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Distance Learning in the Polish and Korean Universities During COVID-19 Pandemic[1]

Abstract

At work, distance learning methods have been compared in Silesian University of Technology in Gliwice (Poland) and Hankuk University of Foreign Studies in Seoul (South Korea). The results of the empirical research among the academic teachers and students conducted in both universities are similar: distance learning is not satisfying for both groups and it is not effective.

Key words: *Poland, South Korea, distance learning, university, e-learning, e-class*

Introduction

COVID-19, which is the name of the disease induced by the SARS-CoV-2 virus (Gorbalenya A.E., 2020a), caused that almost all schools in the world closed down in the first months of 2020. It is estimated that over 1.2 billion children had to leave their classrooms in March 2020. As a result, a dramatic change has taken place in world education: we have moved from direct education to distance e-learning education, in which the learning process uses various digital platforms. During this time, thousands of libraries were also closed, and therefore access to bibliographic sources deteriorated significantly (see UNESCO, 2020–03–19). It can be

concluded that schools and universities have never before experienced such a high level of disorder, which has affected all generations: preschool children, pupils, students and parents, often forced to telework. Earlier research suggested that online learning allows for more information accumulation, takes less time, can be done anytime and anywhere, therefore the changes caused by the coronavirus should not negatively affect the drastically changed form of teaching-learning.

This global crisis caused by the pandemic has brought education in all countries into the digital world. Due to COVID-19, many schools started the educational process using the Zoom mobile video program. OECD developed the principles of education in times of a pandemic in the form of distance learning (UNESCO, 2020–03–10).

Learners, teachers and parents tried to pass on to other schools the good practice in distance education, i.e. effective, efficient and positive experiences in the teaching-learning process (see Pearson, 2020; A.E. Gorbalenya et al., 2020b). The new environment of digital distance education began to be intensively diagnosed in various countries in the spring, recognized by its participants, and local online education experts began to emerge from among them.

Since March 2020, many professional colleges and universities in various countries have implemented distance online education to deliver their study programs, and this has in turn resulted in changes to class planning, the replenishment of the media and teaching materials (lots of hardware and software had to be purchased) and university campuses. The initial optimism was gradually diminishing due to the emerging problems with computer hardware, outdated software, difficulties with streaming information (sound, image or video recordings), because not all students had access to broadband Internet and many of them also had older versions of computers, as well as exhaustion associated with many hours of interactions in the e-class, more and more time devoted to browsing didactic materials received from academic teachers, or the lack of free time to pursue one's interests and recreation. Since we received such signals from academic teachers and students in the first months of mass distance education, it prompted us to undertake empirical research on this subject.

Cultural foundations of education in Poland and South Korea

Education in both countries is strongly influenced by culture (see S. Juszczyk, 2020). Culture in South Korea is more collectivist, heavily influenced by the philosophy of Confucius (Lee J.K., 1986; Yun S.S., 1996), according to which learners,

while remaining modest, participate in numerous and in-depth interpersonal interactions (in the classroom and with peers) and in education; learners function in the society that supports them. Poland is dominated by an individualistic culture, in which people pay more attention only to their own affairs and the matters of their closest family. There are values in individuals that can be disseminated through open verbal communication. But in both countries studied, one can find high-power distance cultures, where everyone has a legitimate place in society, and this means respecting older, more educated people and the importance of the achieved social status. This implies that there is a clear hierarchy between teachers and learners, and learners tend to show respect to teachers and try to avoid conflict situations, especially in Korean education. These selected similarities and differences directly affect the culture of organization and leadership in education systems in Poland and South Korea (cf. S. Juszczyk, YD Kim, 2017, pp. 132–143).

Open, flexible and distance learning in the studied countries

The roles of self-education (self-study, self-development) and digital media (cf. S. Juszczyk, S. Kim, 2018, pp. 124–136) as well as indirect methods of communication are increasing in both countries, which contributes to the development and subsequent development of open education, flexible learning, open educational resources and social learning (S. Juszczyk, YD. Kim, 2016, pp. 163–173). Let us characterize the above-mentioned concepts and discuss their significance in the contemporary educational reality.

Open education is the concept of how people can produce, disseminate and construct their knowledge. Open learning enthusiasts believe that every individual should have access to high-quality educational or bibliographic sources, and the barriers preventing this access should be eliminated. The following factors may constitute the barriers: the costs of developing and publishing bibliographic sources, the existence of outdated sources as well as legal limitations of cooperation between learners and teachers, especially regarding the provision of teaching materials. Collaboration and enabling access have become the most distinctive features of open education because education provides knowledge and allows information to be shared between stakeholders.

Flexible learning is synonymous with open education, including the so-called blended learning, e-learning and distance learning (S. Juszczyk, 2002; UNESCO, 2002), personalized learning and learning based on the use of internet sources (web-based learning). These types of learning play an important role in broaden-

ing the educational opportunities of people from different regions of the world. They can directly expand access to higher education and increase the effectiveness of learning through work and learning in a social group.

Distance learning is a type of providing education and didactic material to learners who are not physically in a traditional place, such as a classroom or lecture hall. It can also be called „fostered open learning" which has the following characteristics: (a) flexible - because learners work where they once chose their place according to their professions, families and different commitments or responsibilities; (b) all-inclusive, as all learners receive high-quality teaching materials necessary for their studies; (c) social – because the learners, experiencing the tutorship of teachers together, participate in online conferences, study online and participate in organized forms of courses, therefore they follow the social learning characteristics given by J.S. Brown and R.P. Adler (2008).

Until the current pandemic, e-learning was mainly used at university and in senior grades of high school. In accordance with the orders of university chancellors, this form of education could be used in the implementation of specific subjects or courses or intended for people with specific disabilities, including motor or sensory disabilities (visual and hearing impairment), for people living far from academic centers and for people who, due to the nature of their work, could not participate in face-to-face studies. However, in the time of the pandemic, all primary schools, secondary schools and higher education institutions have had to fully implement the distance learning process. That is, millions of learners around the world had to undertake distance learning online or offline in their home. During the implementation of this form of learning, the following technical, social, cultural and methodological problems arise: quality and equipment of the computer, as well as its educational and communication software, access to computers (especially in large families, for people who do telework and are forced to share a computer with children, access to computers in orphanages or foster families), or the level of teachers' preparation to use ICT, their equipment and software of various quality and often lack thereof, and the lack of advanced educational platforms in schools and universities. Schools and universities tried to overcome these difficulties by purchasing new hardware and software, organizing training for teachers and developing educational platforms. For these reasons, we decided to undertake empirical research to diagnose the existing difficulties on the part of universities and students, and to learn about the opinions of students and academic teachers during the summer semester of the 2019/2020 academic year in Poland and South Korea based on intentionally selected universities in these countries: Silesian University of

Technology in Gliwice (Poland) and Hankuk University of Foreign Studies in Seoul (South Korea).

Distance education platform at the Silesian University of Technology (Poland)

The LAN administrator in the Institute of Education and Communication Research at the Silesian University of Technology (SUT) said in an interview that the Distance Education Platform (DEP) at SUT was prepared before the pandemic to support approximately 90% of all subjects in the study networks implemented in university as well as courses that were intended solely for distance education. Due to the content of the education, the university purchased the full version of the Corel software (https://www.polsl.pl/pomoc/strony; https://cze.polsl.pl/witamy. aspx.). The Moodle platform used offers the following options: (a) publishing the content of all university sources, (b) publishing or sending teaching materials by academic teachers in the most popular formats, (c) sending information to students, (d) synchronous communication: chat, multimedia conference, e.g. BigBlueButton, Skype, Google Hangaouts, Zoom.us, (e) asynchronous communication: forum, e-mail, (f) interaction with students through: tasks, quizzes, (g) managing the education process by: registering students' participation in e-classroom, analysis of their activity and learning outcomes, evaluation and self-evaluation. DEP has a well-structured user interface for teaching and self-study work, however, it shows poor operational fluidity during peak hours where academics and students use the platform. The Zoom communicator is very helpful in conducting online meetings, during which academic teachers can talk to students in real time, they can divide them into groups and carry out classes in such a way as to increase their attractiveness. Sharing the screen with meeting participants becomes very important for all participants in an online session. These two types of distance learning platforms are effective for both engineering and social science and humanities students. The only difficulty is the implementation of practice and laboratory activities. Some of the laboratory activities can be carried out with the help of computer simulations or videos presenting technical issues. In turn, in virtual classes, one can teach computer programming.

In mid-March 2020, the Chancellor of SUT issued a decree regarding the implementation of all classes in a distance manner, which was then supported by intensive training of academic teachers, carried out by local LAN administrators and the University's Distance Education Center. The existing educational proce-

dures were reorganized and vice-chancellors, deans, institute directors and heads of departments implemented e-learning methods and principles in each university unit. We learn to support our students in problematic situations through their analysis, discussion and implementation of good practices in the teaching and learning process.

Opinions of academics and SUT students on open education during the pandemic

In the course of empirical research, written categorized interviews were conducted with: 2 LAN administrators, 18 academic teachers (professors, doctors and masters) in engineering and pedagogy, and 25 full-time students of pedagogy. The results of the interviews were transcribed with regard to their content and the language used.

Academics confirmed that they have high-quality computers purchased from research funds, equipped with the latest educational and specialized software. Their use is under systematic technical control of administrators and IT specialists, which results in the effective use of IT resources. As for many academic teachers the continuous process of distance education is a new phenomenon, appropriate and detailed procedures and activities have been introduced to control the distance learning process.

In the interview, many academic teachers recalled the time when they started their studies at university and called this period „the first stage, related to learning in lecture rooms, with written tables and later displayed slides containing many comments, tables and drawings or diagrams". „During our professional career, we observed the evolution of" stage two, in which we continued to physically teach students in lecture halls or classrooms, but the use of ICT (new media in general, as well as the visualization of complex phenomena and processes, computer simulations, advanced statistical computing on supercomputers, design methods, etc.) in the didactic process increased". As the world is currently experiencing another autumn wave of new infections in 2020, distance learning will continue in both universities and an increasing proportion of schools as the infection rate increases and teachers and students are quarantined. Therefore, in the opinion of the respondents, „the next stage of education will go beyond the replicated lectures so far". „Therefore, we need to ask ourselves, how we can make e-classroom learning more effective, how we can make it more interesting or even enjoyable?" The respondents also believe that higher education has the character of lifelong

education, therefore the skills developed during the pandemic will certainly be used in self-education.

One professor at the Institute of Education and Communication Research, who used the tools of the Moodle and Zoom platforms in his distance teaching, said: "They changed the way of educating. They allow me to be more efficient and effective in working with students than a group chat, video meeting, speaking options and sharing teaching materials, especially when it occurs during the pandemic. My students prefer to communicate within the Moodle platform. I will continue to use Moodle even after the pandemic is over because I believe offline learning and e-learning can be used parallelly." Whereas prof. T. Wieczorek, head of the Department of Industrial Computer Science, together with his co-workers says that: "The lack of direct contact with students makes certain issues difficult to carry out, especially those during which the student should independently demonstrate their skills or knowledge. An important issue is also to assess the ability of individual students to use not only bibliographic sources or various teaching materials (provided to them or independently found) and to distinguish these activities from the help of colleagues in completing tests, solving problems (tasks), obtaining credits or passing exams online. During synchronous direct learning, an academic teacher observes the work of students and its results, their independence or the ability to work in a group, including interactions: teacher-student or student-student, being able to assess them more objectively and be sure that a specific student is the author of the analyzed product of the action."

In general, the surveyed academic teachers believe that distance education does not give any of them as much satisfaction as face-to-face teaching, especially when students are not visible on the computer screen during a lecture, exercise or seminar because they turn off the vision or insert their own photo (icon), only simulating their presence. It also happens that the software owned by students does not allow academic teachers to interact with them. Teachers also lack eye contact with the audience. They also stressed that their online teaching time had become three times longer than that needed to conduct synchronized classes, and they had doubts as to whether both modes of education were equally effective. In the interviews, academic teachers considered the most effective classes conducted synchronously with students, during which many emerging problems could be solved immediately.

According to the surveyed SUT academic teachers, the biggest technical problems of distance education include: (a) the class of computers and software used by teachers and students; (b) internet connection stability; (c) its capacity.

In a categorized written interview, pedagogy students confirmed that they most often use the Moodle e-learning platform in their distance education, due to its

clear interface, allowing for correct and clear categorization of both types of classes and issues, tasks, meetings, discussion threads and other activities. They use Moodle to communicate seamlessly with each other, create multimedia presentations for distance learning, and use Moodle to submit their works for evaluation. They participate in lectures and seminars conducted using the Zoom video conference program. According to the respondents, the most important advantage of Zoom is the stability of their servers, so there are no problems with connecting to a large group of students, the bandwidth needed to send audio and video or the quality of data transferred, although it can also be determined by the varying stability of Internet connections owned by students.

According to the students, the websites and applications of the Moodle platform were well developed, and all modules, along with the necessary links, were launched on time. The students, like the academics, believe that distance learning takes them longer than synchronous learning, as well as obtaining credits and passing exams. The students complain that as a result of online and offline learning they receive large amounts of didactic materials from the lecturers that they should review, understand and add to the structures of their knowledge. This also applies to the need to read the manuals of new IT tools that they use every day in their distance studies. Handing such large information packages to the students was also related to the fact that the university's libraries were closed. During the realization of the course, individual students repeatedly interacted with academic teachers, which significantly increased their learning time, as well as the time devoted to them by teachers. In order to obtain credits in various subjects, the students had to send substantial files of structured information, the preparation of which took a long time and required a greater effort, due to the increased level of individual analysis of literature, found not only in student libraries, but most of all searched on the global network . Therefore, the students emphasized that in order to obtain credits or pass exams, their daily learning extended until late at night.

This situation also directly influenced the number and frequency of interactions between students in their group. Students emphasized that during synchronous learning they could contact each other more often and longer, while learning in a virtual group, due to the large amount of time devoted to the preparation of materials for assessment, social contacts were reduced to a minimum, but, as students emphasized, therefore more effective.

Distance education platform
at Hankuk University of Foreign Studies (Korea)

The Learning Management System (LMS) of Hankuk University of Foreign Studies (HUFS) is based on a program, which is called „e-class" (https://eclass.hufs. ac.kr/ilos/main_form.acl) and it was already prepared before the pandemic for students and lecturers to access from normal web browsers as well as application software for smart phones. But e-class system has been running as a supplementary instrument mostly for offline education and both lecturers and students have been interactively utilized e-class for conducting efficient offline classes.

However, since COVID 19 situation occurred in the beginning of this year, the enhancement of HUFS e-class system has been needed and become more import because the online classes have been asked to be conducted for the lecturers by the university after two weeks trial period in the first semester of this year in March. For online classes, HUFS fundamentally supports the usage of an online real-time conference program Webex under a contract with Cisco Co. Ltd. since the first semester and a user IDs for each lecturer of HUFS has provided under the contract. Also, HUFS has made G-Suite IDs to use Google Meet as an alternative for the lecturers to share teaching materials with students since e-class does not have enough server capacity for large data of teaching materials. With starting the second semester in September, the three latest virtual machine (VM) servers and memories for smooth service have been installed by the Information and Technology Support division of HUFS. A network management software has also been installed to monitor the current status of server usage and efficiently control the VM Servers. Last semester's final exam CPU usage rose to 91%. However, the CPU usage is significantly reduced to 7.0% now due to the New VM servers.

A video streaking system, which is called 'HUFS Cloud' Has also been launched from the second semester instead of the well-known YouTube or G-Suite. Through the HUFS Cloud system, lecturers can simply edit and make video lecture materials, and upload them to HUFS Cloud for video streaming. For lecturers, HUFS conducted the several on/offline training session for e-class, Webex and HUFS Clouds till August.

In order to increase the internet communications bandwidth from 1Gbps to 2.3 Gbps, routers for managing data flows, intrusion detection systems (IPS), firewalls, and L2 switches have been changed to handle 10Gps capacity for both HUFS campuses in Seoul and Yongin. For the convenience of students' taking classes by connecting to the wireless Internet at the campus, the WiFi access points (AP) have also been replaced and expanded to the latest version. One AP can now cope

up to 25 Webex users through WiFi connection comparing that the previous APs could not receive more than 10 Webex users.

According to the academics at HUFS, the most serious technical problems of distance learning include: (a) Internet bandwidth, (b) Internet stability on using Webex.

Opinions of academic teachers and students at Hankuk University of Foreign Studies on the open education during pandemic

As the COVID-19 situation has been prolonged, offline-centred education was converted to an on-tact and on-line education platform, and it is necessary to think about a new method of online education that has increased in proportion. In particular, with the development of digital technology, distance education has been diversified depending on devices and its effectiveness becomes extremely important.

The empirical studies were conducted in 7 colleges in Yongin Campus of HUFS. The number of interviews with academics was 56 and interviews with students was 123: Humanities (13,21); Economics & Business (5, 19), Interpretation & Translation (15, 34), Central & East European Studies (3, 15); International & Area Studies (6, 12); Natural Sciences (8,17); Engineering (6,5).

Some argue that distance education is not an emergency measure to endure the COVID-19 situation, but will become a big axis to lead the education field in the future. In this situation, the revitalization of distance education and the investigation into a new direction of university education are desperately needed.

The university students as purchasers of college education services have higher preference for untact methods using text messages or smartphone applications rather than in-person methods (c.f. P. Fidalgo, J. Tormann, 2020). On the other hand, academic teachers of the elderly who are relatively unfamiliar with untact culture or consumption patterns are not favourable to online classes. Of course, it is not possible to ignore that they are not accustomed to the program operation or are unfamiliar to distance education, but considering this as generation gap or skill level of digital devices is not helpful in constructing plan for changes in university education services in COVID 19 situation (S. Utam, I. Winarn, 2020).

Some academic teachers say that online education are complementary, not substitutes. The essence of Oxford-Cambridge university lectures is the questions of students, the answers of the lecturers, the critical acceptance and reasoning

of both sides, and the re-questioning. They believe that creativity which is the core factor of education can be cultivated through this process. Of course, due to the developing technology, discussion functions in online education platforms are installed but there is a gap that cannot be filled in relationship building between lecturers and students, which can be possible on offline education (cf. S. Shim, 2012).

It is known that the attention span of learners in offline class is maximum 15 to 20 minutes, but it is reduced to 5 to 10 minutes in online class. Many academic teachers say that there is the lack of interaction between lecturers and students in distance education and the lecturers do not expect feeling of tension or concentrativeness of students. (cf. Byeongho J., Byunghee L., Jongin J., 2015).

In a categorized written interview, the academic teachers say that they spend almost twice as much time preparing lecture online and mostly have difficulties in using Webex and e-class system because of lack of experience or system instability. Also, they found difficulties in evaluation of students by online examination. In particular, most of language exams need face-to-face test, however online evaluation system carries a burden to teachers in terms of fair evaluation. In general, academic teachers believe that distance classes do not give as much satisfaction as offline classes.

In a categorized written survey and interview, the students say that they do not have difficulties in using computer for distance learning on Webex, however some students who do not have notebook with built-in camera have to purchase webcam for their desktop computers. It means they had to pay extra for distance learning. In the opinion of students, they are not satisfied with distance learning comparing to synchronous learning. Firstly, it is not comfortable for them to communicate and interact with lecturers during the class. HUFS is representative and unique university for foreign language education in Korea which has 45 foreign languages majors including Arabic, Polish, Czech, China, Russian, Mongolian, Vietnamese, African language and etc. Especially, students feel dissatisfaction with distance language class because it needs verbal training session by teacher's guide and feedback but they feel difficulties to do this during distance class. Secondly, students consider that the lecture delivery impact on distance learning is much less than one on synchronous learning because of lack of interaction between lecturers and students. Thirdly, many of them have problems with Webex login because of server overload and this causes students' dissatisfaction with distance learning environment. And survey shows that students are unsatisfied with the teaching materials provided by teachers such as PPT slides or video materials.

In general, the academic teachers and students do not show their satisfaction in distance education based on Webex and e-class because of technical problem, quality of lecture and lack of interaction.

Conclusions

Summarizing the analysis of the empirical research conducted, mainly of a qualitative nature, including: content analysis, interviews with LAN administrators, academics and students at SUT and HUFS, as well as a survey conducted among HUFS students, it can be concluded that: (a) both students and academic teachers prefer synchronous, face-to-face education because of the possibility of more frequent interaction with teachers and with each other, a greater chance of understanding difficult content, the possibility of more frequent questions and answers from teachers or colleagues; then we deal with effective social learning; (b) the time devoted to the implementation of the rigors and preparation of course materials by students, as well as the time devoted by teachers to online classes is assessed by both groups of respondents as three times longer in the SUT and twice as long in the HUFS; both employees and students stressed their great fatigue at the end of the semester; (c) SUT staff have doubts about the evaluation of the works delivered by students concerning their authorship; (d) both students and employees felt more satisfied with conducting or participating in face-to-face classes than in e-learning, especially when it lasted the entire semester.

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