

The Impact of the Online Environment on Academic Learning and Communication

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Abstract

Keywords:

online communication; academic learning; challenging environment; motivation; socio-emotional reactions.

Starting from the premise that teaching is an act of communication, which is currently being done online, the main concern of education specialists is to optimize the process of online communication so as academic learning to be effective, meaningful and profound.

As there is an interdependent relationship between communication and learning, this study is an investigative approach that aims to provide some data on students' perceptions of online communication.

Effective and persuasive didactic communication, especially in the online environment, raises a number of difficulties and questions. How can the online communication process be optimized so that learning could be made more efficient? How can a challenging climate in the digital environment be built, what methods are more effective for stimulating interest and activating students? How do students relate to online training, what are the difficulties they encounter, the advantages and disadvantages they perceive? These are only a few questions that we are trying to find answers to in this study.

In order to conduct our investigation, we used a sample of 126 participants, and as a research method we used the questionnaire-based survey and the interview. Following the processing of the results obtained, we were able to formulate conclusions relevant to virtual communication. Among them we mention: training students in the online didactic activity is more difficult, their involvement and participation being strongly influenced by the stress caused by technology. As for building a disinhibiting, stimulating environment, students have high expectations from the teachers.

Zusammenfassung

Schlüsselworte:

Online-Kommunikation; akademisches Lernen; anregendes Umfeld; Motivation; sozio-emotionale Reaktionen.

Ausgehend von der Prämisse, dass Lehre ein Akt der Kommunikation ist und derzeit online gelehrt wird, besteht das Hauptanliegen der Bildungsspezialisten darin, den Prozess der Online-Kommunikation so zu optimieren, dass akademisches Lernen effektiv, sinnvoll und tiefgreifend ist.

Da es eine Wechselbeziehung zwischen Kommunikation und Lernen gibt, handelt es sich bei dieser Studie um einen investigativen Ansatz, der darauf abzielt, einige Daten über die Wahrnehmung der Online-Kommunikation durch die Schüler zu liefern.

Wirksame und überzeugende didaktische Kommunikation wirft insbesondere im Online-Umfeld eine Reihe von Schwierigkeiten und Fragen auf. Wie kann der Online-Kommunikationsprozess optimiert werden, um das Lernen effizienter zu gestalten? Wie kann im digitalen Umfeld ein Reizklima aufgebaut werden, welche Methoden sind effektiver, um Interesse zu wecken und Studierende zu aktivieren? Wie stehen die Studierenden zur Online-Ausbildung, welche Schwierigkeiten treten auf, welche Vor- und Nachteile werden wahrgenommen? Dies sind einige Fragen, auf die wir in dieser Studie Antworten finden.

Für unsere Untersuchung haben wir eine Stichprobe von 126 Probanden und als Untersuchungsmethoden die fragebogenbasierte Befragung und das Interview verwendet. Nach der Aufbereitung der gewonnenen Ergebnisse konnten wir relevante Schlussfolgerungen zur virtuellen Kommunikation formulieren, darunter erwähnen wir: Die Ausbildung der Studierenden in der Online-Lehrtätigkeit ist schwieriger, die Einbindung und Partizipation ist stark geprägt durch den Stress durch Technologie. In Bezug auf den Aufbau einer hemmenden, anregenden Umgebung haben die Schüler hohe Erwartungen an die Lehrer.

1. Introduction

It is a certainty that the educational process is carried out through and for communication, being, ultimately, an act of communication. Communication, in its turn, contains in itself educational potential: knowledge transmission, the training and development of thinking, the facilitation of intellectual processes, the self-regulation of cognitive activity, the

stimulation of motivation, the development of attitudes and skills.

As to the effects, any communication usually produces a change of a present state, referring both to the relationship between the participants and to their relationship with the external environment (changing

the way of approaching a problem, urging on action or adopting certain behaviors and so on).

Didactic communication, seen as instrumental communication, directly involved in supporting a systematic learning process (Cucoș, 2006), aims to produce changes, positive transformations in terms of knowledge, affectivity and behaviors, in the personality structure of the participants.

Didactic communication can be considered "an axiomatic principle of the educational activity that involves an *educational message* developed by the subject of education (the teacher), able to provoke the formative reaction of the object of education, assessable in terms of external and internal inverse connection" (Cristea, 2000). What remains determinant is the formative characteristic of the didactic communication, the teacher simultaneously exercising his influence on the contents and the student.

In didactic communication we must be precise and expressive, at the same time, through clarity and conciseness facilitating both the transfer and understanding of the transmitted message; the transmitted information must be adapted to the purpose, the teaching objectives and the intellectual level of the students.

Didactic communication is not only an activity that connects the teacher and the student to achieve common goals, it is also a psychosocial process of influencing attitudes, behaviors, beliefs, affective-motivational and volitional components through specific languages.

Therefore, communicating effectively and expressively, especially in the online environment, raises a number of difficulties and questions:

How can the online communication process be optimized so that learning could be made more efficient? How can a stimulating climate be built in the online environment, a mobilizing climate, with positive values in the formative-educational plan? What methods are more effective in the digital context in overcoming the mere exposure in a high-profile, well-argued debate that is able to change the conformism of a student into participation and activism? How do students relate to online training, what are the difficulties they encounter, the advantages and disadvantages they perceive? What are their socio-emotional reactions?

These are some of the questions we started from in this study. We have been trying to find answers, from the position of the teacher who aims at streamlining the didactic communication and implicitly facilitating the academic learning.

2. Theoretical foundation

2.1. Barriers/ blockages that may occur in online communication

Communication, as a complex system, is influenced by a set of disruptive factors, generators of barriers/ blockages that can occur on a cognitive, psycho-social and material level.

In the specialized literature there is a difference between *barrier* and *blockage* in communication. The distinction between barrier and blockage is made by Edouard Limbos (1994): by communicative barrier we understand an obstacle that limits our optimal ability to express, receive the message, being determined by external factors, and blockage in communication is an obstacle essentially with a personal character. "Blockage" in communication refers to a set of actions or aspects that isolate, close, immobilize the individual. Communication blockages can be so intense that there are visible differences between the transmitted information and the perceived message.

Leonard Saules (apud Tran & Stanciugelu, 2003) considers that the following can intervene in the communication process:

- *Language barriers* (the same words have different meanings for different people; the emotional state of the receiver can distort what he/ she hears; preconceived ideas and routine influence receptivity; difficulties of expression, etc.);
- *Environmental barriers* (inadequate work climate, use of inadequate information media, etc.);
- *Conception barriers* (the existence of assumptions, the clumsy wording of the message by the sender, hasty conclusions about the message, the lack of interest of the receiver towards the message).

In online communication, *emotions* can be a difficult barrier to overcome. In addition to the emotions that the student generally experiences when expressing his opinions, there is also the emotion determined by the exposure in front of the camera. Strong emotion is sometimes responsible for the almost complete blockage of communication.

Semantic problems (generated by the use of words in different ways, or of different words in the same

way or determined by the *speed of speech, reception and processing of information, lack of interest of the interlocutor in the message sent* (it must be handled with ability in order to direct the message so as to correspond to the interests and needs of the recipient of the message), connection issues are some of the obstacles frequently encountered in communication on digital platforms.

Defensive perception is another side of distortion. Defensive communication is “a complex process through which the individual preserves his already acquired manners - dysfunctional, negotiates his feelings in different situations. Defenses are attempts to achieve a compromise between internal vital needs and external requirements, between desires and norms. At the level of virtual communication, defensive behavior generates defensive listening (the individual listens, but does not comment, has no reply), accompanied by attitudes and facial expressions that illustrate the increase of the individual's defense level (looking down, nodding without looking into the camera etc.). The more defensive a person becomes, the less able one becomes to accurately perceive the transmitter's motivations, values, and emotions (Melnic, 2011). Defensive perception manifests itself as a factor of resistance to change.

Resistance to change can be another obstacle in online communication. Evolution, progress compulsory requires the change of habits, norms, ways of action. Most people show a strong resistance to change, because changes cause fear, involving the unknown and taking risks;

Lack of self-confidence is an often overlooked dimension in the educational process. Individual and collective progress is based on self-confidence, on the motivation to do good things, and the belief that you can achieve them. Students must be encouraged, constantly stimulated for them to succeed in overcoming their fear of expressing their own views, especially in the online environment.

In order to overcome the barriers that appear in communication, N. Stanton (1995, p. 5) examines the ways in which communication can be achieved as efficiently as possible, the first and most important rule being anticipation. He believes that if some of the more difficult issues are analyzed before communicating, they can be avoided.

2.2. Climate and feedback - factors that have a strong impact on the effectiveness of online teaching communication

Effective communication is “a form of nonfusion communion at an affective and cognitive level (...) The premises of the ability to communicate effectively are related to the whole personality dynamics and can be highlighted by behaviors such as the capacity to refer directly to yourself, speech personalization or assumptions, representations and behaviors” (Georgescu, 2007, p. 140).

One of the factors that affects the efficiency of communication is the climate. *The climate* is a strong factor in mobilizing or demobilizing the members of an organization: it can have positive values and, in this case, it is a supporting factor or it can have negative values and it becomes a disruptive factor. In general, the term “climate” means:

- the intellectual and moral ambience that reigns in a group;
- the set of existing collective perceptions and emotional states;
- a state of collective psychology, a group phenomenon.

Neal, West, Patterson (2004) distinguish between the *psychological climate* that refers to individual perceptions and *the organizational climate* that refers to the evaluations shared by a sufficiently large number of the members of a team.

The climate is a strong factor in mobilizing or demobilizing the members of a team: it can have positive values and, in this case, it is a supporting factor or it can have negative values and it becomes a disruptive factor. We present in table no. 1 some characteristics of a climate:

Table no. 1. Characteristics of a climate

In general, a climate can be characterized as follows:

it is gradually structured (it is a latent variable) and it intervenes in the relationship between the individual and his activity environment;

it is strongly subjectivized, because it encompasses the meanings that the individual gives to those whom he interacts with, as well as to the different particular situations he faces;

it is situational and contextual, having, in addition to a certain stability, an accentuated dynamics.

The climate is the product of a multitude of factors, some of which stand out through their more obvious impact:

a) *Structural factors* – they are related to the various aspects that are about the structure of an organization; the structural factors with the greatest impact on the communication climate are:

- *the group size* - a larger number of people leads to a colder climate in communication, unlike smaller groups inside which the climate is warmer, but not completely devoid of possible tensions;

- *the human composition of the group*, which refers to the structure of age and sex, the degree of homogeneity of professional training, extra-organizational social position (the social environment they come from). In the online environment, the effects of the 2 mentioned factors on the climate are attenuated;

b) *Instrumental factors* – they refer to the conditions and means of achieving the educational objectives; in the digital environment, these factors include:

- *the teacher's teaching style*;
- *ways of communication*.

c) *Socio-affective and motivational factors* – they are manifested through their effects on the degree of socio-affective comfort, the interest of the members of the group of students; these factors include:

- *the emotional contamination of interpersonal relationships* (acceptance, rejection, indifference) *and the presence of likes/ dislikes*;

- *the satisfaction or dissatisfaction generated by the activity performed*;

- *the motivation techniques used*;

- *the relationship with the teacher* (close/ warm or cold/ distant).

Stress is an unproductive factor of the climate because it affects the performance, the work atmosphere, the quality of decisions; it involves depression, frustration, nervousness, fatigue, anxiety, etc.

In a stressful climate, communication cannot be effective. Etymologically, the term *stress* comes from the Latin verb *stringere* = to gather, to upset (Arnold et al, 1998; Légeron, 2003). Communication stress-inducing agents (adapted from Cooper, Marshall, 1976 apud László, 2008, pp. 549-554):

a) *stressors intrinsic to the activity*: repetitive and monotonous activity, workload, work pace, long activity;

b) *stressors resulting from relationships with others* (teachers, colleagues): lack of social support, verbal aggression;

c) *stressors related to personal and career development*: lack of opportunities for personal and career development;

d) *stressors related to the structure and climate of communication*: the freedom to decide is an important aspect in organizing learning;

e) *stressors resulting from the role conflict*: the conflict related to time, to behavior (the behavior practiced in one role is not compatible with the one necessary to fulfill another role).

Stress tolerance is correlated with the ability to manage time and fulfill responsibilities. Stress is the adaptation response, mediated by individual characteristics, response generated by external actions or events that require the individual a special mental and physical effort. In this sense, we highlight the following aspects (<http://www.romanian-ports.ro/caprico/uploads/files/CAPRICO%20-%20CRIO%20-%20Suport%20curs.pdf>):

- *assertive communication* (control element); it is the positive, responsible, self-confident communication that allows people to be themselves as unique, valuable, important individuals, to support their own rights without denying the value, importance and rights of the others.

- *generating social support* by organizing the activity environment (organizing element); social support refers to the totality of psychological information transmitted during the communication process, information that determines the individual to feel that he is accepted, that he is appreciated and that he belongs to the group;

- *time management (planning)* by using specific techniques (planning element); the “lack of time” is often invoked as a barrier to effective communication; such an attitude has a negative chain reaction: “running” communication inevitably leads to ineffective communication, it generates communication errors whose correction involves additional time consumption, so even more acute lack of time.

Regarding stress reduction, a number of strategies for reducing stressors are identified (Avram & Cooper, 2008, p. 33), such as: redesigning the work task; building a stimulating work environment; establishing flexible work schedules, encouraging participation, analyzing roles and setting goals, giving praise, rewards.

In order to streamline communication in general, and online didactic communication in particular, *feedback* plays a particularly important role. Communication involves an interaction focused on feedback on the information conveyed. The communicative act is an interactive, relational act. Communication must function as a circular system and it must self-regulate. About feedback we can say that:

- it is a very important component of communication. T. K. Gamble and M. Gamble define feedback as “all verbal and nonverbal messages that a person conveys consciously or unconsciously in response to another person’s communication” (Gamble & Gamble, 1993, p. 151); feedback is needed to determine the extent to which the message has been understood and accepted ”;
- it is a way to help someone think about changing their behavior, it means providing someone with aspects of their behavior and its effects;
- feedback helps the individual find out if their own behavior has had the expected effect, it informs them if they have not lost their “target” as they try to achieve their goals;
- it is essential for effective communication and it is the last step in ending communication. Effective feedback helps us become aware of what we do and how we act, giving us the opportunity to change our behavior. It must be offered in a delicate and supportive way;
- supportive feedback assumes that the issue that the other person considers important and significant, is also appreciated by the listener (receiver) as important and significant; supportive feedback is difficult because we need to be able to reduce the intensity of other people's feelings by letting them know that we consider their problems real and serious (as opposed to these is the approach by which other people's problems are minimized - a somehow “naturalized” approach in human interaction, implicitly educational).

3. Research methodology. The impact of the online environment on academic learning and communication - an investigative approach

3.1. The goal pursued

The initiated investigative research aimed to investigate the opinion of the future students-teachers on various aspects of online communication: stimulating motivation/ interest, dimensions of the teacher’s behavior with an impact on online communication and, implicitly, on learning, obstacles, reactions of the participants on a socio-emotional level, the efficiency of virtual teaching training, advantages/ disadvantages.

3.2. The sample and methods of investigation

In order to conduct our investigation, we used a sample of 126 students from the following faculties: The Faculty of Social Sciences, The Faculty of Law, The University of Craiova, students who are also enrolled in the *Psycho-pedagogical Training Program for certifying competencies for the teaching profession*, level I, year II.

We used, as research methods, the questionnaire-based survey and the interview, which were accompanied by the appropriate tools.

The questionnaire applied to the participants included 16 various items, both with closed answers (most of them) as well as with open answers.

As the structure of the questionnaire is concerned, some of its items are dichotomous, others require the participants to prioritize various aspects, and the third category of items uses the Likert scale, where the students are asked to express their opinion on an abstract scale, marked with numbers from 1 to 7, (the lexical meaning assigned to the items being “not at all”, “to a very small extent”, “to a small extent”, “to a moderate extent”, “to a large extent”, “to a very large extent”). These response variants were rounded by two others: “I don't know/ I cannot appreciate”, in order to capture the students' indecision situations.

As content is concerned, the questionnaire and the interview aimed to collect data on the requirements/ exigencies that the future student-teachers outline concerning the impact of the online environment on academic learning and communication.

4. Results and discussion

Online communication has been a challenge for both teachers and students. Teachers needed time to adapt and to make the training strategies more flexible by using technology and electronic means of communication.

In this context, we have built and applied a questionnaire that aims to outline a clearer picture of online teaching.

We selectively present the responses provided by the participants to the items of the questionnaire. We mention that the answers collected and analyzed were given only by the students who participated *to a large extent* in the online classes (the target group was composed only of students who frequently participated in the teaching activity carried out on digital platforms).

The responses to the question *To what extent has the teacher stimulated, in the online environment, the motivation/ the interest of the students in learning?* are summarized in table 2 and represented in figure no.1.

Table no. 2: The extent to which the participants consider that the teachers have stimulated, in the online environment, the students' motivation/ interest in learning

Answers	Frequency	Percentage
Not at all	6	4.76
To a very small extent	17	13.49
To a small extent	20	15.87
To an appropriate extent	28	22.22
To a large extent	22	17.46
To a very large extent	21	16.66
I don't know/ I can't appreciate	12	9.52

As it can be observed from the gathered and processed data, the participants' opinions vary: most of the participants consider that teachers have stimulated, in the online environment, students' motivation/ interest for learning *to an appropriate extent* (22.22%). Close percentages were identified for the following response variants: *to a large extent* (17.46%); *to a small extent* (15.87%).

Carrying out the online teaching activity asks for a series of requirements/ conditions. The indicators that are important for the students and have learning effects are presented in table no. 3 and the related figure (fig. no. 2):

Table no. 3: The extent to which the participants appreciate the performance of teachers in the online environment

Indicators on the development of teaching activity	Measure of satisfaction Frequency/ Percentage						
	1	2	3	4	5	6	7
	not at all	to a very small extent	to a small extent	to a moderate extent	to a large extent	to a very large extent	I don't know/ I cannot appreciate it
Content (structuring, systematization, coherence, accessibility)	12	13	17	21	30	20	13
Activity dynamism / student activation	13	16	26	20	20	16	15
Providing and requesting feedback	12	17	18	20	22	23	14
Concern for formulating themes, learning and reflection tasks	11	13	19	21	22	26	14
Time management	16	13	25	18	24	12	18

We can observe from the data presented in the table that, first of all, the participants appreciate *the content* communicated in the online environment. Secondly, as an indicator of the teachers' performance, the participants appreciate *their concern to formulate topics, learning and reflection tasks*. Thirdly, *offering and requesting feedback* is an indicator according to participants.

Therefore, *the dynamism of the activity/ activation of the students* is perceived as an indicator that needs improvement. In virtual communication, training students is more difficult. Participation, in the sense of intervention and expression of one's own opinion, on one's own initiative, on digital platforms also faces the stress caused by technology (the participants' answers to the focus-group interview complete the data obtained by applying the questionnaire; they show that most of them feel the emotions caused by the video cameras). In academic success, the climate and the conduct of the teacher are essential aspects of the academic learning. In this context, the participants considered the following dimensions to be particularly important in learning (table no. 4 and Figure no. 3):

Table no. 4: Dimensions of the teacher’s conduct, with an impact on learning

The teacher’s conduct	Frequency	Percentage
<i>A relaxing environment that ensures emotional comfort</i>	112	88.88
<i>Interaction, activation</i>	106	84.13
<i>Facilitating learning through schemes, examples, explanations</i>	99	78.57
<i>Awakening interest in knowledge</i>	97	76.98
<i>Providing and requesting feedback</i>	90	78.57
<i>The logic of the teacher’s speech</i>	93	73.80
<i>Empathic communication</i>	88	69.84
<i>Coordinating, guiding students’ learning activity</i>	84	66.66
<i>Placing students in real life situations or problem situations that activate and invite to reflection</i>	82	65.08
<i>Persuasive communication</i>	81	64.28
<i>Providing support materials</i>	79	62.70

The data obtained show that the participants place first the relaxing, stimulating climate (88.88%), which draws the teachers’ attention to the importance they must give to the emotional comfort. Second in importance, according to students’ perception, is the activation, the interaction within the didactic activity (84.13%); thirdly, the participants value facilitating learning through schemes, examples, explanations (78.57%) and on the 4th place, the awakening of cognitive interest (76.98%).

For the question *To what extent did the teachers manage to reach your expectations in terms of online*

Table no. 6: Socio-emotional reactions of the participants during the time spent in the online environment

Indicators of carrying out the didactic activity	The extent of their satisfaction Frequency/Percentage						
	1	2	3	4	5	6	
	<i>not at all</i>	<i>To a very small extent</i>	<i>To a small extent</i>	<i>To a moderate extent</i>	<i>To a large extent</i>	<i>To a very large extent</i>	<i>I don’t know // cannot appreciate</i>
<i>I enjoyed everything I managed to achieve academically and personally</i>	5 3.96%	16 12.70%	15 11.90%	22 17.46%	33 26.19%	29 23.01%	6 4.76%
<i>I felt confident, even optimistic</i>	5 3.96%	25 19.84%	35 27.78%	27 21.43%	14 11.11%	14 11.11%	6 4.76%
<i>I felt socially connected, despite the physical distance</i>	4 3.17%	28 22.22%	48 38.10%	22 17.46%	10 7.93%	9 7.14%	5 3.96%
<i>I managed my time well</i>	6 4.76%	14 11.11%	20 15.87%	37 29.36%	27 21.43%	18 14.28%	
<i>I felt overwhelmed emotionally/ stressed by too many requests from the teachers</i>	3 2.38%	10 7.93%	14 11.11%	24 19.05%	52 41.26	19 15.07	4 3.17%
<i>I felt distrustful/incredulously</i>	6 4.76%	14 11.11%	14 11.11%	27 21.43%	35 27.78%	25 19.84%	5 3.96%
<i>I felt alone/ socially isolated/ disconnected from others</i>	4 3.17%	9 7.14%	10 7.93%	22 17.46%	48 38.10%	28 22.22%	5 3.96%

interaction and communication? most of the participants answered that they are satisfied *to a large extent* (50.79%) and *to a very large extent* (20.63%). Results are summarized in table 5 and are represented in figure no. 4.

Table no. 5: The extent to which the participants are satisfied with online interaction and communication

Answers	Frequency	Percentage
<i>Not at all</i>	2	1.59
<i>To a very small extent</i>	12	9.52
<i>To a small extent</i>	17	13.49
<i>To a large extent</i>	64	50.79
<i>To a very large extent</i>	26	20.63
<i>I don’t know</i>	3	2.38

The development of teaching activity on digital platforms, the effort to adapt to change, also required good emotional management from the students. The data regarding the way in which the participants from the sample managed this period of social distancing, the effects perceived in a socio-emotional plan, are presented in table no. 6 and the related figure (fig. no. 5):

From the data presented in table no. 5 we draw the following conclusions:

- more than half of the participants in the sample felt emotionally overwhelmed/ stressed by too many requests from the teachers - 41.26% *to a large extent*, 15.07% *to a very large extent*;

- the results are also similar from the perspective of social relations: 38.10% of the participants felt alone/ socially isolated/ disconnected from the others *to a large extent*, and 22.22% *to a very large extent*;

- however, half of the investigated participants enjoyed everything we managed to achieve academically and personally: 26.19% *to a large extent*, and 23.01% *to a very large extent*;

- as for confidence, optimism, as a general state of mind, the results were as follows: 22.22% of the participants chose the variants *to a large extent* and *to a very large extent* and almost the same percentage (21.49%) chose the variant *to a moderate extent*.

As such, in terms of the socio-emotional dimension, the changes that have occurred on the social level, which have also affected the teaching activities, which took place mainly in the online environment, have come together with the emotional imbalances, stress, tasks felt as overwhelming and the feeling of disconnection from the others.

Although the tasks, as a whole, led to stress, most of the students feeling overwhelmed, the perception regarding the quality of the work tasks received online is a positive one: it is observed that more than half of the participants (57.14%) appreciate as being *constructive, useful, able to facilitate or guide learning*, so as to allow them to successfully solve problem situations, the percentage difference (42.85%) considering tasks, as a whole, *unattractive, inappropriate* and 5% chose the option *I don't know*.

Another item asks the participants to identify the extent to which the feedback provided by the teachers on the solved tasks and applications matters. Most of the participants consider that the feedback provided by the teachers to the solved work tasks as being useful *to a large extent* (26.19%) and *to a very large extent* (25.40%). About 20% consider it less useful (*to a small extent* - 12.70% and 8.73 - *to a very small extent*).

We are presenting it, in the following table (no. 7), with the afferent graphic representation (fig. no. 6), as it resulted from the data processing:

Table no. 7: The extent to which the participants consider useful the feedback provided by the teachers to the solved

Answers	Frequency	Percentage
<i>Not at all</i>	6	4.76
<i>To a very small extent</i>	11	8.73
<i>To a small extent</i>	16	12.70
<i>To an appropriate extent</i>	21	16.66
<i>To a large extent</i>	33	26.19
<i>To a very large extent</i>	32	25.40
<i>I don't know/ I can't answer</i>	7	5.55

Didactic communication, as a complex system, is influenced by a set of disruptive factors/ obstacles. They are, in the opinion of the students, presented in table no. 8 and the corresponding figure (no. 7):

Table no. 8: The main obstacles in online communication

Results	Frequency	Percentage
<i>Loss of connection or poor Internet connection</i>	27	21.43
<i>Students' access to computer/ smartphone/ tablet technology, software</i>	11	8.73
<i>Involvement, activation of all students, stimulation of their motivation</i>	10	7.94
<i>Low level of digital competence among students</i>	26	20.63
<i>Low level of digital competence among teachers</i>	8	6.34
<i>Mental fatigue, much greater demand for eyesight and intellectual effort</i>	28	22.22
<i>Increased stress level associated with the loaded program (video courses, tasks to be solved on digital platforms)</i>	14	11.11
<i>I did not encounter any difficulties</i>	2	1.59

Findings indicate that the most frequent obstacles relatively evenly distributed are: a) mental fatigue, much higher demand for eyesight and intellectual effort (22.22%); b) loss of connection or poor Internet connection (21.43%); c) low level of digital competence among students (20.63%).

As for the advantages/ disadvantages that participants have outlined with regard to the role of online communication in their academic success, we highlight the most common ones in the inventory lists (table no. 9):

Table no. 9: The participants' perception of the advantages/disadvantages of online communication in academic success

Advantages	<i>The information and materials taught can be saved and stored much easier</i>
	<i>The speed of sharing virtual teaching materials</i>
	<i>The possibility to interact on digital platforms remotely</i>
	<i>Accessibility, flexibility and comfort</i>
	<i>Concise presentation of contents, with intuitive, visual support (power-point materials, schemes, video recordings, etc.)</i>
	<i>The individualization of the learning process (well suited to the pace and style of learning)</i>
	<i>The possibility of comfortable learning, in our personal environment</i>
	<i>The speed of sharing virtual teaching materials</i>
Disadvantages	<i>It is not possible to have access to technological resources from any location</i>
	<i>You can lose concentration; you can carry out other activities at the same time with the online teaching activities</i>
	<i>The lack of human interaction, diminished socialization</i>
	<i>The need to develop and assert digital skills</i>
	<i>The work tasks given by the teacher can also be solved by other people</i>
	<i>The incomplete communication (nonverbal communication is more difficult)</i>
	<i>It may deepen differences in social status within the group (implicit costs related to digital equipment, internet subscription)</i>
	<i>The loss of connection due to signal strength in different rural areas or overload of the internet</i>
	<i>The impossibility to conduct laboratory courses in the online environment</i>
<i>The intellectual overload, due to the large volume of work</i>	

5. Conclusions

In the students' perception, the didactic communication, made in the online environment, determined, among the teachers, an increased attention paid to *the content, to the formulation of some topics, some learning and reflection tasks*. The students appreciate these requirements/ conditions, but also draw attention to the importance they give to *the climate, the dynamism of the activity*. Therefore, *the activation of students* is perceived as an indicator that requires improvement.

In virtual communication, training students is more difficult. Involvement and participation are strongly influenced by the stress caused by technology (the data show that most people feel the emotions caused by video cameras). Regarding the construction of a disinhibiting, stimulating environment, the students have high expectations from the teachers, most of the participants considering that the teachers have stimulated, in the online environment, the

students' motivation/ interest for learning only *to an appropriate extent* (22.22%).

The data obtained show that the participants rank highest the relaxing, stimulating climate (88.88%), which draws the teachers' attention to the importance they must give to the emotional comfort. An environment in which communication is encouraged is recommended (for example, anecdotes and personal experiences encourage trust, which fosters a receptive and creative learning environment" (Hrastinski, 2008).

Feedback is also an important criterion; it is recommended to always offer the possibility to outline additional questions to clarify the message (Flahavan & Rudick, 2001).

Regarding the socio-emotional dimension, the changes that occurred on the social level, which also affected the teaching activities (they mainly took place in the online environment), came with emotional imbalances, stress, tasks felt as overwhelming and the feeling of disconnection from the others.

For the participants, the main obstacles encountered in online communication were: a) mental fatigue, much greater demand for eyesight and intellectual effort (22.22%); b) loss of connection or poor Internet connection (21.43%); c) low level of digital competence among the students (20.63%).

Virtual communication can have both advantages and disadvantages. Computer-mediated communication can lead to an increased negative tone, low assertiveness and depersonalization (Journal of Psychology, <https://ultrapsihologie.ro/2015/02/02/comunicarea-virtuala-vs-realitate/>).

Regarding the advantages that the participants have outlined about the role of online communication in academic success, we highlight the most common ones in the inventory lists: the speed of sharing virtual teaching materials; accessibility, flexibility and comfort; concise presentation of the contents, with intuitive, visual support (power-point materials, schemes, video recordings, etc.); the possibility of comfortable learning, in the personal environment, etc.

Among the inventoried disadvantages, we list: the loss of connection due to signal strength in different rural areas or overload of the Internet; other activities can be carried out at the same time as the online teaching activities; incomplete communication (nonverbal communication is more difficult); the impossibility of conducting laboratory courses in the online environment; intellectual overload, due to the large volume of work.

To conclude, regardless of the type or environment in which communication is achieved, it must promote experiences and positive feelings in order to streamline learning and have formative-educational effects. Combining the cognitive with the emotional is an essential dimension in the efficiency of learning and a direction of action on which all specialists in the field of education must focus their attention and efforts. In addition, in the direction of streamlining online communication, other suggestions and directions of action can be outlined: (https://www.umass.edu/oapa/sites/default/files/pdf/handbooks/teaching_and_learning_online_handbook.pdf): clarify computer skills/ terminology, explain the differences in online learning versus traditional classroom learning and clarify expectations.

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