

PAWEŁ TOPOL¹

Methods and Forms of Distance Education during the COVID-19 Pandemic: Conclusions from the Literature Review

ABSTRACT

The main goal of the text is to collect conclusions from the experiences of educators and researchers with regard to various aspects of distance learning during the COVID-19 pandemic. Conclusions were collected on the basis of the author's own experience and the selected source literature. The article consists of two parts: "Conclusions from Polish literature" and "Conclusions from foreign literature". As the article presents mainly the Polish perspective, the first part is significantly longer than the second one. Part One deals with such issues as: the model of distance learning, the time of pandemic as a crisis situation, priorities in distance education in conditions of isolation, the issue of isolation, and some principles of assessment, among others. The university e-learning platform was also discussed as an example. Part Two addresses such issues as: seven lessons from the pandemic, effectiveness of online testing, psychological aspects regarding a student and a teacher, and augmented reality in distance education during COVID-19.

Keywords:

distance education, COVID-19, virtual education, teaching methods, e-learning, online applications.

INTRODUCTION

Distance education is primarily based on "digital education". It should be understood as education supported by digital tools and materials. E-learning should therefore be defined much more broadly than distance learning. Some definitional

1 Faculty of Educational Studies, Laboratory of Educational Applications of Computer Science, Adam Mickiewicz University in Poznań, Poland.

E-MAIL: topol@amu.edu.pl ORCID: 0000-0002-9810-7214

clarification is proposed by Topol (2020a), namely that e-learning is actually learning supported by “e-”, that is, electronics – all electronic devices and materials. So what happened definition-wise? As Topol (2020a, p. 71) writes, “the term has become a kind of a buzzword. E-learning has been semiotically reduced precisely to remote, distance forms”. Consequently, in this article, we will stick to the new, colloquial definition.

Before we address the issues related to the pandemic time, we need to investigate what forms and functions the digital education can take compared to the classroom education conducted face-to-face. Plebańska (2020, p. 39) distinguishes the following configurations:

- “digital education as the support for traditional education;
- blended education, combining the use of digital education and traditional education;
- digital education supported by traditional education;
- digital education in its pure form”.

During the pandemic, education took all of the above forms. At one time, only distance education was provided and educational institutions were completely closed; at another time, “hybrid” education was introduced, which combined distance and on-site education. Practice has shown – and this is also reflected in the examples cited in the article – that the last type of e-learning, “in its pure form”, proved to be relatively difficult to implement in various aspects: from planning and its implementation, the preparation and development of electronic educational materials, through organizational problems on the part of the school and the student’s home, including technical and/or hardware problems.

This publication is a continuation of two previous ones (Topol, 2020a, 2020b). Both previous parts referred to the academic discussion that took place among members of the Academic E-learning Association – SEA (n.d., see: Netography) – in 2020 and in which the author actively participated. To clarify, the Association is a formal institution that works for the promotion of e-education in tertiary level education and for the development of e-learning at all levels of education in Poland.

The first article (Topol, 2020a) consists of several parts. The main part is an account of the academic discussion among SEA members, conducted over several months on the Association’s forum platform. Hence the title “2020 Discussion”. The participants are experienced e-educators – specialists in the field of e-learning in their home academic institutions. They speak about the organization of e-education, methods and techniques used, as well as online applications used for vide-

oconferencing such as Zoom or Microsoft Teams, but not only that. The numerous contributions of the participants are accompanied by the comments of the author of the article.

The second article (Topol, 2020b) presents a separate discussion, also on the SEA web forum. It is a natural continuation of the previous thread. Specialists-educators of distance learning share their recommendations regarding methods, techniques, and tools. As in the first part, in the article (2020b) the author posted his own recommendations and comments.

Thus, the two publications mentioned above will serve as introductory examples to the section on lessons learned from the Polish literature. This article is slightly different as it goes beyond the boundaries of academic education. It refers to the methods, recommendations, visions of conduct mentioned in the literature as well as conclusions from the previous experience of pandemic education at different levels of education. Therefore, the term ‘student’ may sometimes refer to the academic level as well.

The article has been divided into two parts, referring respectively to selected examples from Polish and foreign literature. This is an intended procedure. Such an approach makes it possible, at least in principle, to point out the conclusions of Polish and foreign educators separately. Since the article is written from the Polish perspective in particular, this part is much longer.

CONCLUSIONS FROM POLISH LITERATURE

Distance education must be prepared, if not programmed, with special care and taking into account its various components. Plebańska (2020) shows these components in the author’s “distance learning model”, presented in Figure 1. Only lesson 1 is described there, as the layout is repeated in the following lessons. Notice the “class materials” element that the author has placed vertically in the space before the lesson. All elements – from content delivery to synchronous meetings – are equally important and require careful preparation. However, the methods of implementing them and choosing the optimum tools are a separate matter. In times of pandemic, when, for example, all education is conducted exclusively online, due to the closure of schools and universities, the selection of effective methods and tools is particularly important, as there is no opportunity to “correct” any shortcomings by face-to-face classes at school.

However, this “example of a process...” is not entirely convincing, because it does not describe a factual process, i.e., a sequence of activities spread over time.

According to PWN Dictionary of the Polish Language, a process is “a course of consecutive and cause-related specific changes” (Słownik Języka Polskiego PWN, n.d., see: Netography). Plebańska’s graph presents various possible forms of activities to be used by a teacher in parallel for each or selected classes. What is not included here is a timeline distribution.

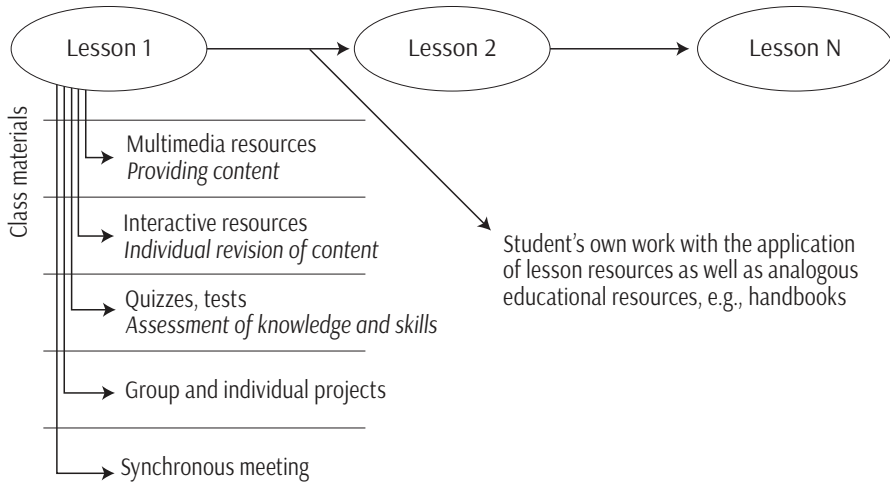


Figure 1. An Example of Distance Education Process

Source: Plebańska (2020, p. 39).

Indeed, the methods and tools for organizing student/pupil learning should be chosen along with the time factor. Koludo (2020) proposes a model based on the concept of anticipatory education/learning (cf. in Polish literature: Dylak, 2013, 2015; Juszczak-Rygałło, 2014; Banaszak, 2017). Koludo enumerates four stages of optimal course of lessons, based precisely on the above mentioned theory:

1. Activation stage – selecting issues for students to prepare on their own before the lesson. In this stage, students activate their prior knowledge. They also prepare questions to ask during the lesson.
2. Processing stage – students consult with each other and analyze the assigned content, while placing it in individual or group access spaces (notebooks, folders).
3. Systematization stage – occurs during the class. The teacher listens to what students have to say and orders the information in a systematic manner.
4. Assessment stage – students evaluate the activities, which allows them to verify not only their own actions and achievements but also their learning

style(s) or motivation factors. For the teacher, this information can be helpful in designing the next lesson or the phase of instruction.

The concept of anticipatory education is closely related to the concept of the flipped classroom. Publications by Rostkowska (2012), Janicki (2016), or Olszewska (2018) include selected examples of Polish empirical studies, written by educators-practitioners. The authors present methodological assumptions, course of classes, and conclusions. The flipped classroom seems to be a useful method in distance education, because, among other things, it motivates students to prepare for classes in advance. The activities themselves, on the other hand, make it possible to focus on the exchange of information developed beforehand, on student/pupil discussion, assessment of this information and, finally, on the assessment of the whole lesson. But here we come back to the problem of time, as student's "advance preparation" is another challenge when working in isolation at home with limited opportunities for direct contact with peers. Yes, one can go online, but it is difficult when, for example, the whole family uses the same home computer.

The time of the pandemic can undoubtedly be called a crisis situation, obviously, also in the context of education. Bilicki (2020, p. 16) notes that "in working with a child or adolescent in crisis, it is important to recognize that the crisis is not an event, but a reaction to an event". The stability of an individual can be compromised when faced with exposure to a situation "with traumatic potential". Adolescents are not as resilient to crisis situations as adults. They do not have the developed defense mechanisms. Their life experience may limit their realization that they are in such a crisis at all. This is why reaction to a crisis is so important. According to Bilicki (2020, p. 17), the correct course of action in the face of a diagnosed health threat is the same as it was before the pandemic, and therefore, "we still have a duty to cooperate with parents and providers of psychological and pedagogical assistance". Despite the closure of schools, the cooperation of a class teacher with a pedagogue and school psychologist should not cease. Obviously, it is necessary to report any crisis situation to the school management at the same time.

Bilicki (2020, p. 18) lists several ways of dealing with children and young people in crisis situations, which he places under the common heading of "what not to do". These, along with a brief paraphrase, are:

- 1) Do not be surprised by the fact that a student is in crisis – you should not punish, accuse with questions, or give good advice.
- 2) Students should not be contradicted in their claims of being under stress.

- 3) Do not underestimate their crises – adolescents experience stress very strongly, so adult vigilance is recommended.
- 4) There should be no fear of psychologists, psychiatrists or drugs – a calm approach to the problem with a positive attitude is needed.
- 5) Adolescents should be distracted from using harmful substances, e.g., drugs or alcohol, and advised not to make important decisions by themselves.

Further in the text, Bilicki (2020, pp. 18–19) suggests several affirmative activities. A brief paraphrase of them follows. Among other things, one should:

1. Nurture good relationships and bonds with children, students.
2. Emphasize the ability and need to segregate information.
3. Encourage involvement in pleasurable activities, e.g., hobbies or passions.
4. Teach how to keep a proper daily rhythm.
5. Raise awareness of the existence, or even suggest relaxation techniques.

Methods of practice should be derived from more general assumptions, from a set of principles or priorities. Pyżalski (2020, p. 25) proposes his own set of such priorities. He presents it in the form of a pyramid, which he identifies with a building “that we would like to build through our educational activities. This building is the broadly understood good of our pupils and of the whole society in crisis (of which we ourselves are a part)”.

Figure 2 presents the pyramid. If it is meant to symbolize building a house, we should analyze it from bottom up. The basis of this arrangement is, as the author writes, the maintenance and improvement of interpersonal relationships mutually between all parties in the educational process: a teacher, a student, and a parent (cf. Witkowski, 2020, p. 92). Pyżalski, describing his pyramid, changes “parent” to “family”, thus indicating that intra-family relationships also include other family members, such as siblings and grandparents. The second level helps strengthen the support and build resilience in difficult situations. Only after both of these levels have been well worked through, can a teacher build effective remote didactics. Pyżalski (2020, p. 27), therefore, makes educational success dependent on previous social conditions. However, he points out that the teacher should use “correct strategies, processes, and tools that take into account individual conditions, both in the context of the local environment, groups of students, and individuals”.

The issue of assessment should be mentioned. Three situations during the pandemic period can be observed:

1. In the first part of the school/academic year, learning is stationary and uninterrupted – we witnessed this situation in 2019/2020, when schools and universities switched to distance learning at the beginning of the second semester.
2. Schools operate in a limited mode, e.g., learning takes place alternately – partly stationary and partly online.
3. Schools and universities are closed completely and all learning takes place online.

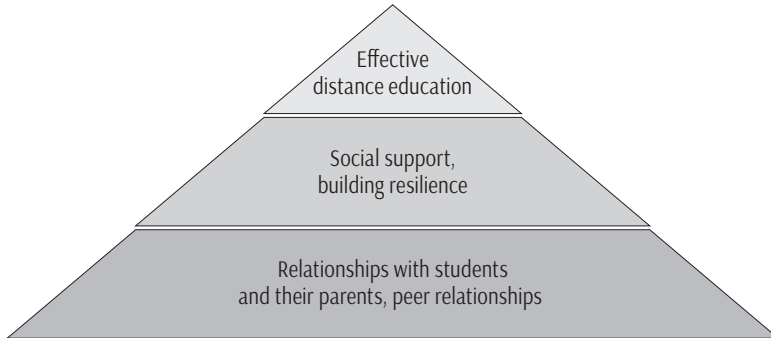


Figure 2. Distance Education Priorities in Pandemic Isolation

Source: Pyżalski (2020, p. 26).

In situation 1, grades still appeared in a “regular” mode for the first semester. Many teachers who had no or almost no experience in remote teaching – and now had to work that way – faced a difficult task of developing the assessment methods that reflected the actual knowledge and skills of the students. Here, any help was valuable: mutual peer help as well as help from the school and university authorities to develop certain tools for the teacher, train him/her and organize trainings and workshops. Currently (as of September 2021), the absolute majority of schools work in a stationary mode, but we expect the fourth wave of the pandemic and a repeat of the situation from 2020. The support for teachers may not be so urgently needed now, but the courses or materials mentioned above should be improved all the time, because we do not know what we will find in the future, and they will have to be ready for immediate implementation. Witkowski writes extensively about the need to support teachers’ work (2020, pp. 90–92).

In situation 2, learning alternates, so some difficulties arising from grading student’s work online can be corrected when the student attends a face-to-face class. For example, the student can present the results of their remote work in a face-to-face classroom.

In situation 3, the elements mentioned in 1 return. In the classroom mode, giving a fair and honest assessment seems easier than in the fully remote mode. Here a good method is to combine several activities and tools, not just conducting tests on the Moodle platform. Pseudo face-to-face contact via videoconferencing systems such as Microsoft Teams or Zoom will be of great importance. Of course, these tools have their limitations, but it will not be difficult, for example, to organize a debate, or use brainstorming techniques, where students can share their screens to show the course or the result of their work... There are many options. Of course, all this requires a creative teacher who will organize and carry out these activities in a way that is interesting and motivating for the students themselves.

Sterna (2020) recalls the basic components of general assessment principles, although the article deals with assessment in the coronavirus era. The student should receive: (a) feedback on what was done well, (b) information on what was done poorly and what to do to improve it, and (c) guidance on how to learn in order to develop further. Assessment does not have to come down to the grades given by the teacher. Sterna lists three common forms of student feedback: from the teacher, from another student (peer), and student self-assessment.

Nowadays, we turn to building institutional systems to support online teaching and learning. The task is very complex and difficult. Witkowski (2020) confirms that none of us can now build a coherent distance education system for the whole school, so that it will anticipate all possible scenarios of developments and implementation difficulties. So let us be clear that we are building makeshift systems, that there will be errors in them, and that some of the solutions will not work as expected (Witkowski, 2020, p. 87).

We should mention at least one example of a system which looks very positive – at least based on descriptions – because many places are available only for people with an account and after logging in. It concerns the University of Warsaw, which maintains a special section on its university website dedicated to distance learning (University of Warsaw, n.d., see: Netography). It is divided into two sections: for lecturers and for students. The former contains basic information about the organization of the current academic year and forms of education at the university in the context of COVID-19 pandemic. There is also detailed information supported by tutorials on how to launch distance classes on the university's virtual platform called "Kampus". The lecturer will also find rules for organizing and conducting university written exams. In the latter section, the student will find links to the "Student's Essentials", which contains, among others, rules and advice on using the university's virtual platform. In the additional section, there are links to all elements of the university's e-learning system (here is a selection of several):

- “Kampus 1” – the link to the e-learning platform designed, among other things, for distance classes for undergraduate, graduate, doctoral and post-graduate students. There are also such resources as safety training for first-year students, library training, and language level tests;
- “Kampus 2” – the additional platform for distance classes of various types;
- “Kampus-examinations” – the platform designed to conduct written remote examinations, including in very large student groups;
- “Kampus-employee” – the platform where enrollments for employee training are conducted;
- “Kampus-projects” – the platform for remote courses, trainings, workshops and conferences conducted as commercial projects, or intended for people from outside the UW.

The initiative of the University of Warsaw should be considered noteworthy, if not emulated. Access to some elements requires having an individual account and prior logging in – which is obvious – but publicly available descriptions of particular sections and the system as a whole indicate a comprehensive approach of the university to distance education, regardless of whether the university introduces it entirely due to the pandemic, in a hybrid form, or when working in a stationary mode.

Now we turn to more detailed accounts of educators. We are talking about the publication issued by the School with Class Foundation – *Like People, Like School: Personal Experiences from the Pandemic* (2021). It is a collection of short articles written by several teachers, school directors, and students. They share their personal experiences of education during the pandemic.

I will quote two teachers’ contributions. The first, Sopyło (2021), is an account of two virtual meetings: one with fifth grade elementary school students and the other with adults. Both were held *via* videoconferencing. The first meeting was a virtual workshop on online safety. One of the topics was the issue of strong or weak passwords for online sites. This seems to be a particularly necessary issue just in the period of permanent distance or hybrid learning. It should actually be a mandatory school activity to raise awareness of children and young people. The second workshop, also in virtual form, was attended by psychologists, educators, and school teachers. Here, in turn, it was about the so-called hegemony and hate speech on the Internet. Describing the course and his reflections on both workshops, Sopyło (2021, p. 68) concludes:

In my opinion, a good online workshop has a lot in common with a good speech. When speaking in front of people, first I have to get their attention. Because the fact

that they are sitting in front of me, that they are somewhere there, [...] doesn't mean at all that they are listening. [...] I can't even be sure that they are there. And if they are, perhaps it is because they have to be. In order for them to be present not only with their body, I have to gain their attention, interest, build a relationship between them and me. The better the relationship, the greater the chance that they will accept what I offer them.

The second author (Paździor, 2021) comments, among other things, on the assessment of independent remote work of students. It seems crucial to him to divide the grading procedure into stages. The author first commented on written work and sent back an e-mail with an extended comment. At the same time he suggested directions for development and room for improvement so that “the review, and perhaps additional consultations, became part of the formative work, and the summative assessment came later. In the case of project work, I even decided that such a consultation would be mandatory” (Paździor, 2021, p. 70). According to the author, consultations “teach responsibility, facilitate a good atmosphere, encourage reflection, further motivate students, and at the same time prevent them from leaving work to be done until the last minute” (2021, p. 70). It is hard to disagree with the above comments and suggestions. The online working methods chosen by the educator must be accompanied by the thoughtful development and/or refinement of techniques and tools.

Paździor also points out that “the very first experience of the pandemic showed that students had too much work to do and teachers had too much to prepare and mark” (2021, p. 70). This is a so-called self-evident truth that school and university authorities were often unaware of before the COVID-19 pandemic. The disproportionate effort and time investment on both sides is also mentioned by Plebańska (2020). According to the author, “modern education is no longer a 45-minute lesson, but a process of continuous improvement 24 hours a day, 7 days a week. Students participate in the didactic process everywhere and all the time” (Plebańska, 2020, p. 37). Similar opinions are presented by Urbaniec (2020) – a member of the Academic E-learning Association. Paraphrasing the author's words – in synchronous or asynchronous mode of work, an efficient and well-organized academic teacher is a “treasure” for the university. Urbaniec also comments that he was surprised by the huge increase in materials for students on the virtual platform at his alma mater (the Jagiellonian University) at the beginning of the pandemic. He talks about an increase by several dozen times in a short period of time and expresses his admiration for the effort of the lecturers. Well, one could say that everything has its pros and cons. Does this also mean a significant increase in responsibilities and effort on the part of the student? This is not indicated by the author.

CONCLUSIONS FROM FOREIGN LITERATURE

Rubens (2021) published an article on the Media & Learning platform in which he lists “seven lessons learned from teaching and learning during the COVID-19 pandemic”, written from a Dutch perspective. These are both the author’s observations and his recommendations and suggested approaches. They are as follows, along with a brief elaboration (some content was omitted from the quote because the elaborations were extensive):

1. Digital divide is a persistent social-economic gap.
One computer at home is not enough if the entire household needs to work and study at home. That is why local governments and schools have often provided laptops to families who do not have the facilities to learn at home.
2. Online learning needs different ways of scheduling.
Units of online classes took just as long as those at school. Lessons cannot be planned in the same way as usual. Teachers and students need more space in the daily schedule.
3. Application overload can be a problem.
Teachers were looking for apps to facilitate online learning. They did not always share this knowledge with each other. This can lead to cognitive overload as students have to learn to use different features of different programs.
4. Synchronous online learning is widely used.
As of March 2020, online learning support applications have been used massively. They can be used for both interaction and collaboration. However, to a large extent, they have mainly served to provide information.
5. Improve ‘Emergency remote teaching’.
This is a comprehensive transfer of classroom teaching to distance teaching. If possible, ‘hybrid’ teaching should be used, where some students are taught in the classroom and some online. Both learning models are different and both have their advantages and limitations.
6. Foster social connectedness.
The more we learn online, the more we should promote activities that facilitate bonding and a sense of belonging. For example, you can organize activities that require collaboration but are not always related to the task content.
7. Stimulate self-regulation.
The pandemic has shown that not all students are capable of properly regulating their own learning. It is therefore necessary to invest in the development of these skills so that students learn to plan, set goals, or manage their time. Self-regulation should be included in every curriculum.

Distance education implies the need to use e-learning forms both in teaching and later in testing the knowledge acquired by students/pupils. This raises the question of the effectiveness, efficiency, or generally the functionality of testing in two forms: traditional paper-based and computer-assisted. Four researchers from Louisiana State University conducted a study on the above issue on a large sample of undergraduate and graduate science students (Smolinsky et al., 2020). The authors conclude that computer-based testing (CBT) is as consistent with traditional paper-based testing (PBT) as computer-based tests are with each other. The results are also consistent in classes using paper-based tests, which have slightly better scores than classes that are fully computer-based and use only computer-based assessments. The study was conducted on a sample of 324 individuals, which justifies making generalizations. Thus, they show that paper and electronic tests are identical or nearly identical in terms of results. This is a positive inference in the context of methods for testing knowledge and skills remotely. Clearly, the essential issue is the proper construction of tests. Another study, George (2020), found positive results in using online exams among Trinidad and Tobago students. It found that average scores were higher than in the last five years before the pandemic.

Fully online education deprives its participants of direct contacts. A student/pupil “locked” at home and “tied” to a computer may feel isolated, deprived of all that a peer environment could give them – including in the social sphere. Bozkurt and Sharma (2021) write about the need to focus on humanism and a humane approach to teaching and the learner during the pandemic. The authors write about “the art of teaching and learning in an educational ecology” (Bozkurt & Sharma, 2021, p. ii). In another section of the text, they advocate that the actions of education policymakers and educators themselves should be a “care and empathy-oriented human-centered pandemic pedagogy” (Bozkurt & Sharma, 2021, p. iii). Raza et al. (2020) studied social isolation and the fear of the coronavirus in parallel. They showed in a sample of 516 students in Pakistan that it was the fear of the virus that was an important motivating factor for the respondents’ online learning.

The psychological aspect is also important on the teacher’s side. There are those who, on the contrary, have doubts about learning within the school walls in the current time. Fagell (2020) writes about the case of a female teacher and her particular dilemmas about classes during the pandemic. She speaks of her concern regarding a return to traditional classes at school. The teacher explains that she fears contracting the coronavirus in a crowded school setting where each student comes from a different home and family. She would not want to become infected herself or transmit the disease to her large family. This aspect is often overlooked

in literature, yet it is not trivial. We do not know what her decision was, but we do know that the teacher is/was aware of the risk. Trevors and Duffy (2020) conducted research on the risk awareness of the coronavirus in a sample of 518 US adults recruited from 12 states. They showed that the level of this awareness is correlated with the moral value paradigms of the respondents.

Continuing the issue of the above mentioned “confinement” at home, one could risk a thesis that forms of distance education in synchronous mode – e.g., thanks to videoconferencing applications – give learner the possibility of at least pseudo-contact in real time with other people. Admittedly, this is made possible by cameras placed on the monitor, but it is still some kind of a middle way. Another form of visual “going out” of the room or house is provided by augmented reality (AR). The user sees a real image with superimposed elements or virtual objects, or vice versa – sees a virtual image with superimposed elements from the real world environment. This technology is not new, but it can be very useful in distance education, specifically in a situation of isolation during the pandemic. This issue was addressed by Eldokhny and Drwish (2021). They conducted a study of the effectiveness of AR in distance learning during the COVID-19 pandemic. The study sample consisted of 50 individuals aged 19–20, 10 of whom were selected for the initial pilot study. The pivotal study was conducted using the pedagogical experiment method, where the experimental and control groups consisted of 20 subjects each. The former worked with the AR environment and the latter without any access to it. The results showed that AR was more effective in supporting learning achievement and skill acquisition in virtual classrooms compared to virtual classrooms that did not use augmented reality.

A study in a much larger sample was conducted in Saudi Arabia on university students and lecturers (Alasmari, 2021). The purpose of the study was to obtain information about the functionality of e-learning systems during the COVID-19 pandemic. The information was collected electronically, of course. A total of 916 teachers and as many as 4623 students were surveyed. Statistical analysis of the results showed that in order for e-learning systems to be functionally effective, more resources are needed on the part of universities: for improving the systems themselves, but also for providing support at various levels both for students and for university teachers. Admittedly, the author writes that “quantitative findings of this study have suggested that supportive and efficient infrastructure is important for the purpose of ensuring smooth learning in the COVID-19 era” (Alasmari, 2021, p. 58), while he does not limit the understanding of this “infrastructure” to hardware or software. An important part of it is effective and efficient faculty teaching and student learning.

CONCLUSION

The conclusions from the Polish and foreign literature cited above are consistent. Historically, in many countries, the onset of the pandemic came as a shock, especially when it resulted in the complete closure of schools and universities. Teachers had to “immediately” switch to distance learning, which was a huge effort for those who had no experience with e-learning and even more so when they had minimal experience with information and communication technologies in general. Many universities, and I believe schools as well, motivated their IT staff to: analyze the technical capabilities of the institution, analyze the materials already developed before, and analyze the degree of readiness among the teaching staff to deliver online education (Topol, 2020a). The next natural step was to develop recommendations for the universities as individuals, but also for educators, which took place, for example, in Poland in a broad academic debate (Topol, 2020b).

We seem to have done well when navigating education in this difficult time. Developing methods and tools for teaching and learning remotely early on is probably the key. We have had plenty of time since the beginning of 2020 to develop and refine these methods and tools. We also have had time to prepare the teaching staff: teach specific methods and tools and provide both institutional and peer support (cf. Witkowski, 2020, pp. 90–91). The above actions have certainly not been in vain, as a huge number of educators have improved their teaching and technical skills in the area of online didactics. It would not have been in vain even if COVID-19 or any other pandemic were never to happen again. However, we are not sure if it will. Pandemic conditions, though “dormant”, actually continue (as of September 2021) as the fourth wave is forecasted. Starr (2020) separates these current, short-term challenges, which need to be corrected immediately or at least on an ongoing basis, from the longer-term ones, which require anticipating challenges and at least some attempts to prepare for them.

Thus, one cannot close the subject and consider the matter as a non-issue. One should constantly work on the development of e-learning. It is not about enforcing this form of education. It is about improving it.

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