinions, discuss with other students, and learn from other students during group discussions.

But at the same time some students can face negative effects of learning online:

- may miss the direct interaction with the instructor and between students;
- may prefer to attend a traditional class with an instructor who teaches and guides them through the course;
- find access to the necessary technology challenging and the availability of technical assistance is limited.

In addition, some administrators and instructors who do not understand the workload may display a negative attitude toward online education. (Encyclopedia)

Results of the survey

It is also worth paying special attention to a new form of performing work that emerged in Poland and all over the world in 2020, namely: remote work¹, which was closely related to the COVID-19 pandemic that was proclaimed in March 2020 and the subsequent so-called speculative acts adopted in a rapid pace.

Table 1. Percentage of people who usually and sometimes perform work duties from home 2019-2020 (%)

Specification	Usually working from home	Usually working from home because of COVID-19	Sometimes working from home	Sometimes working from home due to the COVID-19 pandemic
Q1 2019	4,8	.	9,9	.
Q2 2019	5,2	.	9,8	.
Q3 2019	4,4	.	9,6	.
Q4 2019	4,3	.	9,9	.
Q1 2020	6,4	.	10,5	.
Q2 2020	13,1	9,5	8,4	5,1
Q3 2020	6,8	3,1	8,6	3,3
Q4 2020	9,7	6,3	9,5	5,2

Source: Author's own work based on data from GUS.

Many companies, as well as universities and schools, have done well technologically in terms of quickly transitioning to "home office" mode, although operating companies in the era of the COVID-19 pandemic has forced the use of new methods, previously unknown to the Polish legal order. Previously, the Labour Code allowed telework only in the form of tele-collaboration.

¹ The concept of remote work appeared in the Polish legal system for the first time with the entry into force of the Act of March 2, 2020 on special solutions related to the prevention and combating of COVID-19, other infectious diseases and crisis situations caused by them, i.e. . anti-crisis shield. Pursuant to Art. 3 sec. 1 of this normative act, in order to counteract COVID-19, the employer may instruct the employee to perform, for a specified period of time, work specified in the employment contract, outside the place of its permanent performance, i.e. remote work. Remote work may be recommended if the employee has the technical and local skills and capabilities to perform it and the type of work allows it. In particular, remote work may be performed with the use of means of direct remote communication or related to the performance of manufacturing parts or material services. The tools and materials needed to perform remote work and its logistic service are provided by the employer. When performing remote work, an employee may use tools or materials not provided by the employer, provided that it allows for the respect and protection of confidential information and other legally protected secrets, including business secrets or personal data, as well as information the disclosure of which could expose the employer to damage. At the employer's request, an employee performing remote work is required to keep records of performed activities, taking into account, in particular, their description, as well as the date and time of their performance. It should be noted here that the concept of remote work should not be confused with teleworking, as defined in the Act of June 26, 1974, Labor Code. Teleworking is regulated in Art. 675–6717 of the Labor Code, defining it as work performed regularly outside the workplace, with the use of electronic communication means within the meaning of the provisions on the provision of electronic services. In practice, remote work is also most often carried out using means of direct remote communication, which makes it similar to telework.

In comparison with European countries, Poland was characterized by a slightly lower than average value in the EU-27 countries percentage of people sometimes or usually working from home. In 2019, the highest percentage of employees sometimes or usually working remotely was in Sweden, the Netherlands, Luxembourg and Finland, while the lowest was in Romania, Bulgaria and Cyprus. In Poland (14.3% in 2019 and 18.1% in 2020) it was slightly below the EU27 average of 20.6% at that time. It can therefore be concluded that the degree of use of remote working in Poland is not the highest, and in the COVID-19 pandemic the process of transition to remote working was more dynamic in other countries than in Poland. (EUROSTAT)

It is also important to note that in 2019, the percentage of home-based workers in total workers was lower, indicating changes in the Polish labour market under pandemic conditions (Table 1).

During remote work as well as remote education, access to a good quality internet connection is a key element. In 2021, 92.4% of households had Internet access, an increase of 2.0 percentage points from the previous year and 5 percentage points from 2019. Year-over-year, the share of households with Internet access via mobile broadband increased by 5.3 percentage points and via fixed-line broadband by 1.1 percentage points. Both Internet access and the type of Internet connections owned varied by household type, class of residence, and degree of urbanization. Households with children were more likely to have Internet access than those without. Taking into account the class of place of residence, the percentage of households with the Internet was higher in large cities than in smaller towns and in rural areas, and taking into account the degree of urbanization – it was highest in highly urbanized areas (Figure 2).

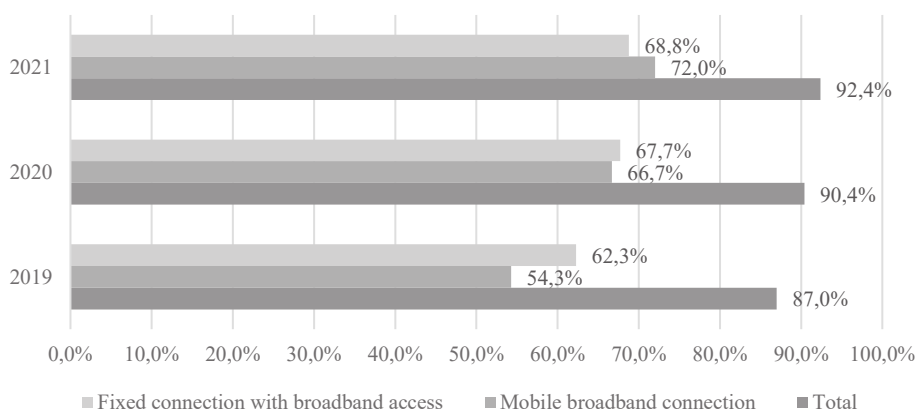


Figure 2. Type of Internet connections in households 2019-2021 (%)

Source: Author's own work based on data from GUS.

In March and April 2020, an Independent Student Association (ISA 2020) tried to diagnose students' situations in the initial period of distance learning. More than 3,400 students from 100 different universities in Poland took part in a survey conducted by the ISA. Among the survey respondents, as many as 53% indicated that they had encountered

a situation in which the teacher did not conduct classes remotely in any way, while in the case of 24%, this situation was valid more than once. When asked how the remote lectures were held, 68% of respondents indicated the answer “by mail,” and 63% said they were carried out on “platforms such as MS Teams, Skype, or Discord”.

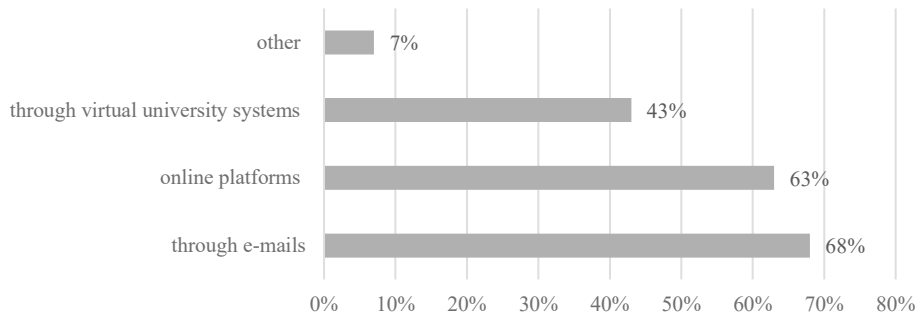


Figure 3. How the classes were held at the respondents' university (%)

Source: ISA 2020

Many teachers used several methods of remote working. This was primarily because of the different ways that different tools and methods are better suited for various purposes that are important in remote learning.

Table 2. Tools used during e-learning.

To teach	To keep in touch	To homework	To evaluate and examine	To show content in an attractive form	Other
Cisco Webex Discord Google Classroom Google meets Live Streaming Facebook Microsoft Teams Skype WhatsApp Zoom	USOS, e-hms Messenger Moodle Skype	USOS, e-hms Google Classroom Messenger Microsoft Teams Moodle WhatsApp	Microsoft Teams Moodle	Canva Google Maps Mentimeter Microsoft Excel Microsoft PowerPoint Microsoft Sway	Bitable CodeOrg ETwinning Kodable

Source: Based on the author's own observations.

Generally, tools used during remote learning (Table 2) can be divided into:

- those used for online lessons;
- for ongoing contact with students;
- for uploading homework;
- for assessments and tests;
- for adding variety to lessons, interesting presentation of material, transfer of material.

Summary and conclusions

Based on the undertaken research, the following conclusions were formulated:

1. Most of the teachers use several methods of e-learning. This is dependant on:
 - the level of knowledge of the available tools,
 - the ability to quickly learn to use the available tools,
 - the fact that different ways/tools for e-learning are better suited for the purposes of remote learning, and
 - what was available/advised by the University/School
2. Advantages and disadvantages in e-learning were already pointed out. However, the pandemic period also highlighted:
 - at the start of rapid implementation of e-learning, students reported a problem of too many different communication tools – e.g., each subject used a different platform. This was solved by guidelines and training organized by universities/schools.
 - a significant increase in time-consuming preparation and prediction of classes/ homework/ tests and in addition monitoring and checking the work – especially at the time of transition to remote working, but also later during the implementation of new solutions adopted by the departments.
3. Low digital competences of teachers but also gaps in digital competencies of students. However an increase of digital competence could also be observed:
 - some students are proficient in social media and instant messaging and cannot answer an email, follow a link, send an attachment, or use Office tools.
 - When pointing out this problem, it is worth remembering that it is often viewed as necessary to learn most of the above skills in computer science classes. The transition to distance learning has motivated many teachers to improve their skills in this area. Some did it on their own or with the help of colleagues. However, support from universities through training organizations was important.
4. Important role of institutional conditions in creating student-friendly e-learning environments:
 - implementation of necessary equipment and tools.
 - providing workshops for improving skills,
 - provision of helpdesk.
5. Problems at students' homes:
 - they are proficient in social media and instant messaging and cannot answer an email, follow a link, send an attachment, or use Office tools.
 - when pointing out this problem, it is worth remembering that they should learn most of the above skills in computer science classes.

In conclusion, it is important to point out that the future of e-learning is connected with analyses of the challenges and opportunities associated with remote education as well the strengths and weaknesses. Therefore, SWOT analysis is helpful.

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • More flexibility when it comes to participating in classes and better access to education, regardless of where one is; • Gaining experience that allows not only to continue teaching in the pandemic era but also to re-think the approach to remote education tools in the long term; • Accelerating the digitization of university 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Requiring more work and more time consuming (both teaching and learning) while at the same time maintaining the existing requirements; • Significant role of technical aspects in didactics; • Difficulties in adapting some classes to remote teaching, e.g., the discipline's specificity or the group's size
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • The possibility of making the study process more flexible; • A chance to create better learning conditions for students with disabilities • Motivation to develop and implement technological solutions that improve distance learning; • Dissemination of the digital competences among both students and teachers and providing the basis for their future development 	<p style="text-align: center;">Threats (Challenges)</p> <ul style="list-style-type: none"> • Preventing exclusion due to the necessity to have the appropriate equipment and learning conditions; • Keeping students motivated; • Adjusting of regulatory and institutional requirements to the challenges of distance learning; • Unknown long-term psychological and didactic effects of 100% remote learning - the need to monitor it closely.

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Wyzwania e-learningu w czasie pandemii w Polsce

Streszczenie

Głównym celem pracy było ukazanie konieczności podjęcia nowych wyzwań w edukacji z wykorzystaniem metod e-learningowych w Polsce w latach 2019-2021. Nowym podejściem oraz celem i wartością dodaną opracowania było wzbogacenie wiedzy na temat wykorzystania nowych metod dydaktycznych i badawczych w sytuacji pandemii, ale także po niej.

Do realizacji celu wykorzystano metodę analizy i krytyki literatury, a także analizę wskaźnikową opartą na danych historycznych z GUS, EUROSTATU i obserwacji własnej.

Przeprowadzone badania pozwoliły na sformułowanie kilku wniosków związanych z czynnikami wpływającymi na e-learning, takimi jak dostęp do Internetu, stosowane narzędzia oraz kompetencje cyfrowe nauczycieli i uczniów. Przedstawiono również krótką analizę SWOT, co jest kluczowe dla przyszłości e-learningu.

Słowa kluczowe: COVID-19, e-learning, nauczanie na odległość, edukacja zdalna

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Information about the author:

Dr Agnieszka Parlińska

Warsaw University of Life Sciences
ul. Nowoursynowska 166; 02-787 Warszawa
e-mail: agnieszka_parlinska@sggw.edu.pl
ORCID: 0000-0001-6640-3097