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## THE IMPACT OF COVID-19 ON LEARNING SYSTEMS – COMMUNICATION DIFFERENCE AND DEFICIENCIES IN ROMANIAN SCHOOLS

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### ABSTRACT:

THE COVID-19 PANDEMIC SITUATION AFFECTED THE WHOLE WORLD AND THE WAY WE WERE USED TO PERFORM OUR DAILY ACTIVITIES. MANY STUDIES INDICATE THAT THE IMPACT COULD BE SEEN ON MULTIPLES LEVELS: ECONOMIC, SOCIAL, EDUCATIONAL. ITS TREMENDOUS IMPACT WAS OBSERVED IN ALMOST EACH FIELD, WITH HUGE EFFECTS ON THE HEALTHCARE SYSTEM AND FACE TO FACE INTERACTIONS AT JOBS. IN THIS ARTICLE WE FOCUS ON THE EDUCATIONAL SYSTEM, WHICH MADE THE SHIFT FROM A DIRECT TYPE OF INTERACTION TO ONLINE CLASSES. THE AIM OF THIS RESEARCH IS TO HIGHLIGHT THE COMMUNICATION AND COLLABORATION IN HIGH SCHOOLS DURING COVID-19 PERIOD AND THE CHALLENGES BOTH TEACHERS AND STUDENTS HAVE BEEN GOING THROUGH IN THE LAST TWO YEARS. MOREOVER, THE AUTHORS PRESENT THE CHANNELS OF COMMUNICATION PREFERRED BY TEACHERS (WHATSAPP, FACEBOOK), THE WAY THEY WERE INFORMED, THEN DEALT WITH THE CHANGES THAT OCCURRED IN THE TEACHING PROCESS AND IN THE TEACHER-STUDENT AND TEACHER-PARENTS RELATIONSHIPS. THE STUDY IS BASED ON QUANTITATIVE RESEARCH. THE DATA WERE COLLECTED BY APPLYING AN ONLINE QUESTIONNAIRE TO TEACHERS FROM DIFFERENT SCHOOLS SITUATED IN BUCHAREST AND BACĂU COUNTY. THE RESULTS OF THE STUDY INDICATE THAT DURING THE COVID 19 PERIOD, THE ONLINE TEACHING PROCESS WAS A CHALLENGING ONE, BRINGING TO THE FOREFRONT DIFFICULTIES SUCH AS: THE INFRASTRUCTURE OF ONLINE PLATFORMS (INCLUDING POOR SKILLS IN USING THEM), THE LACK OF AN INTERNET CONNECTION, PROBLEMS WITH PHYSICAL DEVICES, RESISTANCE TO CHANGE AND LACK OF STUDENT-TEACHER FACE-TO-FACE INTERACTIONS. YET, THE ABRUPT TRANSITION TO ONLINE EDUCATION ALSO SHOWED A HIGH LEVEL OF ADAPTABILITY, SO IN THE FUTURE ATTENTION SHOULD BE GIVEN TO ADJUSTING DEFICIENCIES AND FURTHER DEVELOPMENT OF ONLINE TEACHING SYSTEMS.

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**KEY WORDS:** ONLINE EDUCATION, COMMUNICATION, BARRIERS, INFORMATION TECHNOLOGIES, COLLABORATION

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## INTRODUCTION

There is no doubt that the pandemics brought major changes at international level, Romania being no exception. First of all, one could notice major economic changes, running in parallel with social ones – among these, the transformation of the educational system is one of the most prominent. The abrupt shift from a classical educational system, mostly based on in-classroom teaching, to an online environment, both in schools and universities, caused a disruption in the entire educational system, because the actors involved in this process could not adjust their conduct immediately. This change led to chaos and raised many questions on behalf of students, teachers and parents. Marchiş<sup>5</sup> identifies some key-factors that our country confronted since the beginning of the pandemics: poor skills in using computer systems and online platforms, weak infrastructure, lack of skills in online communication and poor experience with using IT devices. To all stated above, one may add the lack of clear and efficient communication between the main actors involved in the teaching process: teachers, students and parents. With no previous experience, all the persons taking part in the education process have learnt on the go what and especially how to run activities (the so-called learning by doing), adjusting to the “the new normal” by using the information they had at that moment.

Secondly, a series of government decisions played a major role in changing the education system: the Decree of the President of Romania no. 195/16.03.2020<sup>6</sup> on the establishment of the state of emergency on the territory of Romania; Order 4020/2020<sup>7</sup> on the derogation from the legal provisions in the field of higher education, during the state of emergency on the Romanian territory; Emergency Ordinance 58/2020<sup>8</sup> on taking measures for the proper functioning of the education system. The purpose of all these regulations was the minimization of SARS COV 2 infection risk, by restricting face to face interactions and by ceasing classroom education and switching to exclusively online learning. The daily reports on the state of COVID infection risk and rate played a major role in organizing the learning activities in every school – many times, these reports, showing fluctuating data, caused chaos, disinformation and led to a poor management of daily learning activities.

As a result of the two aspects stated above, communication and collaboration in the Romanian learning system were damaged. Therefore, the pandemic caused a series of changes in socio-professional relations that had not suffered significant changes before: the relationships between school manager and teaching staff, teachers-students, teachers-parents and students-students have undergone changes. During these 2 years of pandemic, all these relationships have intensified; all the parties involved in the education process felt a strong need for permanent communication, resulting in a new bond: manager-teaching staff-parent-student.

Interactions between relevant actors regarding the teaching process and as well as other relevant aspects from the COVID-19 period happened through different communication channels, such as: phone calls, emails and social networks. One noticeable aspect is the preference for social networks, applications, and platforms, such as: Whatsapp, Facebook, Zoom, Teams and others.

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<sup>5</sup> Marchis, “Covid-19 Crisis–a Wake-up Call for Romanian Higher Education System.”

<sup>6</sup> PREȘEDINTELE ROMÂNIEI, DECRET nr. 195 din 16 martie 2020 privind instituirea stării de urgență pe teritoriul României.

<sup>7</sup> MINISTERUL EDUCAȚIEI ȘI CERCETĂRII, ORDIN nr. 4.020 din 7 aprilie 2020 privind derogarea de la prevederile legale în domeniul învățământului superior, pe durata stării de urgență pe teritoriul României.

<sup>8</sup> Guvernul României, ORDONANȚĂ DE URGENȚĂ Nr. 58/2020 din 23 aprilie 2020 privind luarea unor măsuri pentru buna funcționare a sistemului de învățământ.

Considering all the aspects previously stated, the paper aims to reflect on two fundamental questions:

1. How efficient was the communication process inside learning institutions, during the COVID-19 pandemic?
2. Which is the knowledge gained following these transformations and how exactly can we adjust the communication process in learning institutions?

### **PROBLEM STATEMENT**

According to a UNESCO study<sup>9</sup>, the COVID-19 pandemic has drastically changed the educational framework all over the world, affecting students, educators, parents, in more than 190 countries.

The Economic Commission for Latin America and the Caribbean (ECLAC)<sup>10</sup> argues that the crisis of COVID-19 proved its deep negative effects on social sectors, especially on health and education, leading to inequities and growing social resentments. The main effect of the pandemic on education is the transfer from a classroom type of education to a remote/online one, even in institutions in which such online communication channels were not previously used<sup>11</sup>.

Online teaching defines itself as partially or totally taking place in electronic environment, using IT technology and devices. On the other hand, the online teaching process involves the participation of both students and teachers in live sessions, offering the possibility of interactions, debates and immediate feedback regarding the content<sup>12</sup> and materials used<sup>13</sup>.

At the European level, there is a strong support for online education, especially in universities – the Council of the European Union pleads in favor of this form of education, considering that digital technologies are suitable for education, training and learning<sup>14</sup>. In contrast, before the pandemic, in Romania, online teaching was barely used at all levels, which led to major obstacles in implementing it during this education crisis.

The National Strategy on the Digital Agenda for Romania 2020<sup>15</sup> makes an upsetting finding – teachers' basic training, on using ICT during classes, is poor, which means they cannot make use of technological advancements, thus impeding online education. Teachers' training on ICT usage is not only poor, but also lacks consistency.

A study from National Centre for Policies and Evaluation in Education<sup>16</sup>, published in Romania, shows the lack of a personal computer, in the case of 25% of pupils, represents a major setback in online learning. Moreover, in rural areas, access to Internet represents a challenge for both students and teachers. Because of the poor Internet connection, interruptions are frequent in the course of the education process.

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<sup>9</sup> UNESCO, "COVID-19 Educational Disruption and Response."

<sup>10</sup> CEPAL, "Latin America and the Caribbean and the COVID-19 Pandemic."

<sup>11</sup> Zarzycka et al., "Distance Learning during the COVID-19 Pandemic."

<sup>12</sup> Zarzycka et al.

<sup>13</sup> Sadeghi and Moslehpour, "Comparison Classical Method of Education and Modern Web-Based Distance Learning System (WBDLS)."

<sup>14</sup> THE COUNCIL OF THE EUROPEAN UNION, "COUNCIL RECOMMENDATION of 22 May 2018 on Key Competences for Lifelong Learning."

<sup>15</sup> Ministerul Pentru Societatea Informationala, Strategia Națională privind Agenda Digitală pentru România 2020.

<sup>16</sup> CENTRUL NAȚIONAL DE POLITICI ȘI EVALUARE ÎN EDUCAȚIE - UNITATEA DE CERCETARE ÎN EDUCAȚIE, "ȘCOALA LA DISTANȚĂ ÎN PERIOADA PANDEMIEI COVID-19."

Therefore, multiple authors identify many challenges during the pandemic regarding online teaching and learning processes: lack of socialization, interaction between students and students-teachers<sup>17</sup>; access to digital infrastructure, digital abilities demanded by online platforms, inappropriate content for the new way of working<sup>18</sup>. Another author identifies the lack of high-speed internet and good technology, the lack of support services<sup>19</sup> as a general problem in what concerns the online learning.

In terms of parents-children relationship during the pandemic, a study shows that small children's parents could not support their children during their classes and even more, they faced troubles like: children's poor concentration, inability to learn online and limited understanding of the topics<sup>20</sup>. A teaching staff's perspective is revealed by Fauzi et al<sup>21</sup>. who state that during the pandemic teachers were deprived of networking opportunities, they faced difficulties in planning, teaching and evaluation of learning and the collaboration with parents was challenging.

A survey launched in August 2020 by the National Center for Policy and Evaluation in Education - Educational Research Unit<sup>22</sup> reveals that, in our country, the effective ways of communicating/teaching during the pandemic include the following: applications like WhatsApp, Facebook/Messenger, emails and phone calls. Furthermore, all these data are supported by findings from Mahyoob<sup>23</sup> who argues that WhatsApp and emails are the most used applications when it comes to receiving/sending homework and other assignments. In addition to these, another finding from the above survey highlight that the teaching process has been assisted by online platforms like: Google Classroom, Microsoft Teams, Moodle, Zoom, Edmodo. Supporting effective learning has been achieved by making use of interactive, online learning applications like Kahoot, Padlet or Livresq.

The pandemic had not only effects on educational levels, but also on social and emotional ones. An enquiry from the University of Medicine and Pharmacy from Craiova<sup>24</sup> shows that students exhibited signs of physical and mental stress during online education, like: eyes pain, fatigue, followed in some cases by extreme exhaustion, poor concentration or lack of creativity, a feeling of constant loneliness. Anxiety and depression, as part of the emotional impact of seclusion and online learning, were also observed in the cases of students from France<sup>25</sup> or from the Faculty of Engineering (Sibiu, Romania)<sup>26</sup>.

One can argue that the pandemic deeply affected society at different levels: economic, social and psychological. As part of these effects, education and training have been subject to drastic changes – from a predominantly classroom type of learning (face-to-face), where

<sup>17</sup> Raboca and Cotoranu, "The Efficiency of the Online Academic Teaching Process during the Pandemic COVID-19."

<sup>18</sup> Gavriluță, Dalban, and Ioan, "Educational, Emotional, and Social Impact of the Emergency State of COVID-19 on Romanian University Students."

<sup>19</sup> Burns, "Distance Education for Teacher Training: Modes, Models, and Methods. Education Development Center."

<sup>20</sup> APRIYANTI, "THE PARENTS ROLE IN GUIDING DISTANCE LEARNING AND THE OBSTACLE DURING COVID-19 OUTBREAK."

<sup>21</sup> Fauzi and Sastra Khusuma, "Teachers' Elementary School in Online Learning of COVID-19 Pandemic Conditions."

<sup>22</sup> CENTRUL NAȚIONAL DE POLITICI ȘI EVALUARE ÎN EDUCAȚIE - UNITATEA DE CERCETARE ÎN EDUCAȚIE, "ȘCOALA LA DISTANȚĂ ÎN PERIOADA PANDEMIEI COVID-19."

<sup>23</sup> Mahyoob, "Challenges of E-Learning during the COVID-19 Pandemic Experienced by EFL Learners."

<sup>24</sup> Dinu, "Studiu Privind Impactul Formei de Învățământ În Mediul Online al Studenților UMF Craiova."

<sup>25</sup> Husky, Kovess-Masfety, and Swendsen, "Stress and Anxiety among University Students in France during Covid-19 Mandatory Confinement."

<sup>26</sup> Cioca and Bratu, "Sustainable Education in the Context of COVID-19."

students and teaching staff had direct interaction, to a remote/online learning, which brought a change in the learning paradigm.

The pandemic represents an unprecedented event in modern education, bringing drastic changes in the educational system. These changes meant adjusting to a new paradigm and to technological devices that facilitate learning. Further improvements and adjustments to online learning are needed so that the negative effects stated above decrease. The pandemic caught the world off guard; adjustments were performed on the go. This article's purpose is to shed light on what were the most troublesome areas during the offline to online transition in education, so that decision-makers and education practitioners can focus on highly effective adjustments, in case a similar situation should occur again.

### **PROBLEM STATEMENT**

This paper aims at finding out which where the main issues regarding communication during the COVID-19 pandemic between teachers and their students and between teachers and students' parents.

For this, we used an open-answer questionnaire that we analysed using Natural Language Processing techniques.

In terms of teacher-student and teacher-parent communication, we aim at providing an overview of the main channels through which teachers transferred tp their children or to their guardians information about the teaching process, and whether there are significant differences in the channels used between rural and urban areas.

### **RESEARCH QUESTIONS/ AIMS OF THE RESEARCH**

This paper aims at finding out which where the main issues regarding communication during the COVID-19 pandemic between teachers and their students and between teachers and students' parents.

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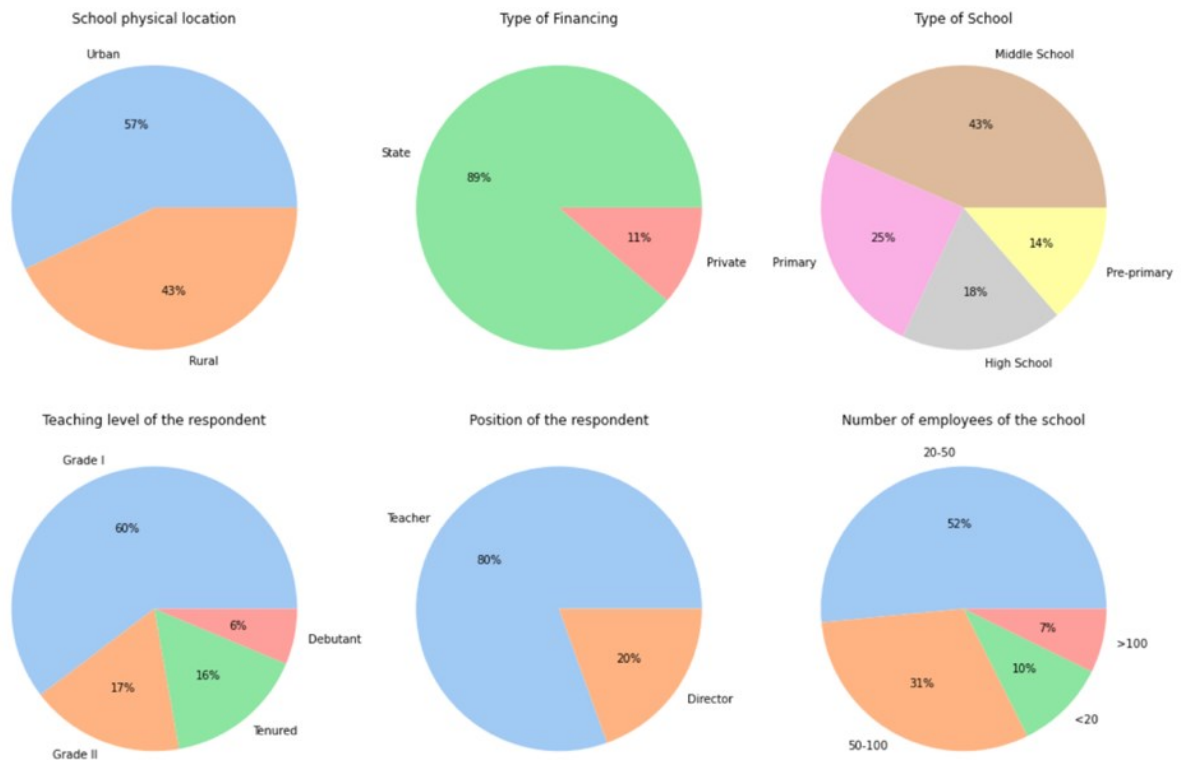
### **RESEARCH METHODS**

Data analysis was conducted using Python, with the most common libraries used in data science called numpy and pandas for data manipulation and matplotlib and seaborn for data visualization. The word clouds were constructed using Amueller's WordCloud python library with the list of Romanian stop words taken from the list provided by stopwords.net.

The main tool used in order to conduct this research was the Questionnaire, which was applied to a number of 522 teachers, out of which 298 teach in urban schools and 224 teach in rural schools. Other details about the data distribution in terms of independent variables can be seen in Figure 1.



Figure 1. General Response Overview



## FINDINGS

To better understand the problem in question, we asked the respondents three open-ended questions to get a general overview of the main issues that stood in the way of a good flow of information while teaching effectively (both online and offline) and while passing important pieces of information about the teaching activity to the parents or to the students. Because we used open ended questions, we used the word clouds techniques to assess the most common issue areas arising.

As we can see below in figure 2, there were a lot of issues with effective online teaching, ranging from the lack of an internet connection ("lipsa internetului" or "lipsa semnalului"), problems with the physical devices ("lipsa dispozitivelor", "echipamente") and different other issues like the lack of knowledge in using electronic devices and software, a general lack of interest coming from both parents and students, a lack of adaptation, the toughness of correctly assessing a student's performance, etc.

Figure 2. Challenges in communication while teaching<sup>27</sup>

As can be seen from Figures 3 and 4 below, apart the technical connectivity problem, the most common issue seemed to be lack of effective communication with parents. In the world cloud in this figure we tried to get a grasp on which where the biggest issues while communicating important information with parents during the COVID-19 pandemic, as assessed by the different teachers.

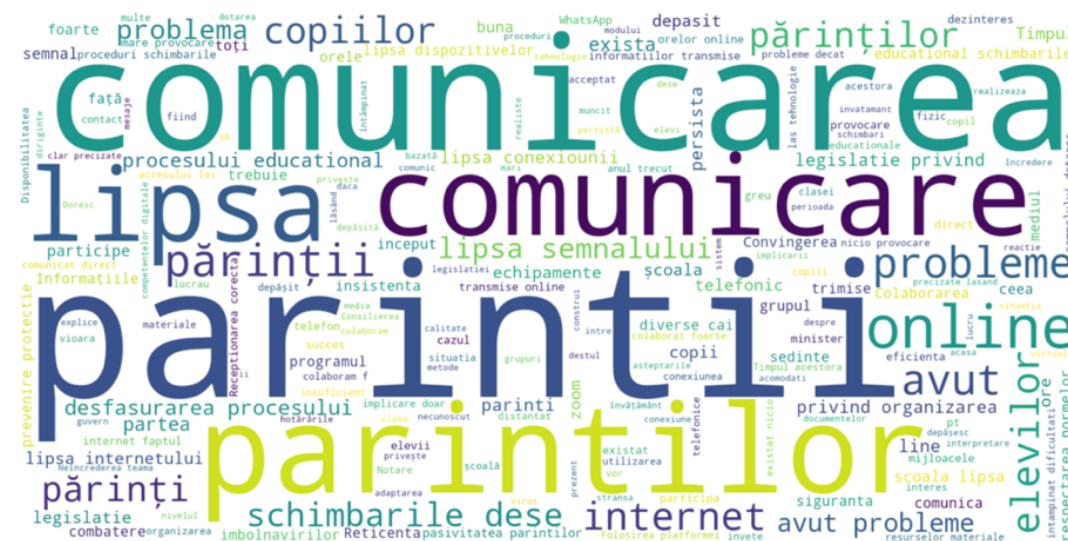
Figure 3. Challenges in communication with the parents<sup>28</sup>

Figure 4 conveys the teachers' assessment regarding the main difficulties they had in sharing information with students. It is clear that most of the difficulties arise from a poor

<sup>27</sup> Question: What was the biggest issue you faced when teaching online in the COVID period? Please tell us if you managed to overcome it (open answer).

28 Question: What was the biggest issue you faced when in your collaboration with the parents in this period?  
Please tell us if it persists or how you managed to overcome it (open answer).





E-mail	2.1
Live Communication	20.3
No direct communication to the parents	0.2

If we take all these things into consideration, we could state that, usually parents are the ones who have issues with online communication, and not children, fact that could be attributed to a multitude of reasons, from a general lack of interest, to a serious inability to use technology.

Of course, we might be tempted to think that if we take into account the urban/rural split of the environments, parents from rural areas might be more inclined to have a lower ability of communication by electronic means, but a chi-square test analysis shows that there are significant differences between rural/urban parents only in the case of e-mail [ $\chi^2 (4) = 21.543, p < .01$ ] as a source of communication, which seems to also be true in the case of communication to the students [ $\chi^2 (4) = 19.335, p < .01$ ].

## CONCLUSION

In conclusion, we would like to point out that, contrary to popular belief, the main issues regarding online learning and the online transmission of information between teachers and students in high schools are not related to technical issues, such as the lack of devices or a lack of internet connection, but instead the main causes for the difficulties encountered were actually of human nature.

Parents seemed to have great difficulties in using technology and communicating with teachers during the COVID-19 pandemic, even in cases where the student-teacher communication was deemed as good/ satisfactory. Further qualitative analysis is needed in order to find out what determined these perceptions among teachers, if parents also entertain them and through which interventions they can be addressed.

By far the most used methods of communication were social media and other messaging applications like WhatsApp, which indicates a low level of formality in the online communication process and also raises red flags related to privacy, online “noise”, reliability, etc. Surprisingly, both in the case of teachers to students communication and in the case of teachers to parents communication, there were no significant differences between rural and urban areas. Due to rural areas’ lower Internet connectivity, this piece of data further supports the idea that it was not the technical, but the human side of the equation which led to issues in the online teaching process, because parents living in rural areas seem to be as well trained in using technology as parents that live in urban areas.

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