

THE TRAINING AND DEVELOPMENT OF DIDACTIC COMMUNICATION COMPETENCIES IN AND THROUGH A VIRTUAL ENVIRONMENT*

Florentin Remus MOGONEA¹

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Abstract

The purpose of this study consists in the (partial) inventory of the digital competencies that general education teachers must have. Digital competencies represent integrated systems of knowledge, abilities, skills, attitudes and values, formed and developed through learning, which an individual has and which can be mobilized to solve various problems that arise in the process of collecting, storing, processing and disseminating information through information and communication technologies.

In the 21st century, teachers must have digital competencies in order to face the challenges of the information age. The need to have a certain level of digital skills has two facets for teachers: an integrating part of professional competencies; incentive and catalyst for the development of students' digital skills, as a prerogative for their employment in the field of work.

The areas of competency were determined in accordance with a set of national and international documents, belonging to the field of transversal digital key competencies from the framework document of the European Parliament and the European Council of 18th December 2006, regarding the key competencies for lifelong learning. From the wide spectrum of digital competencies, the ones selected and included in this document were those that were strictly necessary for a teacher to carry out professional activities with.

Key words: *Didactic communication competency; Digital competencies; Digital education; Online education; Digital natives.*

1. The didactic communication competencies of the teacher

The term "competency" has become a frequently debated topic these days. Different programs offer the opportunity to be competent in different fields of activity. By consulting the specialized literature, we can easily find out that there is

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¹ Associate Professor PhD, Teacher Training Department, University of Craiova, Romania, email-address: fmogonea@yahoo.com

no agreement regarding the fundamental defining notes of the concept of "competency".

Beyond the semantic and nuanced differences, we appreciate, however, that the current pedagogy, without neglecting the classical approach to the finalities, is a pedagogy focused on and in favour of competencies. The didactic competencies are the key elements of the professional training process of the future educators. In this sense, the communicative competency plays an absolutely necessary role.

Sadovei (2008 a) states that the term didactic communication competency is a set of communicative behaviors for elaborating/ transmitting/ evaluating the didactic speech and ensuring productive communication networks in an educational context.

If we refer to the opinion of the researcher Cerghit (2008), we think that what is meant by didactic communication competency includes: the ability of the teacher to use language knowledge in order to state something, explain, clarify, ask, analyze, interpret, ask, etc.; the ability to build correct grammatical structures and use them in didactic communication, i.e. to give them functional value, to assign meanings and significance to them; the ability to integrate cognitive, affective, volitional factors in the context of communication; to have knowledge about the development, construction and logical functioning of argumentative oral and written communication; to have knowledge about the role of gestures, facial expressions, silence, the appropriateness of smiling, etc. (of nonverbal behavior); the ability to present orally and to listen, understanding questions and opportunities: when? where? with whom? about what? in what way? to use the language.

In our view, the success achieved in the school environment is also based on the assimilation of the values of didactic communication competency. In this sense, according to some authors (Sadovei, 2008 b), the values of didactic communication competency are manifested at the discursive level through: linguistic normativity, coherent and intelligible discourse, pedagogical language, discursive strategies, rational persuasion, fidelity and scientific relevance, personalization, the convergence of languages at the relational level: cooperative style, affective persuasion, distribution of attention, behavioral flexibility, empathic conversation, emotional balance, affective expressiveness, positive feedback.

The effort to build competencies is placed at the level of the following variables (Păun and Potolea, 2002): *scientific* (abilities to use information, intelligence, experience, decisive behavior, creativity, operativeness and mental transfer; managing influences, planning, design, decision, organization, coordination, administration; etc.), *psychosocial - relational* (of role, communication, strength and authority, style, enthusiasm, understanding, friendship, etc.), *managerial* (influence management, planning, design, decision, organization, coordination, administration), *psycho-pedagogical* (personality formation/ construction through content, accessibility, understanding and access to the universe of the students, educational creativity, empathic capacity, pedagogical tact, methodical spirit, clairvoyance, etc.).

Even an uninteresting message can be optimally received if the teacher has, and above all, uses his communicative competency and is aware of the fact that this competency must be constantly educated and perfected (Mitrofan, 1988).

The concept of *communicative competency* is of great interest in the pragmatics of education, whose concerns are primarily oriented towards the direct action of communicating. The ability to communicate in the case of education consists in the possibility to interact with the educated, to use signs and symbols whose meaning is conventionally established (Ezechil, 2002).

Ezechil's study cites the points of view of Ch. Morris and R. Carnap (Ezechil, 2002, p. 100), regarding the determinations that satisfy the communication situation. There are three of them: *syntactic*, centered on the problem of information transmission (codes, channels, capacities, noises); *semantics*, with an emphasis on the issue of meanings and the need to establish semantic conventions between the partners of a communication relationship; *pragmatic*, concerned with the extent to which communication affects behavior and is objectified in observable manifestations.

Capturing the student in the relationship does not depend only on the teacher's will and ability to "call" the interlocutor to dialogue. In reality, a lot of physical, physiological, psychological, psychosocial, linguistic, semantic, cultural, i.e. a multitude of other conditions that give specificity and uniqueness to any interpersonal relationship interpose.

2. The training, development and practice of digital competencies for didactic communication

Digital competency – comprises the set of knowledge, skills, attitudes, including strategies and values, needed to use technology and digital media in performing tasks, in solving problems, in communicating, in managing information, in collaborating, in creating and sharing content, as well as in building knowledge in an effective, appropriate, critical, creative, autonomous, flexible, ethical, reflective for work, leisure, participation, learning and socializing way. As a whole, digital competency refers to the formation of skills and the ability to implement a certain set of tools and/or applications.

Digital competency is the concept that describes the skills of individuals related to technology. The convergence of information and media channels can influence people's judgment of credibility, confusing the user at different levels: for example, let's think of the "leveling effect" (Burbules, 1998), which actually means the flattening of the value of information, caused by the search engines that present the query results on the same page, joining commercial and non-commercial sites, institutional and private sites.

The objective is not to recreate a robust educational ecosystem, but to provide temporary access to training and easy-to-access training supports. When we understand ERT (ERT – Emergency Remote Teaching) this way, we can separate this kind of training from "online learning". Distance learning involves not only online learning, but also the individual study of students by accessing workbooks,

handouts, textbooks, dictionaries, encyclopedias, etc., learning programs supported by television or radio.

If we were to describe this distance learning, we should first of all see it from a projective perspective, as a way of reflecting on the ways, methods and means of the delivery of training, adapting to the ever-changing needs and limited resources and not as an essentialized approach to standard training. Of course, due to the time urgency, the quick steps that are necessary in the context of ERT can diminish the quality of the courses offered.

In the case of education, the training and development of digital competencies will be carried out both within the basic subjects and within the optional curricular components (example: Games through the computer). We can identify non-formal and informal contexts for learning how to use ICT: visits to institutions in the community where information and communication technologies are used (banks, photo studios, businesses, town hall, shops, etc.), visits to technical museums or exhibitions of specialty, audio or video recording on the occasion of special events (visits, celebrations, exhibitions, etc.) with the help of various digital devices and software, educational computer game contests, etc.

There are learning resources and applications that the teacher can create or already existing resources in the form of presentations, lessons, handouts, pictures and videos that we can use both during live lessons and for homework. Here the list is longer and includes applications such as ASQ, Kahoot, Quizziz, Wordwall, Padlet, Twinkl or Digitaliada, as well as sources of inspiration for movies, homework and individual study.

Apostolache (2022) proposes a design model for digital instructional-educational activities, carried out online, mentioning the stages that must be completed by the teacher, contributing to the development of his planning skills: 1. The formulation of the educational purposes; 2. The analysis of the human and digital resources; 3. The digitized organization of the contents; 4. The Digital organization of strategies 5. The evaluation of the digital didactic activity.

If we start from what Marc Prensky (2021) says that instructors are digital immigrants who speak an outdated language from the pre-digital age and struggle to teach a population that speaks a new language – the digital natives (he introduced the concepts of digital native and digital immigrant in 1996 to define people born around technology, people who grew up using technology without needing to adapt to it, compared to others, who had to adapt to technology as adults (Logofătu, 2021).

This adaptation is made according to the needs of the students, provided that the objectives in the curriculum are achieved. All these must be done so that the student does not feel that he is making an extra effort to learn. For this, the teaching staff must have a series of digital competencies. Through the Order of the Minister of Education 4150 of June 29, 2022 (<https://legislatie.just.ro/Public/DetaliiDocument/257484>), the digital competencies framework for the education professionals (DigCompEdu) was approved. This framework is addressed to all teachers at all levels of education. According to the already mentioned order, the DigCompEdu framework (<https://publications.jrc.ec.europa.eu/repository/handle/JRC107466>) establishes 22

key competencies, organized in 6 fields, with three levels (basic, intermediate and advanced):

- Domain 1 is addressed to the professional environment in a broad sense and aims at the use of digital technologies by teachers in their professional interactions with colleagues, preschoolers/ pupils/ students/ other people in the learning process, parents and other interested parties, for their own professional development and in the interest of the organization.

- Domain 2 addresses the competencies required for the effective and responsible use, creation and sharing of digital resources in the teaching and learning process.

- Domain 3 refers to the use of digital technologies in the teaching and learning process.

- Domain 4 refers to the use of digital strategies to improve assessment.

- Domain 5 aims to capitalize on the potential of using digital technologies in the development of student-centered teaching and learning strategies.

- Domain 6 details the pedagogical skills needed to facilitate the acquisition of digital competencies by preschoolers/ pupils/ students/ other people in learning situations (Order 4150/ 2022, <https://legislatie.just.ro/Public/DetaliiDocument/257484>). Here you can find the complete list of digital competencies of pre-university teachers, referred to in the European framework for the digital competencies of teachers – DigCompEdu, integrated into the Romanian legislation, in order to approve the digital skills framework of education professionals.

Istrate (2022), resumes their inventory also available at https://eos.ro/wpcontent/uploads/2022/10/eos_cadrul_european_pentru_competent_a_digitala_a_profesorilor_-digcompedu_fin_002.pdf.

The initial and continuous training of the teaching staff, in the spirit of communicating in the virtual environment, is one of the most important factors influencing results of the students. These training programs must consider the following elements: being content-centered, active learning, coherence, sustainable duration and collective participation (Ilie, 2020).

For other authors (Gremalschi 2015), the standards of digital competency for teachers in the pre-university system are (according to the Standards of digital competency for the teaching staff, MECC, Order no. 862 of 07.09.2015): digital communication, information management, creation of educational digital contents, implementation of school management applications, educational content management systems, the use of digital equipment in education and compliance with ethical and legal norms in the digital space.

Other numerous sets of targeted digital competencies, in the Romanian legislation, can also be found at: <https://legislatie.just.ro/Public/DetaliiDocument/257484>, <https://legislatie.just.ro/Public/DetaliiDocumentAfis/257563>, online, as well as those inventoried by other authors (Albulescu, Catalano, 2019; 2021; Păun, 2022).

The field of ICT is a very dynamic one, the speed of development of new tools and opportunities being very high, and the range and complexity of the skills

required to be a pedagogue in the 21st century is so great that it is unlikely for an individual to possess them all or to be able to develop them to the same extent at certain moments of time.

Consequently, teachers need to constantly update their competencies as well as adapt them, and this requires critical evidence-based attitudes that enable them to be accountable for the students' outcomes.

3. Experimental design. Brief presentation of the results of a pedagogical research

Argument

The crisis situation in the spring of 2020, caused by the COVID 19 pandemic, revealed problems already existing in the society, which will certainly contribute to a radical change in people's mentality. In this context, a radical change of the educational system is being felt, in order to make the educated more aware, more flexible and better prepared for their future life with its surprises.

The purpose of the study was not so much to collect information and statistical data regarding the problems of didactic communication, especially during the period of organizing distance learning, but rather to analyze the good practices of different educational actors, and based on them, to propose ways of improving the didactic communication at Bucovăț Secondary School, both in times of crisis and in general.

The objectives of the research aimed, among others: to find out the opinions of the students, teachers and parents regarding the communication barriers from the perspective of the phenomenon of digitization of education; to identify the barriers of didactic communication in the online environment by using different ways and platforms of online communication; to measure the quality of teacher-student communication offered in different situations of educational communication; to identify weak points in online didactic communication and ways to improve them.

General hypothesis: It is assumed that there are certain factors that can produce distortions in the online didactic communication. Therefore, if the primary school teacher/ preuniversity teacher identifies the factors and communication blockages during the online didactic activities and not only, then the digital competency of the schoolchildren, but also of the teachers involved, can be optimized and the ways of didactic communication and relating in the virtual environment can be improved.

Sample: 70 preschool teachers and preuniversity teachers (rural and urban) (the investigated sample was much larger, including students from the preparatory class to the 8th grade, but the results and interpretations of their answers constitute discussions for another study).

Research methods and tools: the anamnesis, the study of personal documents, the observation method (*systematic observation method*), the survey method (the working tool is the questionnaire/ questionnaires applied to teachers, students and parents), the test, the pedagogical conversation, the statistical methods (the statistical techniques most often used were: frequency tables and distribution graphs; the most well-known forms of graphic representation are the histogram and the frequency

polygon; the calculation of some statistical indices with the aim of capturing general characteristics or trends; the extension of the findings over the entire population, calculating the size of error; comparing the indices of the main sample with those of the control sample in order to ascertain the differences and see which variables are due to them).

Online educational resources: Thus training and learning based on the Web (Web-based learning) offers the students: interactivity (the possibility of exchanging views, opinions, materials), the multimedia environment (the materials present at least two multimedia elements: text, graphics, audio, animation, video, etc.), the open environment (you can access different Web pages or applications), synchronous and asynchronous communication environment, independence from equipment, distance and time (the students can use any computer connected to the Internet and can communicate with people from any corner of the world).

Among the educational resources in the online environment that benefit the student and the teaching staff are: Wordwall, www.jocjocjoc.ro, AcademiaABC – an Online education platform, Live Worksheets - online interactive worksheets, Nearpod – a platform for interactive lessons, educational games and assessment, popplet- conceptual maps for the primary school students, etc.

Regarding the submission and completion of questionnaires: in the case of questionnaires addressed to teachers: approximately 40% of the answers were received through the online platform (Google Forms), and 60% through direct questionnaires; in the case of questionnaires addressed to students and parents: approximately 45% of the answers were received through the online platform, and 55% through direct questionnaires. Data collection was carried out throughout 2022.

The results obtained from the teachers' survey are centralized in the following graphs and, as there will be seen, most of the teachers have real communication skills, which help them in the didactic communication process, both in the traditional one and at home. The teachers interviewed appreciate that they have adapted to the conditions to some extent, in percentage of 65%, to a great extent in percentage of 25%, to a very small extent 7% and to a small extent 3%.

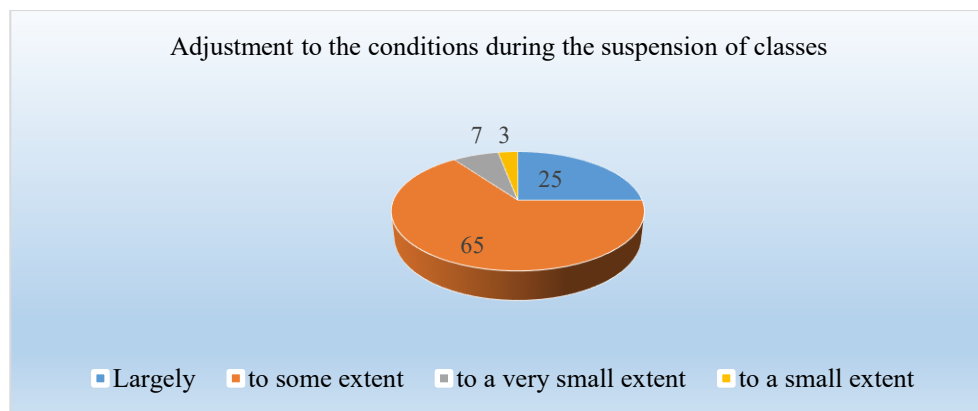


Figure 1. The degree of teachers' adjustment during the pandemic

In the second criterion of the questionnaire applied to the teaching staff, 56% believe that it offers the opportunity for personal and professional development, through the use of digital technology, 15% support the students in maintaining a learning pace, 10% believe that it offers comfort, both for the students and teachers, 14% believe that online learning activities create an impersonal educational climate, unlike classroom learning, and 5% believe that the costs of teaching materials are lower.

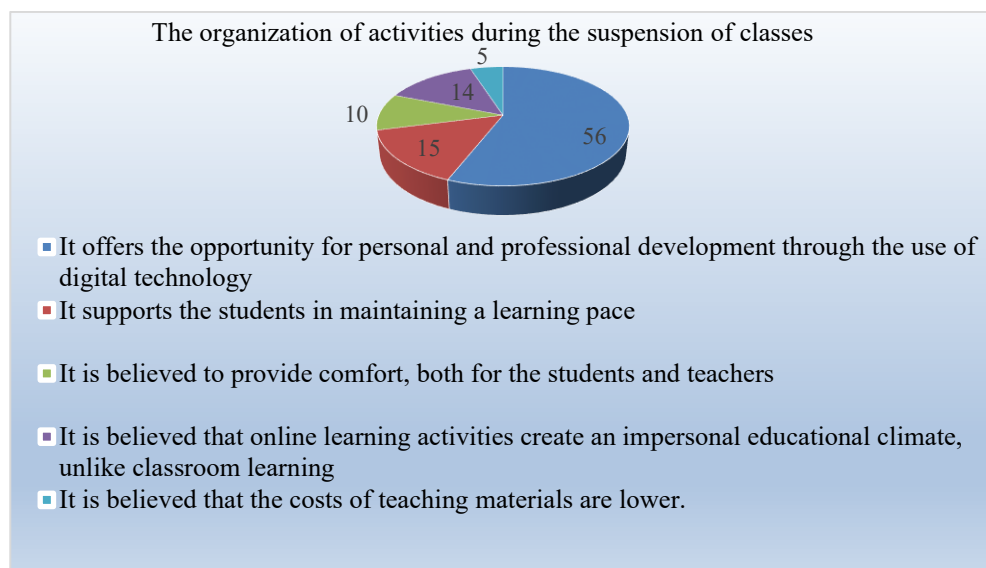


Figure 2. Opportunities of the virtual environment during the suspension of classes

To the question: "To what extent did the activities you carried out during this period help you feel better?" To a largely great extent, they appreciate that they looked forward to being able to interact with the students in face-to-face learning activities, to a great extent, they appreciate that they were able to do interesting online activities, and they are satisfied with the way the online learning activities are carried out, to some extent they appreciate that they are ready to use digital technology, for online teaching activities and they are comfortable interacting with the students in online activities, to a very small extent they appreciate that they find it easy to use online learning activities, and to a small extent they appreciate that they enjoy interacting with the students in online learning activities.

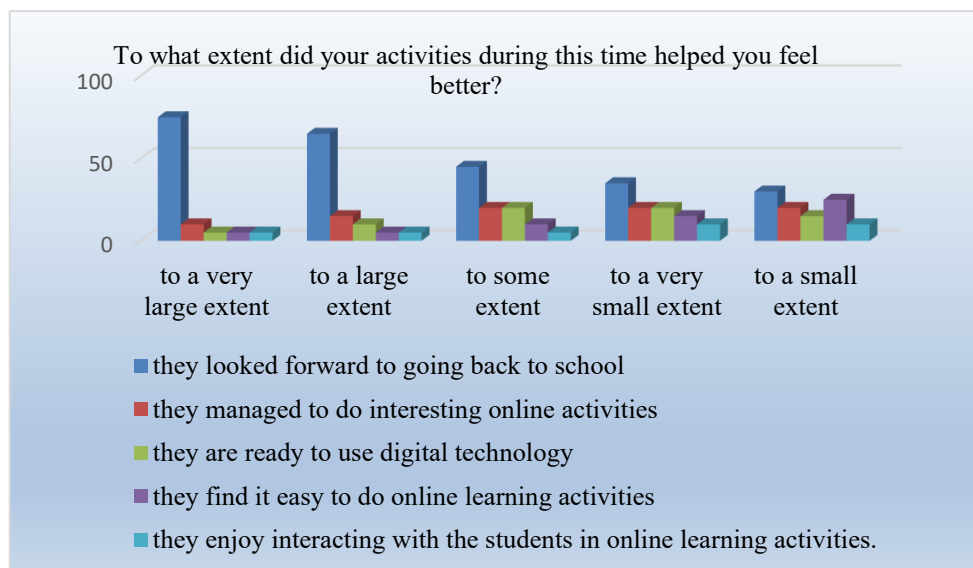


Figure 3. Behaviors displayed by the teachers during the suspension of classes

To the question: "During this period, to what extent have you thought about the following aspects:" the respondents considered to a great extent to develop their digital skills according to the current situation and that it is difficult for them to work with the students using only digital technology, to a large extent they answered that the exclusively online school is only a temporary solution, to some extent they answered that they wanted a vacation, but not to spend it only at home and that they missed face-to-face meetings with friends and colleagues; to a very small extent they thought it was difficult for them to deal with work and family tasks during this period and to a small extent they considered that they enjoyed this period, they had more time for themselves.

When asked if there are communication barriers between teachers and students, the respondents considered that to a very large extent there are didactic communication barriers, in percentage of 58%, to a large extent they thought there were didactic communication barriers, only 25% of the respondents, to some extent they thought there were didactic communication barriers, in percentage of 7%, to a small extent only 6% thought there were obstacles in communication and to a very small extent (almost none), only 4% of the respondents.

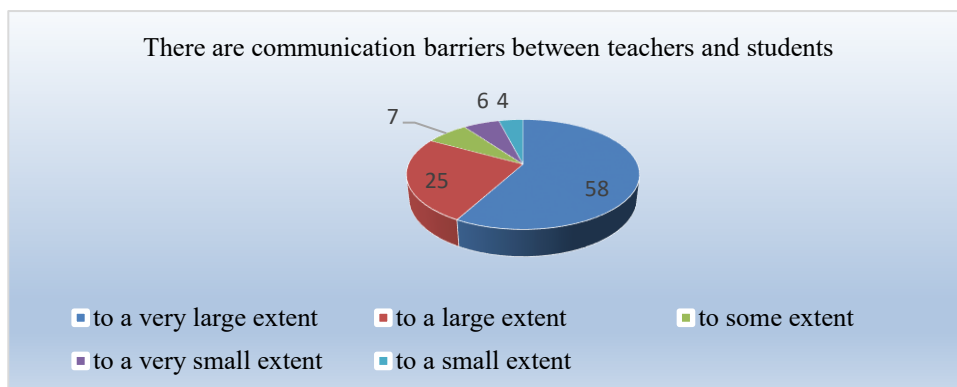


Figure 4. The range of communication barriers between teachers and students in the online version

Therefore to the following question: "Which of the following statements do you consider to be barriers to didactic communication"?:

- 31% of those interviewed believe that the misinterpretation of messages by the impossibility of receiving them to the end due to connection problems, that the poor Internet connection and poor ownership of electronic tools/ equipment is the main cause of message distortion, that the students' misunderstanding of the minimal response or encouragement to continue expressing their own ideas are communication blockages,

- 32% of the responses received consider that attention decreases over time (class, semester) in relation to the information/ knowledge transmitted by the teacher, the lack of interactivity, the absence of dialogue or questions; the installation of fatigue and disadvantaged families not coping with changes are causes of poor didactic communication,

- 26% of the teaching staff believe that the misunderstanding of the message; the time allocated for lesson preparation by the teachers; the students' interest is on the decline if we fail to maintain it; the feelings, emotions, experiences behind the camera; the feedback provided; they constitute blockages in the harmonious communication with the students and

- 11% of the respondents believe that a continuous search for solutions; that video games transformed into learning tools and that students exposed to technology for too long are blockages in the didactic communication.

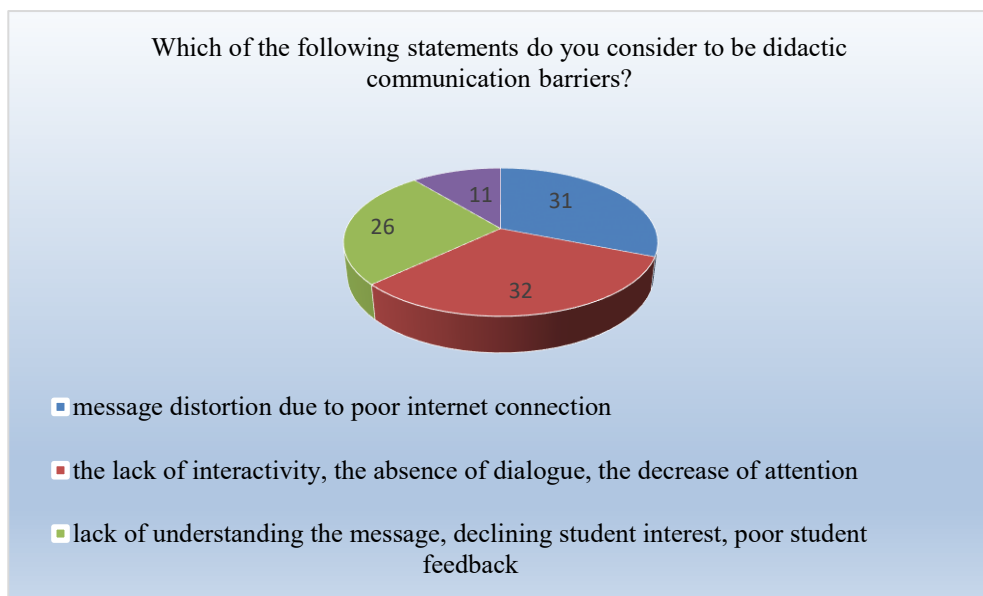


Figure 5. Possible barriers in the virtual teacher-student communication

To the question: "In order to prepare the online learning activities:" the respondents believe to a great extent that they plan the learning activity so that it is less than the face-to-face learning activity, to a large extent the online assignments are not more or more complex, compared to the tasks given in the class activity, to some extent they give feedback to the students for the completed tasks and send in a due time, the schedule of activities for each week.

The most frequently used applications used by the teachers, parents and students for the online communication and learning activities are:

- WhatsApp, Facebook/ Messenger and video conferences through the Zoom, Google Meet, Skype applications in percentage of 92%;
- for the online learning activities, the Google Classroom platform was mainly used in a percentage of 91%;
- for the construction of didactic cards or games aimed at developing didactic communication, different applications or sites were used: Wordwall, JOC, JOC, JOC.ro, AcademiaABC - Online education platform, Live Worksheets - online interactive worksheets, Nearpod - platform for interactive lessons, educational games and assessment, popplet - concept maps for the primary school students, etc. in percentage of 86%.

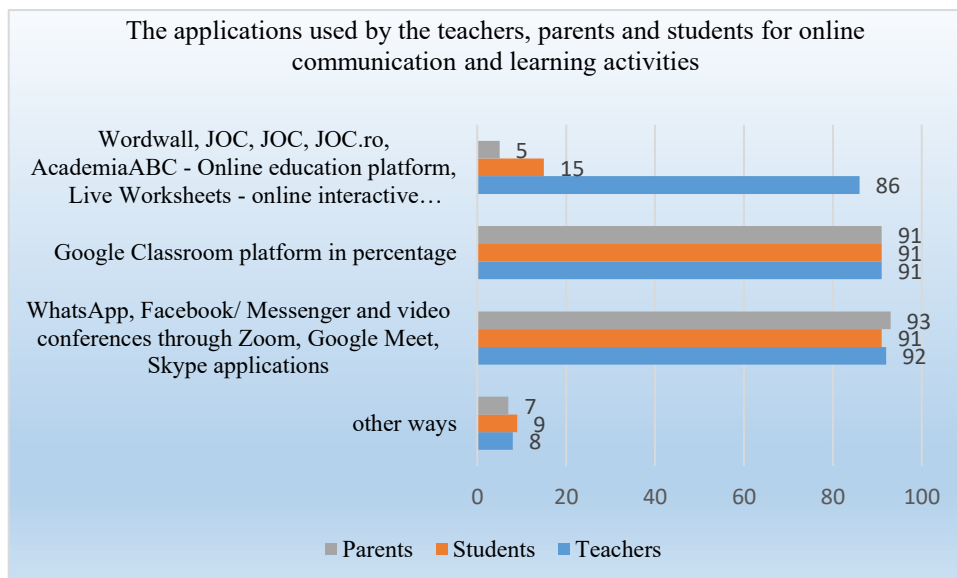


Figure 6. Applications frequently used by the teachers, parents and students in online communication

The difficulties faced by the teaching staff involved in carrying out online learning and communication activities with the students are:

- the current professional training does not exactly correspond to the requirements of the Computerized Educational System,
- the use of modern methods of acquisition and processing of data from practical applications are necessary,
- making a permanent feedback of learning but also of didactic communication, IT means do not meet the current requirements,
- continuous connection to an internet network,
- low student motivation towards learning, etc.

To the question: "Do you consider that, after returning to school, it would be useful for online learning and communication to remain possible in certain situations?" teachers responded to a very large extent that online learning and communication remain possible in certain situations, and to a small extent it would not be useful in various school activities.

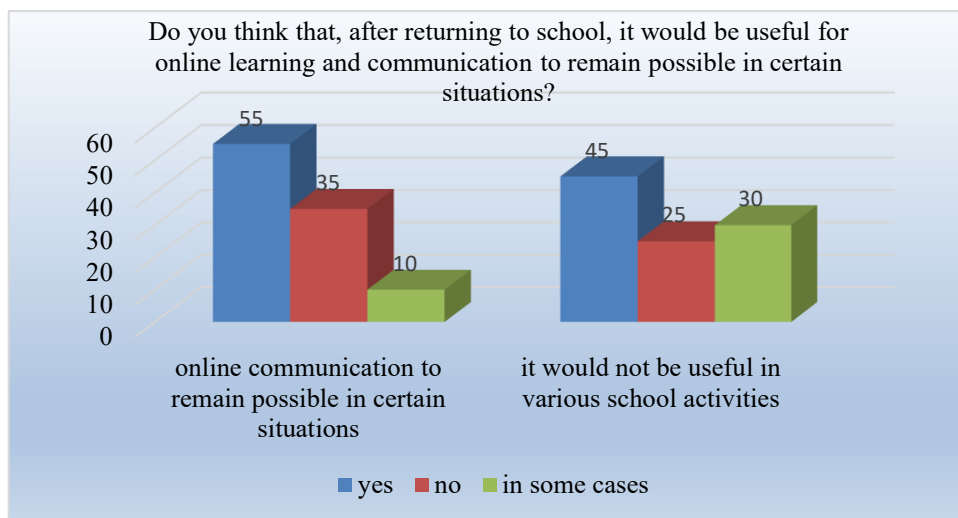


Figure 7. Possibilities of hybrid communication, in the post-pandemic period

The opinions of the teaching staff involved in the survey are divided: the majority of them believe that face-to-face communication is very important in the education process, constituting a prerequisite for language development in students, and another part of them do not deny the important role that digitization didactic communication has, because in certain situations it connects the elements of didactic communication.

4. Conclusions

In conclusion, at the level of the teaching staff, the elements that are able to make a substantial contribution to increasing the efficiency of the teaching-learning process include concerns about the ability to design, lead and realize the instructional-educational process as an act of communication, in the virtual environment.

The digital competencies acquired during the suspension of classes are of real help for projecting activities in online education, by using interactive whiteboards, video projectors, the students interacting and working together to solve tasks.

We believe that computer teaching aids represent an effective communication and behavioral management system, even if it is not accompanied by other rewards for students. Computer teaching aids can be used for effective communication between teachers and parents, by providing immediate feedback, the students' behavior during the school program can be shaped.

The transformation of the educational process and the evolution towards a digital school presupposes ensuring access to administrative solutions for the management and teachers, transparency for the parents and digital study tools for the students and the teaching staff, in an environment that allows collaboration and effective communication between all parties involved.

But the communication channels in the virtual environment developed during the pandemic and post-pandemic for most teachers (as well as for students and parents)

remain open, because this way of communication has a short time to transmit information. This is the future of education in Romania and in the whole world.

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