



REORIENTING THE ROLE OF TEACHERS AND TEACHING ACTIVITY DURING THE COVID-19 PANDEMIC PERIOD. A CASE STUDY ON AN AGRICULTURAL TECHNOLOGICAL HIGH SCHOOL FROM ROMANIA

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Abstract. The Covid-19 pandemic has raised significant challenges for the education community around the world. In Romania, a particular challenge was the urgent switch from onsite to online teaching, without any prior training of teachers in this direction, nor the provision of adequate technical support from the very beginning. Online teaching and learning involve some pedagogical content knowledge, mainly related to designing and organizing better learning experiences and creating distinct learning environments, with the help of digital technologies. The aim of this paper is to analyze the reorientation of ways of teaching activity, the modification of perceived roles, and the changes brought about by online pre-university education. Hence, in order to identify how some pre-university teachers felt these sudden changes, research was undertaken in an Agricultural Technological high school in Romania. The focus was on the analysis of the way in which the didactic act was carried out during the online education period, compared to the post-online one (traditionally, with the integration of technology), with the identification of the difficulties encountered by the teachers and the reorientation of the educational act. The qualitative research consisted of conducting semi-structured interviews with teaching staff from the institution where the study was carried out. Although online teaching was a challenge for the entire pre-university education, in Romanian agricultural high schools, where pupils mostly come from disadvantaged backgrounds, social differences were amplified. The present research clearly showed that the Agricultural Technological High School faced online teaching with great difficulty, not being prepared for this situation in terms of resources. Of course, a high adaptability of the teachers was noted, who used their own resources and learned to use educational platforms and digital tools in record time to still manage to keep the teaching-learning process active.

Keywords: Covid-19 pandemic, digital technology, pre-university education, on-line education.

1. INTRODUCTION

On March 16, 2020, a state of emergency was established in Romania because of the COVID-19 pandemic, which considerably limited the mobility of the population, imposed restrictions on land and air transport, quarantine measures for Romanian citizens coming from abroad, and so on. In terms of education, the entire onsite education system was closed down, situation that stretched over a period of one and a half years, in both pre-university and university education systems. During this time teachers and professors, pupils and students were forced to carry out the education process in entirely new and unknown circumstances for the majority of them: online teaching and learning.

The term "online learning" is widely used, but with a variety of meanings. For the purposes of this article, online learning refers to learning that is mediated by the Internet. It is more comprehensive than "networked learning". It is narrower than 'eLearning' and 'digital education', which include the full range of digital tools and resources, not just the internet, and a focus on developing digital skills. Furthermore, online learning

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lacks the built-in claim to enhancement that makes "technology-enhanced learning" (TEL) [1][2] a problematic phrase [3].

Worldwide, because of the COVID-19 pandemic, approximately 1.7 billion students got affected by school closures in 190 different countries in 2020 and 2021 [4]. The sudden shift to online teaching has been accompanied by many challenges. Almost all pedagogical approaches, content areas, lesson pacing, interaction patterns, and assessment methods were changed during the transition. This increased the burden on teachers who were asked to align digital educational content with their existing national curricula and at the same time respond to the academic, mental health, social and emotional needs of students [5]. Online teaching approaches have rarely been treated in the specialized literature because of the need for an effective combination of pedagogy, informational content and technology [6].



Figure 1. Pierson's model [3]

In the new context, in order to fulfill their new roles, teachers had to shift their focus during the class from lecturing to assessment. Inquiry-based teachers become evaluators to "help diagnose students' prior knowledge, measure students' knowledge on comprehension experience and guide instruction, and measure their understanding and knowledge at the completion of the learning experience" [7]. In other words, the facilitator maintains the focus on learning, moves the process forward, measures the challenge, and provides appropriate feedback to the student and to the whole group [8]. Some authors have succeeded in proposing technology-enhanced teaching-learning models [9] [10] [11] [12].

At the system level, technology-involved teaching involves four primary components: the students, the instructor, the information content, and the technology tools[13]. An analysis of each component highlights some issues that should be taken into account in order to integrate the technology as efficiently as possible. For example, content can be analyzed from the perspective of learning outcomes and of the studied discipline. Pre-service teachers draw on their personal experience with technology, taking into account the time allocated to planning, teaching and their vision of their role in the teaching-learning process[14]. Students must be carefully screened, their exposure and access to technology, and their learning styles must be considered. Finally, technology can be called upon and analyzed according to its functions[15].

This way of approaching teaching and learning, through technology, considers the integration of the four component parts and the need to change all of the remaining 3 parts as a result of change occurring in one part in order to achieve the initially set objectives.

In the process of integrating technology into their curriculum, teachers encounter various barriers, Ertmer proposing a classification of them into two main categories:

- external barriers (e.g., equipment, time, training, and support)
- internal barriers (e.g., teachers' core beliefs about teaching and learning) [10].



Figure 2. Teaching with technology model [10]

In order to analyze how the changes imposed by the COVID-19 pandemic affected the pre-university education system, the authors focus on identifying and highlighting the ways how teaching activity reorientation took place and how the modification of the perceived roles and the changes brought by the online education felt by the teachers from a high school in Iasi County, Romania.

2. EXPERIMENTAL PART

The qualitative method used to conduct this study was the semi-structured interview. The interview is one of the main ways of approaching reality in qualitative research. In the case of qualitative interview, the answers are relevant by themselves, as an expression of the subjects' perceptions and experiences[16]. The advantages of the semi-structured interview derive from:

- the possibility to explore attitudes and affective characteristics expressed in a natural form, specific to the person under investigation;
- the fact that the structure and motivational dynamics of the person can be understood in relation to certain situations;
- the possibility to study phenomena or events whose complexity is not easily approachable by standardized methods;
- fostering closeness and trust between the researcher and the investigated person, which allows the approach of sensitive subjects [17].

The present study is based on the empirical theory model. This approach refers to the inductive development of a theory, which is derived directly from the body of data collected in the research process. For Frost, Nolas and Shinebourne the empirical theory method is a way to study actions and interactions between phenomena, being advisable to answer event-oriented questions (e.g., "what is happening?", "how is it explained?", "why is it happening?" etc.) [18]. If the process is well performed, then the resulting theory perfectly fits at least the collected data set, without necessarily claiming to be generalized to another data set.

The semi-structured interview was applied to a sample of 8 (eight) teachers from the "Mihail Kogălniceanu" Miroslava Agricultural Technological High School, from Iasi County, Romania. The teaching staff at the institution mentioned above is reduced compared to other institutions in the sense that there are 32 teachers, of which only 28 are of the basic standard in this high school. The sample therefore represents 25% of the total number of teachers, a significant and, at the same time, representative sample for this technological and agricultural high school. The sample was made up of teachers who teach the following study subjects: Economic disciplines - 2 teachers, Food industry - 2 teachers, Romanian language and literature, foreign languages - 2 teachers, Biology - 1 teacher (in the unit there is only one biology teacher), Animal Husbandry

- 1 teacher (in the unit there is only one teacher of animal husbandry disciplines). The interviews were audio-recorded and fully transcribed. The interviewed teachers gave their consent for the audio recording procedure, and they were correctly and fully informed about the data use.



Figure 3. Study sample distribution

3. RESULTS AND DISCUSSION

3.1. Results

The first stage of processing the information collected during the interviews was the script transcription of the audio recordings. After fully transcribing the interviews, they were carefully re-read in order to identify common elements and differences between the answers given by the respondents. All 8 respondents are dedicated teachers who love teaching. Five of the eight respondents (62.5%) put the interaction with high school students in the top of their preferences in the activity of a teacher. The teachers at the "Mihail Kogălniceanu" Agricultural Technological High School believe that in-depth knowledge of students and family situations are prerequisites for students' success. The second question - "How would you describe yourself as a teacher?" - revealed the close connection that teachers have at the "Mihail Kogălniceanu" Agricultural Technological High School in the sense that all the eight interviewed teachers identified, in addition to the roles - obviously, indisputable - of transmitter of new scientific content, of promoters - the counselor, empathizer role. At the same time, in favor of balancing this emphasized role, as an adviser, the teachers of the Miroslava Agricultural Technological High School appreciated that they have a strong role of leader and manager in the classes where they teach and/or are conductors.

The third question - "How would you describe your relationship with the students?" What is the relationship with the parents?" - brought to the surface the specificity of the teacher-student-parent relationship. Teachers are aware of their leader role in the educational process, but they appreciate that this role is sustained by the support and collaboration with the family. Thus, teachers (as representatives of the school institution) and the family represent the two pillars of resistance on which education rests. The two professors who teach economic subjects, although with a notable difference in their experience at the department, appreciated the challenging nature of online teaching, but avoided positioning themselves in a specific part, preferring to analyze the advantages and disadvantages of online teaching. All the interviewees declared that the content of the subject matter taught in online education was largely, but they emphasized that this did not facilitate the achievement of the educational objectives, as they were achieved in a much higher proportion in traditional education compared to online teaching:



Figure 4. Traditional vs. online teaching

1. Time management - regarding this aspect, the majority of the interviewees felt that they managed their 50-minute online lesson much better for the following reasons: apathy/demotivation of students in online teaching in the sense that they no longer had the same attitude of involvement during the lesson; quite high absenteeism caused either by the lack of the device, or by the lack of internet, or by the lack of signal; the consistent diminution of the empathic, advisory role of the teacher led to an emphasis on the role of expert in the educational act.

2. Content management - the teachers reported that in online teaching content management was also better than in traditional teaching because they managed to transmit, with the help of digital tools, a large volume of knowledge in a much shorter time, shorter than it would have been in traditional teaching.

3. Regarding the achievement of the educational objectives - although online education came "packaged" with many digital resources appreciated by teachers as useful, attractive, efficient -, the teaching staff considered that these were not achieved in online education at a satisfactory level; for this reason, upon returning to the classrooms, teachers noticed many gaps in the students' theoretical knowledge. For some subjects of study, there were available textbooks and digital aids prior to the pandemic. Another aspect that favored the low achievement of educational objectives in online teaching was related to the fact that technical subjects have, in addition to the theoretical part, a laboratory part and a practical part. Even if the teachers used all their imagination and creativity, some of the practical activities were impossible to be held online.

4. In terms of the teacher-student connection, the interviewed teachers considered that it exists mainly in traditional teaching, being mostly absent in the online one, with the exception of Ana (zootechnician) who explains that she made efforts to maintain this connection with the students, being aware of the implications of this aspect in the life of the twelfth-grade students, who were going to pass the maturity exam.

5. Teachers' self-improvement - two of the teachers interviewed stated that they felt forced, constantly pushed in online teaching to improve themselves either on the side of acquiring new IT skills, or on the side of identifying, selecting the most effective digital materials to be able to maintain students' motivation (which was rapidly decreasing).

3.2. Limits and future research directions

Although the obtained results are very valuable, the present research also has some limitations. First of all, the sample used did not include mathematics, chemistry, physics, psychology, physical education and sports teachers. Their perception can represent the basis of a subsequent study that complements the findings of

this research. Secondly, the results of this research may differ from those describing the same situation in other agricultural and/or technological high schools. Moreover, knowing that there are substantial differences between theoretical and technological/agricultural high schools, it is very likely that teachers in theoretical high schools have different perceptions than those shown in the present paper. Lastly, considering that the challenge of teaching online was a global one, it can be assumed that teachers from other countries have a different perspective on the issues researched and presented in this paper, taking into account the economic and social differences, the different endowment of the educational institutions and not lastly, the digital skills of teachers and students. The perception of teachers who teach other subjects than those included in this research may be different, but would help to make a general picture to draw the overall image in order to find solutions to improve teaching through the integration of technology.

The present research can be also extended at international level, especially in the countries form Eastern Europe, where the teachers were forcibly and suddenly challenged by the sudden transition to online teaching. Hence, the integration of technology into pedagogical practice should be further explored to support and sustain the transformation and professional development of teachers (especially in online education). Because access to teachers' perspectives is essential in examining transformation, data can be collected using methods such as observation or interviews. Furthermore, action or participatory research methods can be used to engage teachers in research processes as they investigate their own transformation and reflect on their practices, perspectives and assumptions. While studies of teachers' online experiences represent important exploratory research, future research should also focus on how collective transformation occurs within organizations and communities. It should also investigate the different ways in which teachers, communities and organizations are transformed through online learning initiatives and the roles different actors have in creating content, values and practices during this transformation.

4. CONCLUSIONS

Online teaching and the sudden manner in which it was introduced strongly challenged both teachers and students from "Mihail Kogălniceanu" Agricultural Technological High School from Miroslava, Romania. The challenges felt by the teachers were related to several aspects:

- the lack of knowledge (training) to use digital platforms and tools (both students and teachers);
- the lack of devices and the technical problems that manifested mainly among students; what is very interesting is that most of the students who come from rural areas represent social cases and do not have the economic opportunity to buy, from their own funds, digital devices;
- the lack of contact with students (spiritual, emotional, and even visual);
- increasing absenteeism linked to demotivation;
- going through all the scientific content and achieving the educational objectives.

Some of the above challenges have been overcome, but for some this was not possible. For example, the lack of IT skills was overcome through self-learning, the lack of devices among students was reduced by finding solutions to provide devices for some of the socially disadvantaged students. Either way, the lack of contact could neither be overcome nor replaced. For this reason, the teachers testified that there was an emotional and psychological imbalance caused by the imposed isolation, the lack of socialization between teacher and student, student and student, or teacher and teacher. This aspect led to the diminishing of the advisor role that a teacher normally has.

At the opposite pole, positive aspects related to online teaching and implicitly lessons were also identified. A first such positive aspect is related to adaptation to new conditions. Even if initially, there were difficulties, the teachers found solutions to digitize the teaching process and move it online, almost instantly; a second plus is related to the acquisition of digital skills - although they did not benefit from training, the teachers managed (mostly) to improve themselves in order to transmit the contents; another appreciable aspect is related to the amplitude of the digital materials created in those 18 months of online teaching. These materials are particularly useful and have also been integrated into traditional, face-to-face lessons.

The period of online teaching also came with a major benefit at the level of the educational unit, a benefit that, moreover, turned into an element of innovation that improved the instructional-educational act at the "Mihail Kogălniceanu" Agricultural Technological High School, namely the endowment of all classrooms with smart TVs. These devices are now used daily by most teachers during the class and students are captivated by the use of digital tools in traditional lessons.

Even though, for a year and a half, the "Mihail Kogălniceanu" Agricultural Technological High School closed its doors (like all pre-university educational institutions in Romania), and online lessons became the new normal, the education did not stop at the school gate, and the teaching staff did everything in their power during the pandemic to ensure that the students remained connected to the school, trained and motivated in the learning process.

The pandemic did not generate new challenges in the Romanian educational system but amplified them, in the sense that the inequalities in education deepened, the relevance to a constantly changing labor market decreased, as did the budget allocated to education. Although online teaching was a challenge for the entire pre-university education, in agricultural high schools, where the students mostly come from disadvantaged backgrounds, social differences were amplified. The closure of schools caused by the COVID-19 crisis has put pressure on the education system and there has been a decline in learning, an increase in dropout and early leaving of the education system, especially among the most vulnerable students, but also a rate of functional illiteracy higher by 10% compared to the period before the pandemic. In the same direction, UNICEF warns that the level of learning losses is "almost insurmountable" [20].

The period of online education created difficulties for many teachers, students and families: stress and anxiety, student demotivation and organizational problems for schools and families who had to juggle remote support devices. It also meant new difficulties for some of the most disadvantaged students, such as those living in poverty, the institutionalized and the disabled. Some of these difficulties were access to technologies for distance learning, isolation from classmates, and loss of support for access to study programs. The present research clearly showed that the "Mihail Kogălniceanu" Agricultural Technological High School faced online teaching with great difficulty, not being prepared for this situation in terms of resources. Of course, a high adaptability of the teachers was noted, who used their own resources and learned to use educational platforms and digital tools, in record time, to manage to keep the teaching-learning process active. Although the teachers pointed out many advantages and arguments in favor of online education, it cannot be neglected that educational objectives were not achieved, nor the emotional impact, both by teachers and students.

Thus, the Agricultural Technological High School Miroslava should focus on two directions of action:

1. provision of digital resources for all students (tablets, laptops with internet and courses for their use); 2. the development of effective counseling programs both for teachers and especially for students aimed at overcoming the emotional "lock-down" period and preparing for a new similar situation (possibly a new wave), as well as the development of school motivation to cover the gaps created during online education.

In this spirit, Robert Jenkins, UNICEF's Head of Education, stated: "While it is necessary to end disruptions to education systems, simply reopening schools is not enough. Students need intensive support to catch up on learning losses. Also, schools must go beyond their basic role and contribute to rebuilding the mental and physical health, social development and nutrition of children"[19]. Otherwise, in the next 10 to 20 years the world will witness a drastic skill' decrease on the labor market, which would have a devastating effect on Romania's economy, an economy that has already been heavily tested throughout history.

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