Remote Education during the COVID-19 Pandemic

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Abstract:

Purpose: The aim of the article is to define the role of remote education in the process of educating students, their course and adaptation to the conditions of Covid-19 pandemic.
Design/Methodology/Approach: The research was conducted by means of the diagnostic survey method, using the CSAQ (computerized self-administered questionnaire) technique in June 2020 on a randomly selected sample of 1533 students studying in Poland.
Findings: The obtained data was analyzed. The results of the analysis confirmed that the distance education implemented in 2020/2021 in the entire educational program was accepted in the situation of the Covid-19 pandemic by over one third of the respondents. Students must devote more time to it than in the traditional form, and there are also factors that hinder it. Also, more than a third of respondents are in favor of participation in perspective in all education and 60% in distance learning.
Practical Implications: The article shows that remote education is already a regular type of education. The Covid-19 pandemic meant that practically the entire program for students at that time was implemented in the remote formula. Its implementation required both legal and organizational solutions, and all the competences were granted. Thus, it has been proved that remote education is widely used in the education of students in lifelong learning. Its share in the education process will be significant. It requires competences, but also significantly influences the shaping of competences, while it requires systematic monitoring.
Originality/value: The article shows that in the process of education in an emergency, which is probably a pandemic, it is justified to use the classical concept of education, but also remote education. This training should be present in the normal learning process. However, in emergency situations, e.g., during the pandemic, its contribution is significant, or even comprehensive, and may last for a considerable period. Such a situation requires new competences, which influences the shaping of new ones required for social functioning during the pandemic.

Keywords: Education, distance learning, COVID-19 pandemic, students.

JEL classification: M31, L31.
Paper Type: Research study.

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1. Introduction

The presented problem requires a clear timeline. It is the second half of 2020, the world, Europe and Poland are in the process of organizing their lives in the situation of the ongoing COVID-19 pandemic. As Maciej Tanaś writes in his review of the book *Education in the times of the COVID-19 pandemic. With a distance about what we are doing today as teachers*, (Pyżalski, 2020), "Planet Earth has been imprisoned in the Escape Room" (Tanaś in Pyżalski, 2020). The pandemic has had many consequences on the foundations of the most important principles of society. Numerous politicians, as well as influential media, attempt to present this situation as a specific state of disease, after which everything will return to the old rules. This aims to reduce social anxiety, but it often results from insufficient imagination, especially of politicians, but also of a great number of people who decide about the functioning of education and social communication. The present-day situation is not a temporary illness, but is the beginning of a new period that will certainly last for several years and will lead to the formation of new rules of the social order. Over time, the increasing number of people will become aware of this state, often in a painful way, stating that they have not been prepared for these new rules of order (http://www.diagnoza.com/pliki/raporty/Diagnoza_raport_2009.pdf).

The analysis of the course of these social changes, which in the past, in a global manner and against the will of societies, caused a slow disintegration of old social orders shows that pandemics were often such factors, like great world wars or in earlier times organized war expeditions lasting many years (crusades). Today their importance is multiplied by globalization. However, today it is impossible not to observe the importance of information technologies (Andrzejewska and Bednarek, 2017). As a medium with unprecedented attributes, filling the global space of education and social communication (Aouil, 2008). The data show that during the pandemic, more than a billion students in 100 countries study via the Internet (https://www.rp.pl/Biznes/304249968-Edukacja-w-czasach-pandemii-Wszyst-jestesmy-ucznymi.html).

2. Research Methods

If we agree with such a diagnosis, the question arises, how the world will be organized after such a change, and in it the educational process? There is no solid answer to this question yet, we are dealing with a process of change that is just beginning and the result of which is unknown. This does not mean, however, that we cannot say anything yet. Some aspects of the future are already visible. They certainly include the development of digitization of many such aspects of social life, including education. Such a statement does not raise any objections, but is also only a statement of the observable state of affairs. It is definitely not sufficient to build forecasts for the future on this basis, but to ask whether it is only about the method of presenting the stated facts, or about the basis for building a new type of social relations? More precisely - will digitization through education lead to the emergence of a new form of world

vision? Will it be built into the human world of values and to what extent? As long as it becomes the basis for formulating human motivations based on such digital images of the future? To what extent was it accelerated by the Covid-19 pandemic?

There are numerous questions of similar nature. However, it has to be reduced to another, how has the Covid-19 pandemic affected the educational process in a world of dominant digital imagery in a somewhat unpredictable reality?

In order to obtain an answer, a questionnaire study was conducted (Babbie, 2001) in June 2020. 1533 participants participated in the study. All respondents came from the territory of Poland and were students (https://dziennikzachodni.pl/cyfrowa-akademia-wsb/ar/c15-15515071). The quantified results of the research were analyzed.

3. A Pandemic Announcing the Beginning of New Teaching

The pandemic announced the beginning of a new era of social relations and our somewhat helpless attempts to build a new style of didactics. It showed that modern education is becoming increasingly dependent on information technologies called media (Garito, 2004). After all, the initial decisions of numerous schools or universities to quickly move to the forms of distance learning resulted only from the need to protect against a virus spreading then fear, because it was little known. In these initial didactic decisions there was no thought of shaping youth to live in a new, yet unknown world. The logic of defense against the plague (known since antiquity - mainly through isolation) fueled the increased number of new normative regulations. And the reflection about the future came only later.

In this situation, the reaction of the Rectors of numerous universities to protect the academic community using the experience and known technical possibilities was quite understandable. The school participant expects support from the school (UNICEF, 2020). However, when the threat situation continued and it became obvious that the pandemic would last much longer than it initially seemed, people started to think more thoroughly about the long-term effects of the change that this virus will cause, which resulted in the reflection. After the summer holidays in 2020, other aspects of distance learning were taken into account when planning classes for the 2020/2021 academic year. It became obvious that it is not only a technical procedure protecting against infections resulting from direct contact in a group, but also a didactic method that opens up new possibilities, a hypernew social phenomenon, an active factor regulating human behavior (Wenta, 2007).

As mentioned above, the process of the fairly widespread massisation of distance learning started in spring 2020 in a rather chaotic manner, it was simply a manner of responding to a significant pandemic threat, but students felt they were receiving support (Acedo, 2008). Today it can be said that this is how the much more important process of transformation of the didactics of higher education was launched, and education is inclusive (Muanović and Novak, 1998).

The processes of change only rarely proceed in a systematic manner, and it is increasingly common that it is oriented chaotically during its duration and its ultimate goal is also most often redefined during the change. Even so-called planned processes become deformed as their driving forces sometimes reveal themselves automatically. But it can be assumed that the sooner the awareness of even a generalized goal occurs, the more predictable are the individual stages of change affecting general human development (WHO, 2020).

4. Empirical Results - Distance Learning in a Pandemic – Conditions in Distance Learning

A certain complication appears while focusing the discussion on a fairly specific phenomenon, which is the education of students during the pandemic. This formulation is very capacious. The problem becomes even more complicated when the analysis of teaching conducted in a remote or hybrid system is taken into consideration.

This leads to indicating the multiplicity of methods used in distance learning, and even more so in hybrid learning. It seems that the essence of the process of change that is currently occurring is that in its course methods appear, sometimes completely unknown before, which are the result of creativity of both teachers and students. In such a situation, the great flexibility of the methods and effects of their application can be assumed.

While it is extremely creative in the didactic process itself, it generates some problems with shaping the developed competences into a certain system suitable for objectified assessment. In the course of the research, students were asked which remote education tools were used by students in the first period of the Covid -19 pandemic, as shown in Figure 1.

The data analysis shows that in the first initial period of the pandemic, the summer semester of 2020, students used other remote education tools (educational platforms), such as Zoom 91.55%, ClickMeeting 88.45%, Microsoft Temas 29.45%, Skayp 15.38%, Google Hangouts 6.53%, Webox 1.45%, other 5.87%. The overwhelming majority of 82% emphasized that the University switched the teaching process from the traditional model to the remote education model within just three weeks. Until February 2020, 90% of the Moodle platform was mainly used at the University. Students were also asked to rate the students' remote work itself, as illustrated by the data in Figure 2.

The data analysis clearly shows that students agreed that the formula of classes in a remote form is more convenient for them - 27.88%, at a similar level they indicated that they must devote much more time to them - 27.56%, and even strongly agree - 29.17%. Almost a quarter of 24.98% agree that they see more benefits than
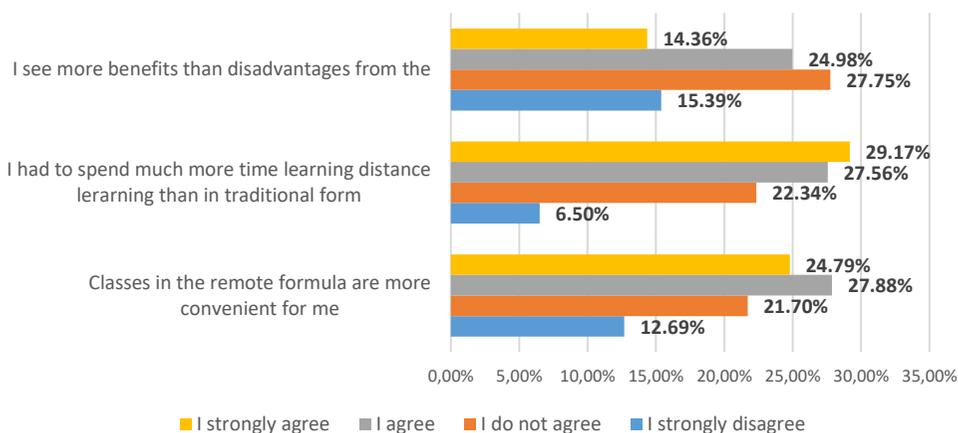
disadvantages of implementing distance learning. The indications of 'I disagree,' in two categories exceeded over a quarter, and in one category one fifth.

Figure 1. *Remote education tools used*
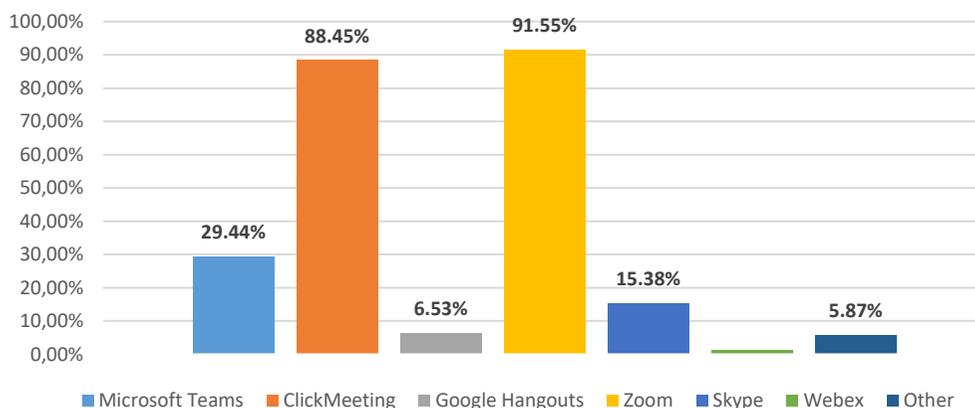
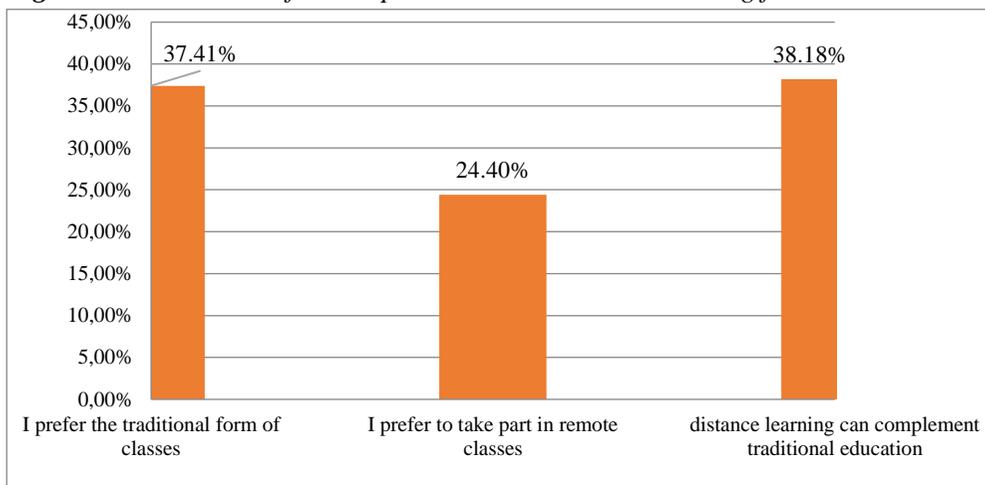Source: Own study.

Figure 2. *Assessment of remote work*

Source: Own study.

Thus,21.70% od respondents indicated that they did not agree that remote classes are more convenient for them. At a similar level, they indicated that they do not agree with the statement that they have to spend much more time on them - 22.34%. Almost one-third, i.e., 27.75% of respondents indicated that they did not agree that they saw more benefits than disadvantages from the implementation of distance learning, and 15.39% strongly disagreed that distance learning is more convenient for me. The remaining details are illustrated in the chart. The students also expressed their attitude to the remote learning formula, Figure 3.

In the first place, students indicated that remote classes may complement traditional education – 38.18%. The traditional form of classes was indicated by 37.41% of the respondents, while remote classes by 24.40% as the basic form of education. The evaluation of one of the conducted remote teaching methods is illustrated by the data in Figure 4. On the basis of one of the selected methods of the Webinar, the respondents assessed its use to conduct remote classes. In terms of attractiveness, this method was rated as high by 30.76%, average 30.86%, definitely high 11.82%, and low 12.21%. It is worth pointing out that the overall rating (high, medium, definitely high) gives a high level of 73.44%. Based on the data analysis, the summary indications in the categories (high, medium, definitely high) in all the surveyed categories, namely the general level of satisfaction, effectiveness, indicated attractiveness, interaction with teachers, general quality of classes conducted in this form, and skill, teachers gives the level of above 70.00%, which is good. The remaining details are illustrated in the Figure.

Figure 3. *The attitude of the respondents to the remote learning formula*
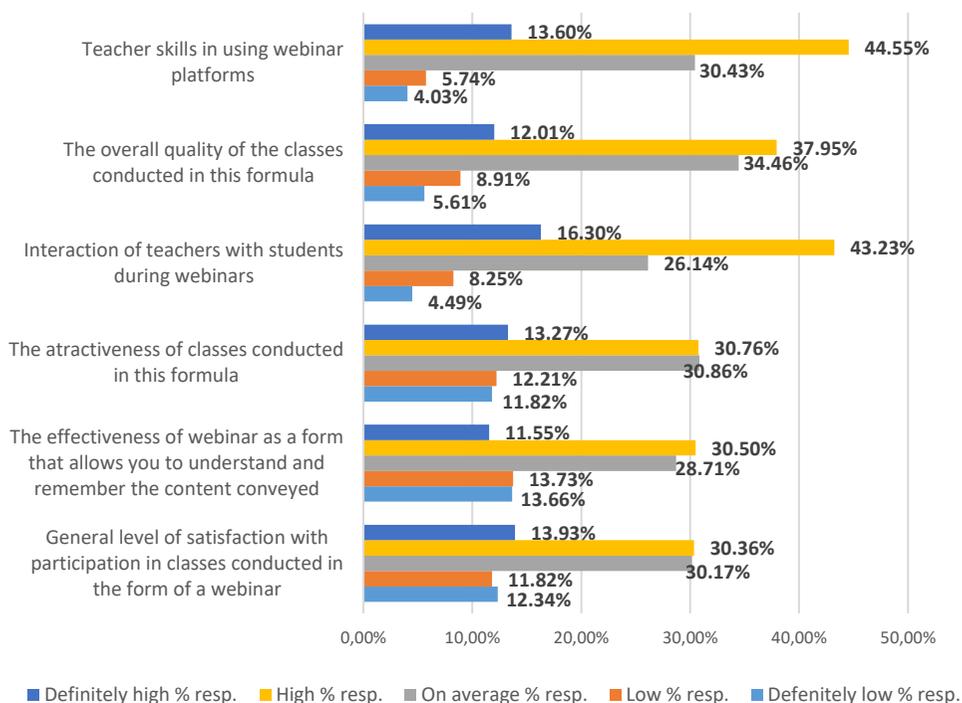

Source: Own study.

The crucial question was related to assessing particular aspects of the organization of distance learning. Data on support for students during the organization and course of the first set of learning is shown in Figure 5. Undoubtedly, an important question referred to the support that students received during the organization and course of the entire first period of remote learning. The respondents in all categories indicated the high support, within and above 30%:

- Providing information on the organization of classes during the pandemic by universities (on their website).
- Communication with the employees of the dean's office during the pandemic.
- Communication with teachers during remote education (e.g., contact by e-mail or via other tools, teacher's availability).

‒ Possibility to participate in online lectures in the form of webinars.
‒ IT support for students, e.g. information on the use of a given software, assistance in using the e-learning platform;organization of a credit and organizational examination session.
‒ Participation in lectures using the webinar method was highly rated 39,92%, communication with dean's office employees 34,68%, organization of sessions 32,13%. Communication with teachers 33,61% and information provided by the university on the website 32,90%, were indicated as average at a similar level.
‒ All the above-mentioned categories were rated as definitely high, around 15%. The mean average of indications was definitely low for all categories is 8,46%. The remaining detailed data is illustrated in the chart.

Figure 4. *Evaluation of the conducted methods of teaching in a remote form*

Source: Own study.

Students also indicated barriers to remote education, which were varied, as shown in Figure 6. Despite the fact that it was a form of distance learning, the students mentioned the lack of contact with the teacher in the first place 50,29%. It was followed by difficulties in focusing during classes due to the presence of other people at home – 48,83% and too little time due to other duties 46,05%. Over one third of the respondents, i.e. 33,04% indicated difficulties in focusing during classes due to their

form. One third of the respondents indicated that the difficulty was the low quality of the Internet connection. 4,24% indicated that the difficulty was not enough.

**Figure 5.** *Support for students during the organization and course of the first period of set earning*


Organization of the session and pass exam — 13.72%, 27.11%, 32.13%, 17.43%

IT support for students, e.g. information on the use of a given software, assistance in using the e-… — 12.62%, 26.14%, 28,31%, 12.92%

Opportunity to participate in online lectures in the form of webinars — 7.02%, 24.86%, 39.92%, 18.22%

Communication with teachers during remote education (e.g. contact by e-mail or through other… — 14.75%, 33.61%, 29.56%, 15.21%

Communication with the dean's office staff during a pandemic — 11.91%, 22.54%, 34.68%, 17.56%

Providing information on the organization of classes during a pandemic by universities (on the website) — 15.26%, 32.90%, 29,81%, 14.14%

Legend: ▮ Low % resp. ▮ On overage % resp. ▮ Hight % resp. ▮ Definitely high % resp.

Source: *Own study.*

Figure 6. *Factors hindering remote eduvation*

no computer — 4.24%
other — 14.33%
no presence of other students — 15.50%
low quality internet connection at home — 30.41%
dificulty in focusing due to the form classes — 33.04%
too little time due to proffesional of other duties — 46.05%
difficulty focusing during classes due to the presence of other people at home — 48.83%
no direct contact with the teacher — 50.29%
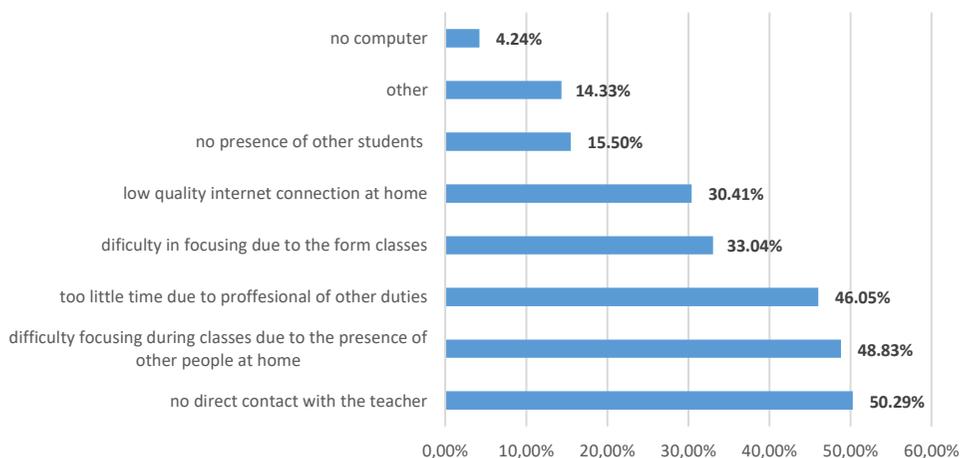
Source: *Own study.*

The respondents were also asked about their attitude to remote classes in the long term, which is presented in Figure 7.

Figure 7. *Attitude of students to remote classes in perspective*
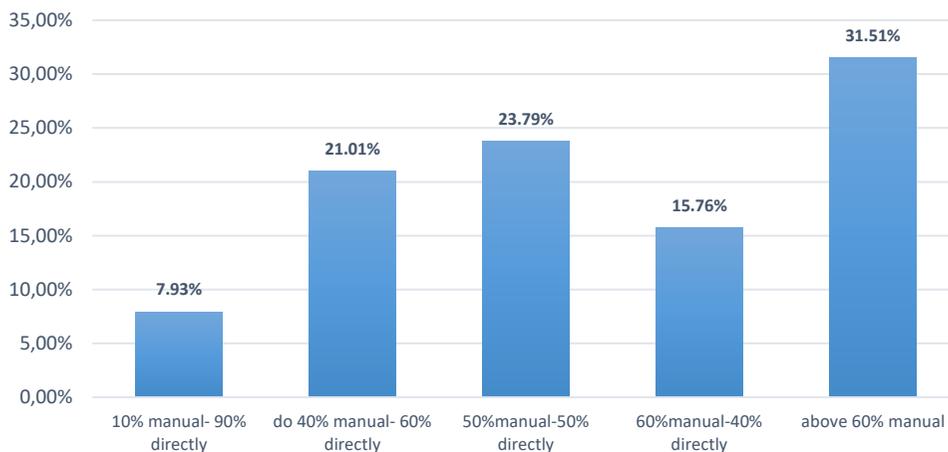
Source: Own study.

The data analysis shows that the largest number of students, ie 31,51%, indicated the participation of remote education – in the perspective of 60%. Traditionally and remotely 50% – 23.79% of respondents each. 40% remotely and 60% traditionally indicated 21,01% of the respondents. 60% remotely and 40% traditionally indicated 15,76% of students. At least 7,93% indicated 10% remotely and 90% traditionally.

The difficulty in this analysis is due to the occurrence of numerous determinants of this process. The first obvious condition that does not need to be justified pertains to the essence of the field of teaching. When speaking of teaching mathematics, one cannot make simple comparisons to teaching painting, but when speaking of teaching history, we do not make comparisons to teaching medicine. While it is obvious that the substantive specificity of various fields of knowledge or practical activity requires didactics that takes into account the essence of a given field of knowledge or practical activity, it does not mean that certain generalizations are not possible. Because in the end, we aim to give our students competences resulting from their ability to navigate in a new world, which will also be defined through appropriately selected digital data.

The second type of conditions are socio-cultural. Each student comes to the university with their own social and cultural baggage. The way of understanding the content of teaching always depends on this own resource; to put it simply, on what the student comes to the university with when starting education. While face to face, conducted in constant contact with the lecturer, has long-recognized methods of recognizing these conditions and methods for possible supplementing the visible gaps in this basic student's own resource, distance learning has not yet developed such correction methods. This task lies ahead and will certainly be solved in the future. But the distance learning implementation process at this stage of development does not yet have such means.

Finally, the third important condition is economic. The efficient functioning of the distance learning system generates costs both for the sender and the students. Costs for the sender are their investment, although they can even be quite significant. The costs on the side of the student result from high-quality Internet access and a computer. Obviously, it can be assumed that a computer is available in many homes today, but a computer as a tool for participation in remote learning should be available (at least for a considerable period of time) only to the student, because it cannot be assumed that in more advanced systems this computer is used only during the didactic period. It is increasingly becoming an indispensable tool for the student's own work.

A serious problem arises here, even if it may seem easy enough to solve. For two, pedagogical and ethical reasons, the lack of access to the technical possibilities of full participation in remote learning, which is equally good for all students, will always be a significant barrier to its development. The pedagogical reason is obvious, although not everyone wants to notice it. Here, economic opportunity is a factor that determines the effectiveness of such education. Without an effective resolution of this dilemma, it is difficult to seriously debate on how e-learning improves learners' competences and prepares them to understand the digital world in the future. Subsequently a different question arises – does it prepare potentially all students or only the lucky ones who can afford it? The answer to this question must not be avoided in the distance learning debate. One should rather look for effective solutions (e.g. financial support or lending equipment by universities to students who, for economic reasons, do not have it), and there are many possible solutions here.

However, ethical reasons cannot be ignored, either. Lack of access to opportunities to fully participate in distance learning raises several important questions, one of which seems to be essential. Is it possible to use the same schema (or the same scale) to evaluate the entire didactic process, since it is known that among the audience there are those who, through no fault of their own, cannot fully participate in it? This is where moral dilemmas arise and need to be discussed now.

We are talking about a social process in which remote learning becomes an opportunity to improve students' competences in the perspective of their functioning in a new (post–pandemic) world, in the context of lifelong education (Dollhausen and Schrader, 2015). The change, which involves introducing and then controlling the operation of distance learning, requires constant monitoring of its course. As in any social change of a multifactorial nature, factors modifying the course of change may occur at any time. In the event of a change related to the organization of distance learning caused by a pandemic, i.e., an external stimulus of a biological nature, any new form of a pandemic (e.g., a virus mutation) may significantly modify our previous assumptions.

5. Discussion

The intellectually most difficult link in planning new didactics after the Covid 19 pandemic aimed at clearly increasing the competences of students to actively act in new social systems that will form after the beginning of the change is quite a brutal departure from the factor of the influence of personal relationships: master – student, teacher – student, guide – student to prepare for the remotely supported individual work of the individual learner or student. This is a difficult element due to the unknown effects of development individualization as a result of distance learning.

However, it is important for the student to feel that the teacher wants and knows how to create a sense of community (York, 2004; Dacko-Pikiewicz and Walancik, 2016), which is not easy in the case of distance education. The following questions arise: Will new threats emerge? Will there not be a system creating new development barriers? Will there not be new factors that promote some and constitute insurmountable barriers for others? (Milic, 2020).

These and similar questions will multiply as we get used to the functioning of the education system based on remote or hybrid learning. Here we are faced with numerous challenges forcing, on the one hand, continuous monitoring of the functioning of new didactic solutions, and therefore continuous research and evaluation of the system being created, and on the other, our creative approach to technical solutions. It is certain that the use of remote education, e-learning courses to acquire knowledge, skills and social competences is becoming increasingly common (Chang, 2016; Aparicio *et al.,* 2016; Stuss *et al.,* 2019).

Therefore, to remain at the stage of development of the distance learning measures themselves (Swida and Ziaeian, 2021), are we aware that we are preparing students to live and work in a differently organized world, with a significant and not fully recognized impact of digitization on building the image of the world, we will develop new perhaps an experimental general approach to distance learning (or rather hybrid) integrated with new ways of teaching at a higher level? It is worth remembering that the excessive burden of remote education at the computer must be balanced by physical activity for mental health (Triguero-Mas *et al.,* 2015).

In other words – will we treat distance learning only as a specific variant of the didactic method or will we consider it as one of the elements of equipping students with new competences allowing them to fulfill themselves in a new social order, which, as we indicated, will probably be the order in which the world willbe explored, for example thanks to the knowledge of the digitally known world, in the world of global culture, technique and technology (Mandal, 2006; Walancik-Ryba, 2020).

We do not want to underestimate the dangers of such a vision of the world. But does such a change necessarily come at the expense of eliminating the importance of culture in shaping the vision of the world? This remains openly debated as well.

Therefore, while it is a truism to recommend systematic monitoring of this process, the question about the details of the assumptions of this monitoring cannot be reduced to one simple answer.

The first recommendation is to build, from the very beginning of the controlled change, mechanisms for modifying this process. There are basically two main ways to deal with such social change. The first one involves dividing the process into numerous predefined stages and making an assessment after each stage, along with previously prepared eventual modification models. Subsequently, we are substantively prepared for the modification itself. The second one assumes creating, from the very beginning of the change, a reserve of modification possibilities to be used whenever necessary. These are only patterns and each time they require building specific action plans adapted to specific realities.

It is obvious that the basic element here is the systematic discernment of students' opinions about the functioning of the system. Remote learning gives a better possibility to supervise the training organization by the organizer (Morbitzer and Walancik, 2018). The survey has a double function in this situation, not always realized by the organizers of didactics. It is obvious that the survey gives us some knowledge about what the respondents thinks and how they evaluate the teaching process. But the second function is to make students aware that the very process of introducing distance learning is systematically controlled and that universities want this system to be improved and adapted to the needs of the students. In the era of broken direct relations between the university and the student, this aspect creates a new type of source of mutual trust and reduces threats (Andrzejewska, 2014). For this reason, the regular survey questionnaire should be constructed in such a way that it also fulfills the latter function.

The subsequent stage of process monitoring should be the diagnosis of the evolution of students' motivation to fully and creatively use the opportunities created by remote learning. This is a much more difficult task than just polling people's opinion. In this respect, there is a lot of room for analysts of this process to prove themselves. Certainly, it is necessary to build a few, if not a dozen or so methods of such research, adapted to the field of study and to possible expected difficulties in the implementation of distance learning itself. Also, the methods of such research cannot be limited to questionnaire surveys, although, of course, this method of research should not be eliminated in advance.

Diagnosing the emergence of new motivations among students must be systematic enough to determine in the course of the change process whether these motivations are temporary, adaptive or are already the beginning of the consolidation of the system in which the student, focused on functioning in the new reality, feels the need to create the new forms of relations with the world. It is easy to formulate such a recommendation, and it is definitely more difficult to make such a diagnosis. Hence, on the part of universities, it is necessary to focus on constant necessary system

adjustments, sometimes experimental modifications. Certainly, it is impossible to build a single model for making such diagnoses. This requires the creation of a team of people at universities focused on working on the construction of the entire system and its permanent diagnosis and support (UNICEF, 2020).

During distance education, the teacher should provide support in three cognitive, emotional and systemic areas (Tait, 2000). It can be assumed without risk of error that some students will discover an interest in a new reality, and some will be guided by fears of such a novelty. It is important to control the time spent in front of a colleague (education, interests, work), maintain digital hygiene, so that there is no addiction to the computer or the Internet. (Bowman *et al.,* 2010; Herman, 2010; Sparrow, 2011; Spitzer, 2016).

With the excessive use of the computer and the Internet, tensions may arise related to the inability of the mind to process information, and the lack of sufficient and increasing competences, exposing us to a high level of techonstress (Brod, 1984; Ragu-Nathan *et al.,* 2008). In such a situation, there is a need to propose a support system for those who experience anxiety in such a significant way that it may block their activity. It would not be an extraordinary situation, but in a sense the norm at the time of introducing a significant social change (https://www.researchgate.net/publication/220079808_The_Consequences_of_Tech nostress_for_End_Users_in_Organizations_Conceptual_Development_and_Empiric al_Validation).

The full success of such a change always requires support for those who, whether due to personality or certain features of their psyche, may become blocked and not continue the process of change (Yorke, 2004). Certainly, the evaluation of this process will be possible only after several years, because the essence of this process is that we only know the outlines of the post-vid organization of society. Today we can only forecast certain elements, but at the same time expand any reaction programs modifying the programs of our activities, and use technologies supporting communication models (Lazor *et al.,* 2012), as well as help to mitigate the effects of the COVID-19 pandemic.

Remote education in the wake of the COVID-19 pandemic began unexpectedly, suddenly, overnight. It has been present in kindergartens, schools, and universities. It filled the entire educational system and revolutionized it. This forced the organizers of the educational system to organize remote education. In a very short time, this meant that teachers had to acquire digital competences to be able to teach. Probably, remote education will remain a permanent form of education

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