Distance, Lecture Room or Hybrid? - Or the Shape of Future Education at Universities in View of Pedagogy Students

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Abstract: The paper addresses the important subject of the shape and form of future education at universities in pandemic conditions. The objective of the research with the use of action methods and Edward de Bono's technique of six thinking hats was to learn about the attitude and opinions of the participants of such teaching (students of pedagogy) after a year's experience of distance education, but also to inspire the respondents to look for innovative and non-standard solutions to improve their studies in the following years. The paper presents their perception of the educational reality in which they had to participate, taking into account their knowledge about the pandemic, emotions accompanying them at this difficult time, pessimistic and optimistic aspects of the situation. It also presents their ideas which could support, replace, or improve the existing forms of e-learning or safe studying in pandemic conditions. The findings of this research clearly demonstrated that students miss direct contact with other people. By "putting on" successive imaginary hats, the participants externalized the needs, wishes, feelings, emotions, and expectations of young people towards education decision-makers. They also provided a clear answer that they wish to return to the university, meet with their peers and lecturers, although at the same time they do not believe it is necessary to attend all courses in a lecture room. In their opinion, teaching in the following years should follow a hybrid model. This paper presents their statements, which may become an inspiration for many higher education decision-makers.

Keywords: *distance teaching, universities, students' views.*

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1. Introduction

The Covid-19 epidemic has now been continuing for almost a year and a half and has fundamentally changed the life of modern man. The speed of the virus spreading to all continents has left the public unprepared to cope with different types of constraints (Silistraru et al., 2021). Therefore, a need arose to seek, as quickly as possible, the best possible methods of adapting to the existing situation. As the cases appeared all over the world, dealing with the virus and striving to reduce the number of the sick and deaths became a global problem. Today, we already know that the changes brought about by the pandemic affect all dimensions of human life, imprinting their mark not only on professional work, but primarily on the daily activities of the individual in social life. One such dimension, particularly affected by COVID-19, is education. To organise it under pandemic conditions at various levels was a challenge not only for governments, but above all for teachers, pupils, students, and parents. With decisions to close school facilities, it became necessary to look for alternative forms of education, mainly ones that could be provided by means of modern information and communication technologies. The education authorities were very quick to take action by organising lessons and courses, and access to various knowledge resources through the Internet, television, online broadcasting, digital libraries, various types of e-learning platforms, etc. (Bond et al., 2021; Cellary, 2020; Elfirdoussi et al., 2020).

2. Picture of distance teaching during the COVID-19 pandemic

In 2005, Krzysztof Satoła as cited by Janus (2020) wrote about distance teaching as follows: "It is a method that allows students to learn at the time of their choosing and it only proves effective if they are willing and able to acquire knowledge on their own". His somewhat prophetic words came true with the outbreak of the pandemic and the total abandonment of lecture room teaching.

Distance education has turned out to be a safe way to continue learning under epidemic constraints. Although this form of working with pupils and students was not unfamiliar to modern educational institutions, it proved to be a tactical challenge to ensure teaching continuity and to conduct all activities online. A novelty of sorts was that distance teaching became the only possible method of instruction and not, as before, a supplement to lecture room education. The ratio of lecture room teaching to distance teaching was reversed. Due to the need for an immediate transition to distance education, little time was available for the informed selection of

teaching applications, a profound exploration of the possibilities these applications offer for teachers and learners, development of appropriate instructional materials (for teachers and students), creation of effective online teaching methods, monitoring of progress, etc. As a result, all top-down decisions and the solutions implemented in their wake amounted to conducting activities remotely at specific times and in accordance with a pre-planned schedule, so that distance teaching would correspond as closely as possible to traditional university education. Soon, it became apparent that in many cases this was not an achievable goal, both for lecturers and students. Therefore, a need arose to adapt the education process to the particularities of majors, to look for, adopt and create solutions adequate to the needs at hand. This, in turn, challenged the lecturers to master, as quickly as possible, various technical and IT skills, which they had not had much contact with before, and the students to navigate on a regular basis between applications and platforms. These challenges made it clear that there is a demand for solutions that help reconcile the different needs, taking into account many aspects that were not considered at the time of the transition to distance teaching. They also showed that what is indispensable is a great deal of flexibility and autonomy of universities, which, having recognised the needs of their lecturers and students, will be able to adapt the educational model to the actual conditions, optimise the use of their internal resources, improve the adopted facilitations and solutions, work out good practices concerning the tools and methods employed in the future (Bond et al., 2021; Mishra et al., 2020; Prynne, 2021).

The situation where distance teaching has become the prevalent or even the only form of education has now lasted for several months, but there is still a lack of scientific work on the effectiveness of this teaching form. Instead, more and more research has started to emerge on the students' and lecturers' opinions on distance education. Surveys carried out in the second half of 2020 and in the first half of 2021 by researchers from various European centres showed that:

- over half of the students appreciate most the lectures, practical courses, seminars, or consultations held in a synchronous manner;

- the students highly appreciate the direct (albeit virtual) contact with the lecturer (rather than materials or recordings sent to them) and fixed timetables;

- particularly praised forms of work are (in addition to courses delivered on platforms such as MS Teams, Skype, Discord or Zoom) individual or group work sheets, video materials, text materials and videoconferences;

- students and lecturers experience a considerably greater workload and size of tasks to be completed on their own than prior to the pandemic;
- people with various dysfunctions (e.g. dyslexia) experience incomparably greater difficulties;
- there are backlogs and deficiencies in digitisation of universities;
- not all distance teaching participants have appropriate equipment and access to fast Internet, there are instances where both the lecturers and students are "disconnected" from the network during the course, or the connection quality is poor (which may also contribute to the inability to complete the assigned tasks in the prescribed time);
- many lecturers lack soft skills and an ability to establish relationships using a computer or other communication device, their lectures are reduced to a dry and monotonous transmission of information and they do not even attempt to find a way to interact with the listeners;
- there is no suitable method of evaluating the progress and knowledge of students, giving credits and holding exams (although it is true that some platforms offer the possibility of various on-line tests or exams, the students are not prevented from using their own materials or online resources during the credit sessions or examinations – which is actually an infringement);
- the lecturers often do not receive feedback on whether all the content delivered during the course is understandable, and in general whether anyone on the other side of the computer is actually listening to their lecture (it is a common practice that in order not to overload the network, all listeners have their microphones and cameras turned off, so the lecturer does not see their reactions);
- many students do not have the conditions for such learning at home (e.g. because of living in one room with roommates, or with siblings; and participation in the activities at the same time by all the students is sometimes difficult, there are difficulties in staying focused, responding to possible questions asked by the lecturers, etc.);
- the students often do not have access to many of the textbooks or recommended literature as the libraries are closed (if the books required by the lecturers are not available in digital version, the students expect the lecturer to provide them with scans of the recommended literature, so that they can prepare for the course, which in turn causes additional and fairly substantial workload for the academic staff);
- the lecturers working in artistic and medical universities, and those where many lectures are based on showing or demonstrating, encounter particular difficulties (Mazur, 2021; Prynne, 2021).

In addition to the aforementioned problems associated with distance education, the psychological and health effects of such teaching must be mentioned (Prynne, 2021). The research carried out by the University of Warsaw clearly shows that the majority of students do not cope very well with the forced social isolation, the lack of regular contact with their peers, the impossibility of direct conversation, discussion, or simply "being" with another person. The obvious consequences of the isolation include major depressive symptoms in almost half of the respondents, increased anxiety consisting in permanent fear or excessive worry (62% of the respondents), nervous breakdowns and mental crises, strongly felt sadness or loneliness (Mazur, 2021).

In the situation at hand, it is the universities that should become, for both the lecturers and the students, a space in which at least a substitute for reality and normality is somehow established, a space in which all interested parties are offered understanding, forbearance, and openness, a space in which social relations disrupted by the pandemic and limited interpersonal contacts are dealt with.

Distance education, introduced due to the risks related to the pandemic, has almost completely replaced on-site teaching. From one day to the next, education had to switch to a well-known but not widely used e-learning. It was thought that this would be particularly welcomed by students, who are perfectly familiar with the latest technologies, but it turned out that it was not an entirely desirable, optimal, or reliable solution. Students repeatedly voiced their dissatisfaction and frustration during the courses. These voices became the basis for undertaking research on students' opinions concerning the vision of the shape of further education in the years to come in the pandemic conditions, as it was known that they would have to function in such conditions in the nearest future.

3. Research method

Organising and providing education of the highest possible quality for all those interested in the improvement of their knowledge, creating the conducive atmosphere and conditions for relatively normal functioning represents a challenge, but also a difficult issue for education decision-makers at all levels. Simple solutions that could be applied under normal conditions usually fail under the present circumstances and new, nonstandard solutions have to be explored. In a previously unknown situation, trying to think of a solution using a ready-made scheme proves to be ineffective. Therefore, perhaps a perfect solution to this serious, no matter how one looks at it, problem could be found if education

administrators approached it by "triggering" some nonstandard solutions, or, to put it differently, if they tapped into the ideas of people often not directly involved in education management, but who are part of it, those who can think laterally.

Students form a vast group of people who can offer interesting observations on what education looks like and what they think it should look like under pandemic conditions. They are direct participants of the teaching process, they personally take part in all actions taken under the current conditions. They are also, so to speak, testers of new solutions forced by the pandemic. Learning about their opinions on feelings related to remote learning, but also inspiring them to search for new and better solutions became the aim of the research. To get to know their opinions, the activation research method, also known as the action research method, was used. As P. Reason and H. Bradbury (2006) write, "action research is a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview (...). It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of individual persons and their communities" (Reason & Bradbury, 2006).

The action method allows to obtain relative knowledge and the insight may serve some practical purpose. In activation research, the respondents are treated as partners of the researcher. An enormous value of this research is the direct participation of the respondents in defining and solving problems from their own point of view. Moreover, they are even granted the right to influence the research process, e.g. by indicating new research areas. In activation research, the research process co-occurs, accompanies social phenomena that are characterised by their own internal logic, and consequently may be subject to constant alterations, depending on the needs. The objective of action research is to modify the existing educational reality (in this case, the shape of education in pandemic conditions), to improve it, an evaluation leading to the modification of previous activities and seeking allies of the initiated change, needed e.g. to promote a particular idea (Czerepaniak-Walczak, 2010; Dudkiewicz, 2011; Góral et al., 2019; Smith, 1996).

3.1. Research technique - Edward de Bono's six thinking hats

In order to explore students' feelings and attitudes towards distance education, Edward de Bono's six thinking hats technique was used, based on lateral thinking. Lateral thinking is the ability to create apparently non-

existent links, the ability to look at things from different sides, but also to look for alternative solutions. By thinking laterally, we are able to look at a situation from a different perspective, see new opportunities, rephrase the problem, which gives us a good chance to solve it with new methods. Lateral thinking also means readiness to abandon rigidity in perceiving and understanding the world, but also to consciously refuse to use ready solutions in favour of finding more optimal ones. According to De Bono, only few individuals have the inborn ability to apply this kind of thinking in practice, but everyone is able to acquire it by proper training. In the Oxford Dictionary, the term "lateral thinking" is explained as "solving problems in a workaround and creative way, usually by looking at them in a new and unusual light" (Fudala, 2013).

Lateral thinking lies at the very core of Edward de Bono's problem-solving technique called the six thinking hats. This technique makes it possible to artificially and temporarily adopt a particular position on a specific issue – and adopting such a position is the main feature of this technique – and to express one's own feelings, observations and opinions without any emotional connection with one's own reasons. The technique of six thinking hats is based on differentiating six different styles of thinking in the process of creative problem solving. In order to make it easier to remember and use these styles, the author assigned each of them a hat in the corresponding colour: white, green, yellow, black, red, and blue. Each person can have their one preferred thinking style, but then they may face problems in communicating with people using other styles. It is therefore important for a person to be able to choose thinking styles depending on the situation (Musioł, 2003; Papakitsos et al., 2017). People who apply this technique learn how to identify opportunities, do away with their egoism, oppose a single-sided approach to a problem, and look for dynamic results. With this technique, they neither defend nor openly reject an idea before it has been explored. Edward de Bono considers that any problem can be creatively solved using this technique, provided that it is possible to overcome three fundamental difficulties:

a) *emotions* that accompany decision-making, emerge when approaching a problem and suppress rational thinking, contribute to relying on hunches and prejudices – according to de Bono, "emotions at the right place in thinking are essential but emotions at the wrong place can be disastrous";

b) *helplessness* which occurs when there is no clear action plan, when the problem appears impossible to solve, to overcome, which manifests itself in powerlessness, inability, lack of clue about what to do next:

(c) *confusion* which arises when one comes up with many ideas – good and bad ones, often chaotic, which appear to be good solutions at the time but in fact distort the true picture of the situation (Kivunja, 2015).

The core of this technique rests in the fact that, owing to the powerful metaphor of colourful hats, an individual has the ability and capacity to "put on" and "take off" hats of a particular colour, and thus to place themselves in different roles. "Putting on" one of the hats (white, red, black, yellow, green, or blue) – usually in the imagination – means a focus on the issue under analysis only from a defined point of view. "Wearing" a hat of a different colour makes it possible for the user to look at the problem from a different perspective and to make an attempt to find alternative solutions. On the other hand, "putting on" several hats in succession (in a specific order, not randomly) allows us to see what would be rather impossible without assuming a specific role imposed by the colour of the hat. Thus, the six thinking hats metaphor represents six different cognitive approaches to a problem, approaches which should be based on critical thinking and analysis of the issue at hand from different angles. The different "hats" allow us to focus our attention on a specific area, concerning the same problem, but perceived from different angles. They also allow us to let loose our imagination and forget all formal limitations of thought, which in turn contributes to creative and imaginative exploration of alternative solutions (Bono de, 1996).

3.2. Characteristics of the research group

Bearing in mind the status of distance teaching in universities and the advantages of Edward de Bono's six thinking hats, research was undertaken using this technique to investigate students' attitudes to distance education, to explore their ideas on how to improve existing distance teaching solutions, but also to review existing models of teaching with students and to identify unconventional solutions that will help develop intra-university, but possibly also national or international, new, better, more successful technique for universities to work in pandemic conditions. The research was conducted in May 2021. It included 76 junior students majoring in Pedagogy. The students, due to the pandemic, never met each other in a lecture room, had no opportunity to interact directly with each other, to get to know each other. All year long, they met during courses delivered remotely. As newcomers to university, they also had no opportunity to learn what lecture room study was like, and based their learning on their experiences from secondary school. Before attending the research, they were

introduced to Edward de Bono's technique of six thinking hats, and had the opportunity to practice it during sessions. The problems they encountered had nothing to do with the problem they were going to face in the actual research. Once everyone confirmed that they understood what problem solving using the six thinking hats technique entailed, they were assigned the following task to complete on their own: Imagine you are the Minister for Education and Science and you have to decide what education will look like starting from the next academic year.

4. Findings

The sequence of "putting on" the hats, and thus the sequence of the students' statements, was in accordance with Edward de Bono's recommendations. In the first place, the students were to "put on" the white hat, i.e. present all facts (verified and documented – the so-called first-level data, as well as data which had not been completely verified, but which the respondents believed were true – the so-called second-level data) concerning the problem at hand, and analyse all the available data on the subject. Therefore, all thinking at this stage was to be based solely on specific facts.

The second hat was to be the red one, which allows to express subjective feelings, emotions, and impressions. The respondents were supposed to view the analysed problem from the perspective of their individual emotions, express the impressions it provoked in them. With this hat, they could articulate two types of emotions: strong and ordinary, and the so-called complex judgements, i.e. sensations, intuitions, preferences and any feelings that are difficult to explain clearly and concretely.

The next hat which the participants "put on" was the black hat. Wearing it, they became logical pessimists. As such, their role was reduced to anticipating and finding all risks, negative, wrong, incorrect and misleading phenomena that accompany, or may accompany and hinder the solution of the problem – they focused on the weak points. Their evaluation of the situation could have been associated with negative experiences from the past, with warnigs offered by people knowledgeable and experienced on the subject.

By "putting on" the next hat – the yellow one – the respondents had the opportunity to see the problem from an optimistic perspective. Therefore, they were to try to perceive as many good, positive, advantageous, and favourable sides to the existing situation as possible, they were to "turn on" the joy of discovering, curiosity, and optimism. Such an approach enabled them to gain a wider outlook on the phenomenon, and made them motivated to find what might turn out to be useful, viable,

profitable, functional, convenient, and involving positive emotions. "Wearing" this hat, they also became more inventive and constructive.

Fifth, respondents put on the green hat. Here their task was to activate their creativity and inventiveness in order to arrive at an unconventional and innovative solution to the whole problem or at least to part of it. They were required to look for new paths, fresh, not necessarily logical arguments and, one could say, even crazy ideas, which could prove to be the key to success and to discovering the usefulness and possibility of applying what for others is imperceptible and sometimes perhaps ridiculous.

Lastly, the participants "put on" the blue hat which stands for a good organisation. Wearing it, they became impartial but active observers of the problem under analysis. Thus, their task was to organise what they had figured out so far, and then to determine priorities that would pave the way for solving the problem. They could also reflect on the most difficult things and the direction their thinking had taken (Kivunja, 2015; Rarot, 2014).

a) White hat - facts

In order to present a sound overview of the facts related to distance teaching at universities, it was necessary to retrieve various types of reports on the subject (Crawford et al., 2020; Dlugosz et al. 2020; Mazur, 2021; Prynne, 2021; Romaniuk et al. 2021). Such reports were already available on the Internet, so all the participants had to do was to find them, read them, and select the data they considered most relevant. Unfortunately, most of the students participating in the study failed to do so. They relied on popular articles available on the websites of various online newspapers or on overheard information they believed in but did not have any evidence for, rather than on specific data from reports. Only few of them (5 people) were able to access a single report. Therefore, this part of the study lacked the so-called first-level data, i.e. verified and reliable facts. On the other hand, all participants provided the second-level data, i.e. data they believed in but did not find any actual confirmation for in any sources. What is interesting, however, is the fact that the participants focused on several aspects that influenced their further considerations. Most of them referred to the attitudes towards distance teaching of some people, whether the latter were involved in the field of higher education or not, as facts. Based on what the students wrote, the majority of Poles are dissatisfied with the quality of distance teaching and the knowledge level acquired after a year of such teaching. The students emphasised that this was probably due not only to the absence of direct contact, but also due to the quality of the courses held through various applications and platforms. They wrote that most of the

sessions were boring, the lecturers did not attempt to interest the students in what they have to say, they pushed the burden of responsibility for learning on the students by providing literature and forcing them to master certain issues on their own. Almost ¾ of the respondents (72%) pointed to the fact that many students do not have modern equipment enabling them to efficiently participate in courses and credit sessions, and that in many regions there are no good Internet connections, which results in many people being "rejected" from sessions or unable to complete exams or obtain credits in the designated time. One of the students reported the following facts: a diagnosis of distance teaching at Polish universities during the pandemic was undertaken by the Independent Students' Union (NZS 2020). At the end of March and the beginning of April, a survey was carried out involving 3 400 students from all over Poland. More than 53% of the respondents indicated that the lecturer does not hold remote sessions. 68% of them said that the courses are delivered only by e-mail, 63% mentioned platforms such as Teams or Discord, and only 43% pointed to the university's virtual system. The advantages of distance teaching, indicated by the participants, included: sharing of materials, possibility of downloading study materials, and better interaction with teachers. Disadvantages, on the other hand, included reduced social interaction, increased costs to access equipment, technical issues and lower ability to understand student learning.

The second area to which the participants pointed out was health. In this case, almost all of them managed to reach the data concerning the number of vaccinated individuals, types of vaccines, effects of vaccinations (they also informed, among other things, of the attitude of the society towards vaccination, fear and concern about post-vaccination complications). Although there was no information about the percentage of vaccinated students and lecturers, the manner in which the statements were formulated suggested that these two groups have a responsible approach to vaccination and "probably vaccinate in the first place" (only in one work was there a reference to the vaccinated age groups – in May 2021, the least vaccinated group was that aged 18-30, which is at the same time the group to which students belong). The respondents reported yet another fact on this topic – vaccines do not guarantee that a vaccinated person will definitely not contract coronavirus, there is even no confirmed information on whether the disease will actually be milder in vaccinated people and whether fatal cases can be avoided. A few works (8%) also reported an increase in the incidence of depression, the onset of other conditions such as back pain and contractures or impaired vision, with low physical activity translating into higher body weight. In a few comments, information was also provided on

the health effects of staying in large groups. The participants underlined that the spread of viral infections is facilitated by indoor activities held in inappropriate conditions, without following the top-down recommendations. They also pointed out that the increased incidence is related to the time of year. The greatest increase is recorded in the autumn and spring months. In summer, there is a decrease in the number of cases and the whole social life comes back to normal.

Some works presented slightly different observations. One of the students noted that by using various applications, education platforms during sessions, using the possibilities these applications and platforms offer not only to listen to lectures or participate in exercises, the students were in a way forced to become acquainted with the various options, and this greatly increased their computer skills, their proficiency in using a diversity of computer programmes "and new technologies in general". A number of works also reported the occurrence of the so-called "digital fatigue" in students, i.e. a syndrome associated with very long and continuous use of the computer whose symptoms included: irritability, information overload, unwillingness to use the computer, fatigue, aversion to searching for information online, etc.

b) Red hat - emotions

Demonstrating personal feelings and emotions offered the respondents an opportunity to externalise all the frustrations, but also to show positive impressions that they experienced during the pandemic. In all statements, the dominant emotion was fear. Interestingly, most of the respondents not only mentioned the emotion, but also described why and what they were afraid of. The most commonly mentioned reason for fear was concern about one's own or one's family's health and life. As the students wrote about: "I am scared and I have never been so scared before. The pandemic has undermined our sense of security (...). The worst thing is that there is a multitude of different, not always consistent information on how to protect yourself from infection, on the effectiveness of vaccines, and the coronavirus itself. This informational chaos is contributing to the fact that I cannot overcome fear, and my sense of security that I had before will probably never come back again." The respondents were also afraid of meeting their peers again after a year's break, of having to commute on municipal transport to and from university, and even of demanding lecturers who would not understand their individual concerns and problems. The range of negative fear-related emotions in the respondents is very wide. Alongside fear, they list such feelings as: uncertainty and worry about what

the future will bring, what social life will be like, whether normality as before the pandemic can ever be achieved; negative thinking – it is difficult to shift to positive thinking when people are sick or dying in the closest environment and there is no way to ensure effective help for them; disorientation; prolonged anxiety, horror, nightmares. These negative emotions also included: sadness, frustration (when thinking of sitting in front of a computer all day), sense of loneliness, alienation, lack of understanding, disillusion, sense of meaninglessness of all actions. An example of this spectrum of emotions can be found in a statement by one of the students: "I am a minister – and so what? I feel angry and helpless. I should think of something to make all those who are waiting for my wise decisions feel more secure. But what can I do when in fact all my decisions depend on a number of conditions? I depend on what will happen in the near future. Whether there will be more cases, whether it will be possible to provide at least basic medical assistance to all the sick, and so on."

Despite negative emotions being mentioned most frequently, positive emotions were also featured in some works. The respondents wrote that they felt joy and a sense of comfort, but also enthusiasm because they did not have to hurry, run for a bus, crowd with sweaty passengers, they could listen to lectures while lying in bed, drink and eat whenever they wanted, etc.

c) Black hat - pessimism

"Wearing" the black hat, the students could express all their concerns and describe all the dangers that could arise in the situation at hand. Here, the respondents portrayed all the bad and terrible things that can happen to them, situations involving harm, risk, and danger. There were two types of threats featured in the students' works – the first was related to taking courses at a distance, and the second was related to lecture room activities.

Among the risks associated with distance education, there were several groups. Most people mentioned, first and foremost, health risks such as: depression, posture defects, various mental disorders, eyesight deterioration, weight gain, anxiety. The second group of risks of distance teaching included social risks, i.e. disruption of proper relations with peers and lecturers, alienation, loneliness, isolation – both among the students and the lecturers. One student described this type of risk in the following way: "Students do not know each other, do not make friends, do not socialise after lectures. In addition, we have limited opportunities to ask questions, and it is difficult for lecturers to reach out to their students' individual needs".

The third group of risks can be referred to as education-related risks. Within this group, the respondents mentioned: low quality of courses and acquired knowledge, inability to do internships properly, inability to have direct contact with, and thus learn about, the specifics of future professional work, inability to check the acquired knowledge and skills in practice, unfair evaluation, disengagement and decreased commitment to learning, biased assessment of the acquired knowledge, passive attitude of students towards learning, lack of proficiency in using applications for distance teaching, concentration problems ("you have to attend lectures all day from early morning till late at night, and even though it is possible to do while lying on the couch, nobody can manage to attend classes continuously from 8 a.m. till 8 p.m. Many people do not have the right conditions to focus, because there are siblings in the same room who also have classes, and when you have to answer questions orally, it is a total massacre"), the lack of conditions at home for optimal participation in courses, being distracted by other household members (if a student does not have their own room), difficult cooperation with lecturers who, unfortunately, are not the best in using state-of-the-art technologies and holding courses at a distance, the inability to see the emotions of lecturers and peers, problems with accessing materials from which to learn ("Due to the limited operation of libraries, movement restrictions, or living conditions of students, there are enormous difficulties in accessing study materials. There is no clear indication of which materials are essential and which are not. When you have to read everything, it takes unbelievable amount of time and you get confused rather than absorb condensed information"). The fourth group of risks includes technical risks, i.e. the lack of good equipment and insufficient funds to buy new one, poor Internet connections, connection failures, e.g. during exams or credit sessions. The last group of risks can be called "other" – they included: lack of care for oneself, for one's appearance, hygiene, clothes, which may result in reluctance to leave home, to show oneself to anyone, spilling negative emotions and personal frustrations by lecturers onto students, anti-student schedules ("An arrangement of schedules so that the student has distance courses all day long fosters fraud, students are logged in and join subsequent courses, but they do not turn on their webcams so as not to overload the system. The lecturer speaks to the screen and has no feedback on how many people are listening. In reality the students do not necessarily listen to them, because at the time of the lecture they do some household chores, eat, go to the bathroom, etc., and they e.g. record and possibly listen to the lecture at another time or even not at all").

In their statements, the respondents also dedicated a lot of space to the analysis of the dangers of lecture room teaching in the current epidemiological situation. Among the most frequently listed risks faced by students and lecturers who would have to return to lecture room education, the following were indicated: the possibility of contracting the infection, severe course of illness, complications, death. More than half of the participants considered it a risk that young people, after a break of more than a year, will not be able to find their way in the new, different conditions caused by the epidemic, that the fear of being infected will prevent normal student contacts, that it may even become a problem to get to the university, to have a meal during breaks between activities, to use the reading room, to take part in physical education activities or workshops requiring direct contact with other people. According to the participants, concern for one's own safety and the need to comply with a number of orders and bans may translate into anxiety, frustration, and prolonged stress.

d) Yellow hat - optimism

The participants noticed plenty of good aspects in distance teaching in pandemic conditions. This is all the more surprising since their feelings encompass a wide range of issues and seem deeply thought through and re-evaluated. As with white hat, optimistic views can be presented in several areas. The first one involves economic gains. Almost every participant wrote about the immense savings in money and time. One of the students writes about this as follows: "Distance education is cheap. I did not realise how much my parents would have to pay for renting a room, commuting, how much money they would have to give me to support my staying in a big city. Even if you include the increased electricity consumption, the savings are still enormous, which is important for poorer students." On the same topic, another student commented as follows: "This pandemic has brought only good things, above all financially. Many university buildings are vacant, universities do not have to pay for electricity, water consumption, waste disposal, cleaning, and so on. This saved money can be used, for example, to provide universities with state-of-the-art equipment or modern teaching aids, which will be very useful when students return to lecture room studies." Many female students also said that they do not spend that much on cosmetics, new clothes, or shoes.

Other advantages were seen by the respondents in the possibility of participating in the courses in a casual manner. They emphasised that home learning is comfortable for various reasons. "You do not have to get up early. You only need to turn your computer on 15 minutes before the lecture

and you can still lie in bed and listen. And you can do it in your pyjamas, with a cup of tea on the night table. You can go to the bathroom whenever you want, eat and drink whenever you like, and even do some other non-study errands in the meantime – for example, clean your room. If you are called to answer, you can pretend that the Internet has just crashed or that there are some connection troubles". Students also considered it comfortable that, owing to smartphones, they can take part in courses not necessarily at home, but they can attend lectures while driving a car, in a garden or a summerhouse, staying with family or friends. Also the fact that the lecturers make materials readily available, including their private resources, was seen as an advantage of distance teaching, as there is no need to look for anything, everything, or almost everything, is within easy reach. "(...) At last you do not have to write anything down!!! You just activate a suitable application which records the voice of the lecturer and you have a home lecture library. You can make screenshots of the slides...".   Two students remarked that many lecturers provide not only text files, but also references to interesting websites, lectures and videoconferences abroad, use non-standard tools such as games, quizzes, puzzles when working with students, which makes absorbing knowledge very attractive. Several persons also saw the comfort of the entire situation in the fact that due to the aforementioned conditions young people have more time to develop their interests and passions. Some students also considered increased self-awareness, responsibility, and self-discipline to be an advantage. "In distance teaching, no one forces anyone to do anything. The student must motivate themselves to sit in front of the computer, take care of notes or screenshots, and absorb what the lecturer asks them to".

Many of the responses also touched upon health benefits. The participants believed that by staying at home, they were more likely not to become infected, that the number of cases and deaths would not increase, and that health awareness would rise. "After a year in pandemic conditions, we all have some experience, but it is important to underline that everyone has developed some hygiene habits to limit the spread of the virus". Yet others saw a benefit in the fact that they had significantly upskilled in IT. "An extraordinary benefit of studying remotely for a year is that new IT skills have been developed and refined in everyone – both students and lecturers. The necessity of conveying knowledge via various applications, preparing materials, credit sessions and exams, uploading materials to a variety of platforms has forced not only students, but also lecturers to master previously unfamiliar skills in the field of the newest technologies."

The majority of the students "putting on" the yellow hat concentrate in their statements on the advantages of distance education. However, almost one third of the respondents stressed that nothing surpasses the possibility of learning in direct interaction with the lecturers. They put forward the argument of socialisation, of acquiring the ability to work together in a group, and thus of interpersonal communication, empathy, understanding, and a sense of community. "What happened due to the pandemic is something that probably never happened before. After months of sitting in front of computers, students have suddenly missed university. They wanted to be within its walls again, to meet with their peers and even the lecturers, they wanted to have live courses". Among the benefits of this kind of teaching, the students also indicated health benefits, among which they mentioned improved mental well-being, physical fitness, or lack of problems with being overweight.

e) Green hat - creativity, possibilities

Having analysed the advantages and disadvantages of distance and lecture room teaching, the respondents had the opportunity to propose ways to improve or enhance either form of teaching. While most of them did not demonstrate innovative thinking and creative approach to the problem, the suggestions of the remaining students were excellent. Their ingenuity in noticing the opportunities offered by the educational situation at hand to make permanent changes to the shape and forms of teaching may serve as an inspiration to many education decision-makers. The most interesting proposals included:

1. A single internal e-learning platform to be created by the different universities, supporting courses, materials uploading, and examinations. The participants wrote as follows about such solutions: "To ensure more effective distance teaching, each university should establish an internal e-learning platform. The experience so far shows that each lecturer is free to choose the application to teach and communicate with students. The student, on the other hand, has to switch between these applications and remember who is teaching with what. This is a huge inconvenience. Had there been one place for that purpose, all would have been easier. In another comment, one of the students pointed out yet another advantage of the internal e-learning platform. He writes as follows: "If each university had its own platform for distance courses, it would be possible to mandate the rectors or deans to set up an intra-departmental or intra-university e-library that only lecturers and students could access. Lecturers have already done a tremendous amount of work making various materials available to students.

It would be a good idea to put these resources in one place, constantly expand and develop it, and then just refer students to it. Everyone would have less work and everyone would benefit".

2. A motivation system should be established for lecturers to try to use different media or forms of activating students in order to make courses attractive and more digestible. "It is essential to properly transfer knowledge to the students. Recording or live lectures alone are absolutely not enough. We need something to encourage the students to be active, to interact. Engaging them is the biggest challenge for the teacher. After all, we evaluate lecturers so we know who is able to make remote activities more attractive, has excellent contact with students, provides interesting materials, etc. For those who do not make an effort, it would certainly be motivating to take more attempts to organize and conduct courses".

3. New e-learning rules should be introduced. "It should be forbidden to schedule courses in such a way that there are lectures all day long from morning until evening, and on the next day, there are only exercises. The types of activities should be interlaced so that students can focus and participate in them more easily. In addition, the lecturers should be forbidden to assign so many written assignments. Each lecturer should dedicate more time to presenting what students have prepared, to thinking-inducing discussions, to exchange opinions. Such a form of courses will help to get to know the students better, establish interpersonal bonds, offer a substitute of normality". Another student also spoke in a similar way: "Lecturers should be instructed not to spend all their time exclusively on the educational content foreseen for a given course. They could somehow condense it so that some time would be left for socialising activities, for chatting, getting closer to the student".

4. The strict principle that distance courses should last as long as lecture room ones should be abandoned. In the view of the respondents, spending time only on the substantive content can be tiresome, distracting, difficult to focus on, in particular when there are several lectures scheduled for the day. The students saw a solution to this situation in reducing the time of the lecture by a third and devoting the remaining time to various forms of consolidation of knowledge in the form of play, conversation with the lecturer, socialising activities, discussing various issues. One student considered that it would be useful to use the time saved in that way for physical education. "During the breaks between courses, PE teachers could run short activities showing exercises that could be done at home, exercises that would at least relieve some of the strain on the spine, loosen up the muscles, allow you to relax".

Many students focused in their statements on innovative ideas for a return to lecture room education. They were unanimous in writing that education will probably never be the same as it was before the pandemic, but with various types of changes, it might be possible to create a new shape of lecture room education. The first step for the higher education authorities should be to issue guidelines for academic teachers so that the latter would already start considering how they are going to teach their subjects when students come back to the university. "Lecturers should already be made more aware that the pandemic will not last indefinitely, therefore they should already start looking at how to organise their courses to minimise stress and generate a friendly atmosphere. They should already think of what the students will need most to prepare well in advance and not wait until the last minute". University authorities should also be required to provide psychological support for students in their faculties. "Each faculty should therefore employ at least two psychologists, who would meet with all students, instruct them how to deal with fear and stress, and support weaker individuals in finding their feet in the conditions of lecture room education".

Two comments concerned a completely different organisation of activities at universities. The first one referred to the reduction of the size in exercise groups. "Many universities do not have the conditions to comply with the principle of social distance during courses. Maybe it would be a good idea to introduce new regulations regarding the size of the groups. Smaller groups would benefit not only students, as the latter would be able to participate more fully in courses, but also lecturers, as it would probably be easier for them to deliver content, to hold discussions or workshops. From the economic point of view, this solution would perhaps not prove successful, but it might be a sound idea to give the authorities of individual universities the possibility of dividing existing student groups into half, and organising the courses in such a way that half of the planned time would be devoted to the activities held at the university, and the other half would comprise independent student work, based on materials provided by the lecturers. In such a way, the lecturer would be working the same number of hours as they had been previously assigned, but with a larger number of student groups. On the other hand, the students, through remote consultations, would have an opportunity to ask questions, to direct their own work". The second suggestion was to introduce an entirely new organisation of the academic year. "We should make the best use of the knowledge and experience of the last year and initiate a genuine revolution in the organisation of teaching in higher education, and perhaps even in the Polish education system as a whole. Since most coronavirus cases occur in

autumn and spring, a slightly different organisation of the academic year might be worth considering. As minister, I could establish a completely new principle, which has not been applied to date, that the academic year begins on 1 June. The first semester would continue until the end of September, followed by an examination session and a two- or three-week break. The second semester would start in mid-December or early January and would last until the end of March. Then there would be a break and we would go back to university in May. Such a solution would enable us to use the time of lower incidence to optimally organise activities at the university. Another idea would be to introduce in this cycle, for example, monthly periods of distance lectures, which would relieve the period with little new infection cases and at the same time the continuity of student work would be ensured."

f) Blue hat - organisation

The in-depth analysis of the problem at hand was to be completed by formulating the final decision on what higher education should look like in the academic year to come. The respondents unanimously agreed that nothing can replace lecture room teaching. However, given the health conditions and the epidemiological constraints, in their opinion the best solution would be to introduce hybrid learning. As "ministers", they offered a lot of autonomy to rectors and deans, who, knowing best the infrastructure and capabilities of their universities, could organise teaching in an optimal manner, use the resources saved to supply the universities with e.g. modern IT equipment, create a laptop rental service for poorer students, take account of the specificity of various subjects and select an appropriate form of teaching for them.

5. Conclusions

In their role as Minister of Education and Science, the students above all proved that they were able to see different aspects of the situation in which education, and especially higher education, was placed during the pandemic. Despite the fact that they did not have the opportunity to get to know the specifics of lecture room teaching, the experience of a year of distance learning allowed them to produce value judgments and deeply considered statements, opinions, evaluations.

Summarising their contributions, it can be said that:

1. The weakest link in their responses was presentation of facts concerning education and functioning in pandemic conditions. The respondents presented their knowledge on this topic relying either on the

information they heard or on their own feelings. They did not attempt to find and familiarise themselves with the actual data. Despite these shortcomings, the value of their statements cannot be diminished. What they wrote about while presenting the facts (white hat) is a portrayal of the attitude of society and the closest ones of the respondents (their families, friends, neighbours) to the pandemic, and in particular a portrayal of its disorientation, powerlessness and fear.

2. All respondents were very clearly able to identify the emotions accompanying people at such times. To no surprise, they were most often negative.

3. The respondents demonstrated very good perceptiveness and the ability to view the problem from various perspectives when presenting the pessimistic and optimistic aspects of the pandemic; the threats to society were most frequently identified in the following areas: social, health, emotional and educational, while the positives were translated into health and economic aspects. The participants considered the advantages and disadvantages of not only distant but also on-site education.

4. Not all respondents were looking for creative and inventive solutions, most were not able to depart from standard thinking, but the few innovative solutions they presented were fantastic and „revolutionary", worth noticing but also considering by educational decision makers.

5. When constructing their answers, the respondents very often "forgot" to look at the problem of the pandemic from the perspective of the Minister of Education. Clearly, their personal references, perceptions, frustrations, emotions and experiences most often spoke for themselves. However, this approach also brought valuable insights, demonstrated how functioning under sanitary and educational restrictions forced by the pandemic is perceived and experienced.

6. Students are not satisfied with the necessity to study "from home". In spite of many concerns, they would rather go to the university, meet with their peers, have the possibility to take at least some classes at the university. They even thought that a little effort on the part of the university authorities would be sufficient to create safe conditions for normal studying.

Their comments clearly indicate that although they have many concerns about their own and other people's safety, they long for contact with others, they really want to meet their peers, to function in relatively normal conditions, even at the expense of greater safeguards and hygienic and health restrictions. They also demonstrated a great deal of maturity and ingenuity in finding ways to improve the organisation of distance and lecture room teaching, so that hybrid teaching can actually be provided. Their

insights can serve as a true inspiration for many of education decision-makers.

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