OPTIMIZING DIDACTIC COMMUNICATION
IN THE INFORMATION AGE

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Abstract

Teaching is a complex process in the information age, and it is influenced by the ubiquitous use of technological means. The multitude of information channels has a dual effect: a positive effect of ease and opportunity to communicate regardless of time or geographical area, and a negative effect that minimizes the role of the teacher in providing knowledge. The opportunity for students to extract their own information from different domains leads to the phenomenon of diminishing the importance of the teacher in the process of learning and acquiring new knowledge. In the contemporary society, an effective professor is not strictly limited to sharing new knowledge with his/her students, but this requires a range of managerial skills, as well as continuing education and training. The teacher is considered to be a true leader, having the task of organizing the class of students and of properly and logically structuring the courses. The absence of communication or stalling in the teaching process are directly linked to the success rate of the students and teacher alike. At the same time, the teacher has the duty to be a model to be followed by his/her students and to inspire them rise on the socio-cultural ladder.

Key words: Didactic communication; Information era; Technology; Classroom management.

1. Introduction

1.1. The impact of technology on media in the educational sphere

The impact of technology on media in the educational sphere has generated important changes in the perception of teaching (Marhan, 2007, p. 6). The changes that have occurred are felt both from the perspective of the teacher and that of the student. Thus, we are witnessing a phenomenon of lack of orientation regarding the expectations of the teacher towards students and vice versa. The post-December 1989 period in Romania has been marked by numerous educational changes that have led to the confusion of students, parents and educators alike (Cucos, 2017, p. 43, our translation). There must be a clear demarcation in the management of change:

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- Positive impact: Change is a necessity as it positively influences the evolution and accumulation of new information as well as the use of gadgets that simplify the learning process
- Negative impact: multiple changes implemented at short intervals may lead to the opposite of the desired effect, resulting in poor school results and lack of motivation both at the pupil level and at the teacher level, since both sides are in an uncertain situation caused by the lack of stability in the educational curriculum.

The communication requirements of the educational system are steadily increasing, which is why it multiplies its forms of communication and raises its demands on the act of communication (Collignon, 2015, p. 15). Such an evolution forces the teacher to become a good professional of didactic communication, both in the field of mastering the communication technique and in the resonance of the receiver, in influencing the formation of his/her personality under multiple aspects, the communicative competence thus gaining an integrative value of his/her pedagogical aptitude. Also, the teacher has to demonstrate empathy towards the difficulties of his/her students and encourage them to express themselves freely and to ask about the things they did not understand (Dimitriu, 2014, p. 148, our translation). Latest mainstream literature frames empathy within emotional intelligence (Goleman, 2001).

Communication is a relational process in which two or more interlocutors exchange information, understand and influence each other. The codes used in the communication are: word, gesture, image, sound, movement, affective states (Mucchielli, 2005, pp. 80-81).

Today, an extraordinary increase in competitiveness can be observed in the structure of some market segments (marketing, management, economy, etc.), less in the education segment. While we are always witnessing tempting, attractive offers from various service providers, we may well appreciate more if we attend school, education, and research competitions. We live in the 21st century, but the Romanian school does not seem to know how to capitalize on competitive intelligence procedures.

We all know the truth, we already know that in educational institutions in our country we use obsolete learning methods that do not stimulate students' interest or curiosity. How can we adopt another way of learning? It is quite simple. Exploiting technology, information and developing the competitive spirit. Man is a competitive being who has the desire to overcome his peers, but also to self-indulgence. He is not 100 % aware of this feature he possesses and therefore must be formed, modeled. And where can he best develop his competitive spirit if not in an education unit?

Using effectively competitive intelligence procedures, a student can learn much more easily and with more dedication because he realizes what he wants to know accurately and focuses his attention in that direction. Competitiveness also motivates the student, encourages him to find a way to reach his goal.

1.2. Information flow in the 21st century in the high school education system

As the well-known phrase "Knowledge is power" - we can consider an individual as strong as the amount of knowledge that s/he has acquired. Teachers are

perceived as trainers, they shape many generations throughout their career. They have the opportunity to gain extensive experience with human typology, especially children and adolescents. They are the ones who leave a mark on their pupils. They must be perfectly aware of the purpose they have, although it is not an easy one, but it is one that often brings a lot of satisfaction when they discover that they have "shaped other people", helped them - and developed their personality, creativity, etc. That's why they are the ones who have to adapt quickly to the pace of society and understand that today's students have access to a lot of information. This must be seen as beneficial: Today's students - tomorrow's adults will have a wealth of data and information that will help them both in their career and in their personal lives. (Dancu, 2009, p. 98, our translation).

In the midst of informational advancement, reluctance becomes an unknown word. Teachers need to see a new way of developing and acquiring knowledge in the field of technology as a flexible way of acquiring the necessary information in a timely manner (Balaban, 2009, p. 167, our translation). However, there is some uncertainty in Romania regarding the following concepts: *e-learning, online education, distance education*.

By *e-learning* is meant the totality of educational situations in which the means of information and communication technology are used. The advantages of this learning system are: access to a wide range of information, user comfort, as it sets itself the day and time to learn (flexible program). Information is also gathered quickly and can also be available on various smart mobiles using wireless networks. The use of 3D images provides an overview that helps students to imagine a phenomenon or biology: an anatomical / physiological mark, a process in the body, the action of various compounds or substances, drugs on organs, etc.

A modern educational system is complex. It is a system that takes advantage of any technological resource in order to promote good student education.

1.3. Applicability of technology in pre-university environment using the subject of biology as a reference:

a) In addition to the textbook another means of communicating the information will be used during the course;

For example: we can use power point presentations of different lessons / chapters. Presentation is done with a computer / laptop and a video projector.

Simulation: We are having the human anatomy class, and in the textbook there is a lot of textual information, but hard to understand, because the images are very few. Presentation in powerpoint can provide us with schemas, pictures or even videos that show in detail some processes that take place in the body. Thus, students will be able to think logically about how some factors in the body do not learn mechanically. Also in powerpoint, for example in biology, you can add statistics, percentages that can refer to a particular disease or disease that affects more or less the population.

b) Teachers can direct students to online learning platforms.

For example: For students who want a career in medicine or dentistry, there is an online grid platform at several university centres in the country.

Simulation: After learning the theoretical information and understanding the mechanisms and processes carried out in the body, the student can test his / her knowledge (the tests are structured on chapters) which will ultimately provide the result. Thus, the student has the opportunity to apply the information and to find out which segment of the lesson has not been understood. The student will know exactly what is wrong and will ask the teacher for explanations about the problem s/he has encountered in the test.

c) Use Smart Devices (smartphone / iphone / tablet) for educational purposes. Students can download various medical applications: dictionaries with biological and medical terms, atlases of anatomy, etc.

For example: The student reads the Locomotor chapter. S/he browses the text-based information from the manual, but it does not have a practical basis.

Simulation: The student downloads an application (example: Human Body 3D) that allows three-dimensional visualization of bones and muscles. It can more easily identify the anatomical position of the bones and muscles, the origin and insertion of the muscles, giving an overview of the whole body.

d) Engaging students in projects that include computer use.

For example: At the end of the semester, each teacher can provide his / her students with a series of topics related to the subject matter within the respective semester from which they will choose one and present it in powerpoint in front of the class.

Simulation: In addition to the actual project in powerpoint, students will also have the text in Microsoft Word. In this situation the student becomes involved in searching for information about the chosen theme and develops his / her creativity when choosing themes, design, animations to fit into powerpoint. At the same time, s/he gains an interest in pictures, statistics, schedules and videos that are consistent with the subject chosen and s/he thinks s/he could attract the attention of his/her peers, trying to empathise with the class.

The use of technology in the education of students in high-school allows the transmission and assimilation of information and knowledge in an attractive way. The learning process becomes more exciting and enjoyable through the computer. Vividly colored images, accompanied by suggestive texts, enable the development of language and vocabulary.

Educational platforms help both students and teachers and have proven to be a real success in e-learning. An educational platform is a complex software that allows you to manage a domain (subdomain), manage users on that domain, create and manage courses with their associated activities and resources, online / offline evaluation or self-evaluation.

A well-known educational platform is the Moodle platform. The underlying principle of Moodle is collaborative learning and the continuous exchange of information. Both individual projects and group projects can be realized. This type of platform can be accessed from anywhere, not just within the school, because it

has many means of communication: chat, forum or blogs. Within the Moodle platform, sites for different themes or subjects can be created with interactive courses and tests.

Testing can be done in several forms:
- either initial tests in certain areas;
- tests covering a wide range of users;
- tests showing the working time of the learner;
- tester that can be repeated in order to improve the results.

The Moodle platform is very easy to use, being developed by IT engineers with pedagogical training, built on logical principles and simple to understand for both users and administrators. It's an Open Source program, which means that Moodle is free. Everyone has the freedom to use, distribute and adapt the platform to their own preferences or needs. Moodle is available in over 70 languages. Accessibility for a huge number of people around the globe has led to the fact that today Moodle benefits from an active community of users who are willing to offer advice and assistance to new users. There are three advantages that give it uniqueness to the Moodle platform: open source, social constructionist pedagogy, and the user community.

2. Purpose

The purpose of our study is to address the following issues: the effectiveness of communication in the high school environment, the existence of disturbing factors in the communication process, the applicability of the knowledge taught by the teacher in real life, the accessibility of the language used by the teacher (dynamics, attractiveness), factors that influence school success, the relevance of methods of assessing accumulated knowledge, students' perception of the way in which classes take place.
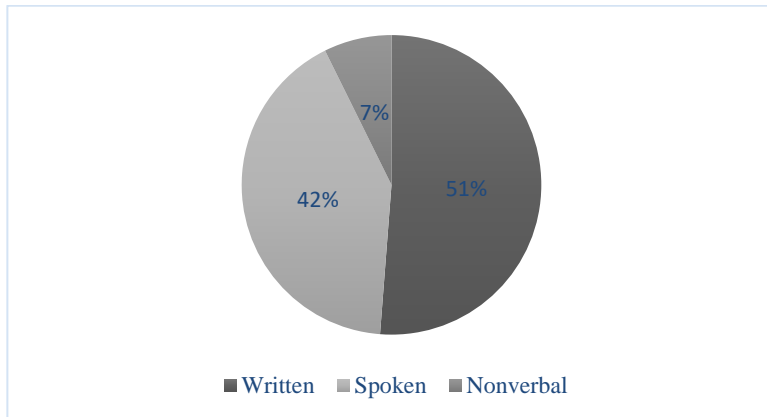
3. Materials and methods

As a method of study, I used the questionnaire applied to 41 students of the National College "Elena Cuza" Craiova, containing a set of 15 questions with a single element, but also various items on different scales:
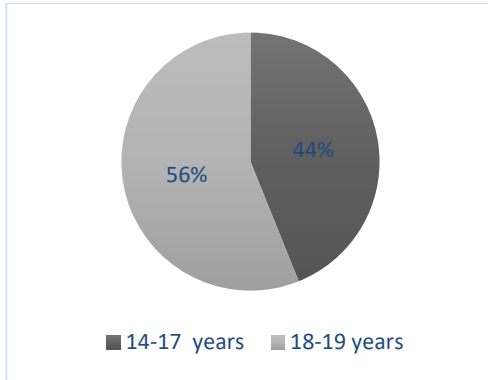
**Figure no. 1. Sample distribution by "age" indicator**
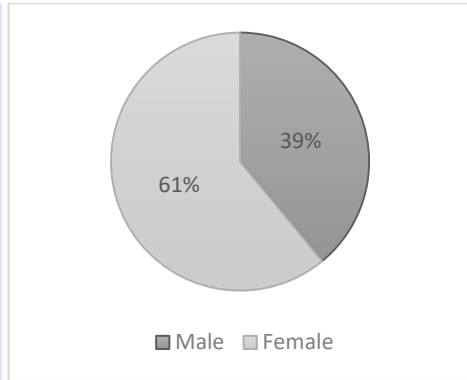
Figure no. 2. Sample distribution by "sex" indicator

Figure no. 3. Selecting the preferred communication type

It can be noticed that most students (51 %) opted for written communication, which denotes the exigency and rigour that they choose to pass on the information. Students who have chosen as a form of communication the oral transmission of information is characterized by a less formal style, which implies greater ease of expression, as well as the need for immediate feedback. (Chiru, 2009, p. 128, our translation).

The percentage of those who chose non-verbal communication is quite low (7 %), this type of communication being often used as a complement to verbal communication.
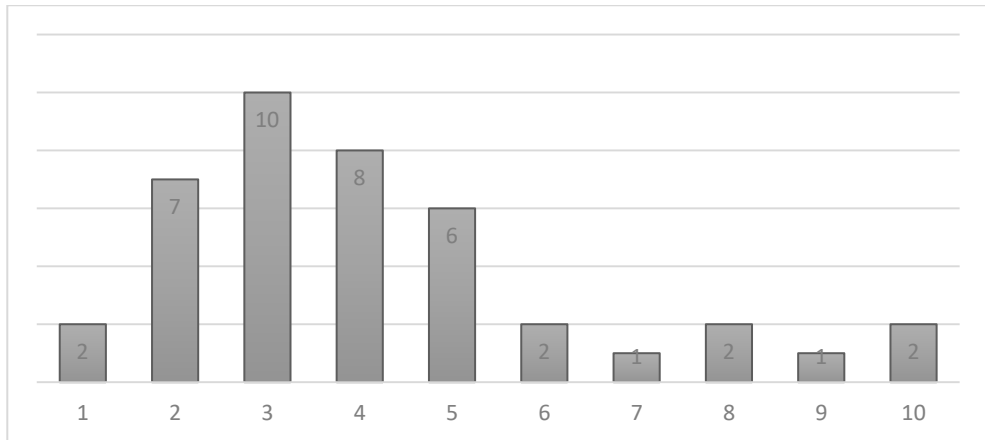
**Figure no. 4. Assessing on a scale from 1 to 10 the effectiveness
of communication in the student-teacher relationship**

To build an effective teacher-student relationship it is very important how communication takes place. Good communication requires a dialogue, not a teacher's monologue, as this situation often occurs.

The interaction between teacher and students must be constant and result in easier understanding of the information. The results showed that the majority of students assessed the effectiveness of communication in the student-teacher relationship on a scale of 1 to 10 with the score 3, being in contrast to the score of 9 and 10 which obtained a very low percentage.
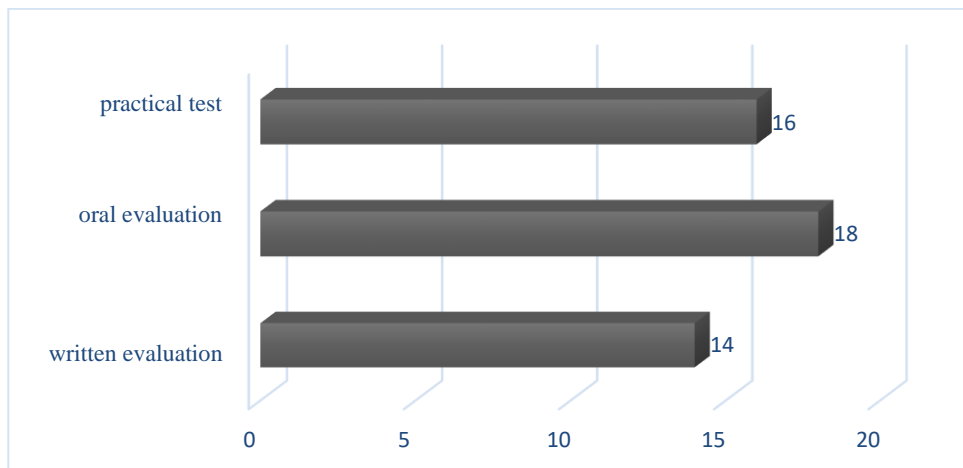
Figure no. 5. Frequency of student-teacher communication breakdowns

The results show that the communication breakdowns are rare, but the situations in which they appear with a high frequency should not be neglected.

Communication breakdowns can be caused by physical factors (noise, improper lighting, extreme temperatures) or human barriers (physical, semantic, lack of good professional training, engagement in work, anxiety).
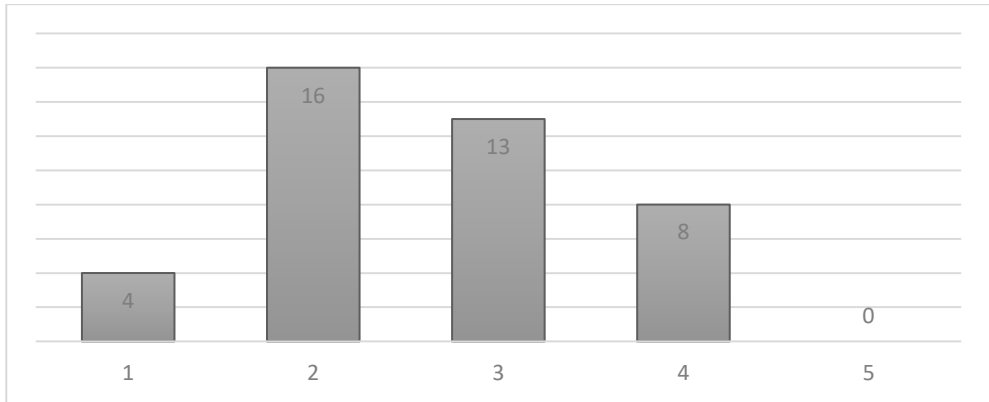
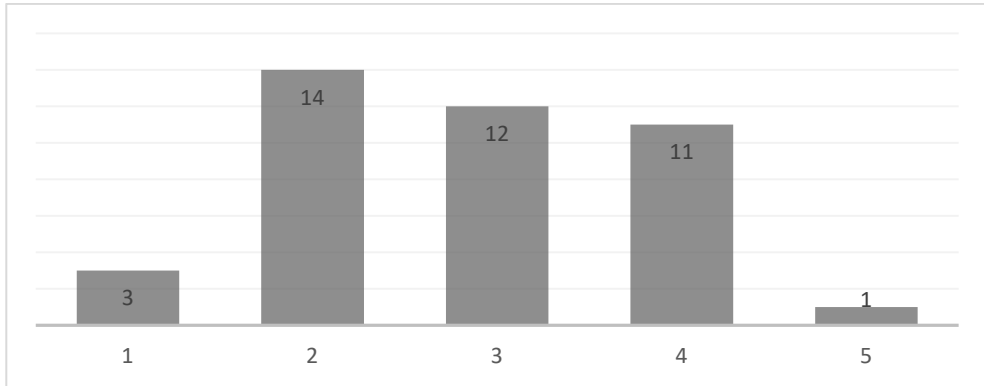**Figure no. 6. Assessing on a scale of 1 to 5 the clarity of the information provided by the teacher**

Teachers need to structure their courses in a way that the information they send to students is clear and leaves no room for interpretations that can lead to misunderstanding of the content. The results showed that the majority of students assessed the score of the information provided by the teacher with score 2, noting that the 5 (maximum) score was not selected by any pupil.
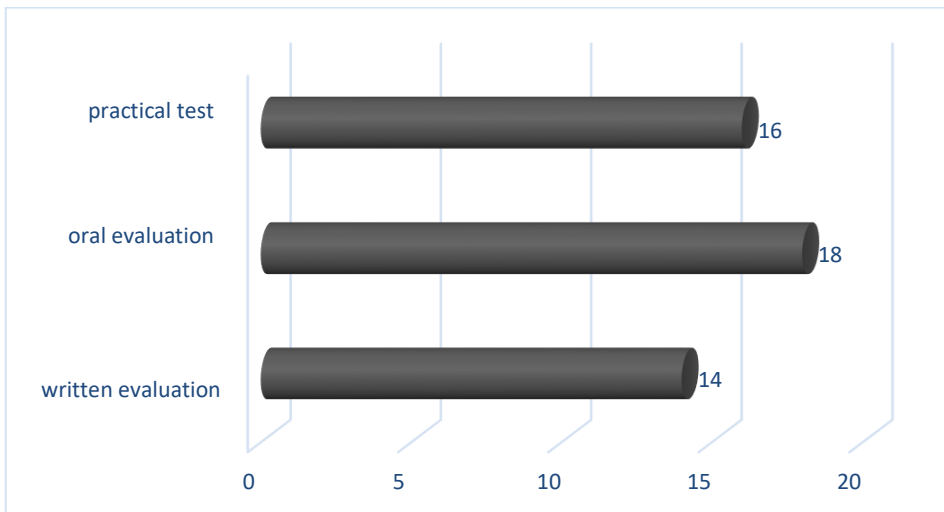
Figure no. 7. Do you consider that the information provided by the teacher during the lessons is sufficient?

In a society where the amount and speed of information dissemination is extremely high, it is probably understandable that most students stated that the information provided during the course hours is insufficient, items never and rarely obtaining the highest values.


Figure no. 8. Assessing on a scale from 1 to 5 the accessibility of the language used by the teacher

The results showed that students encountered difficulties as regards the accessibility of the language used by the teacher during classes, most of them evaluating with score 2 on a scale of 1 to 5 the degree of accessibility. A good teacher has the obligation to communicate the information clearly and correctly, and the use of formal and specialist language requires explanations for good understanding.
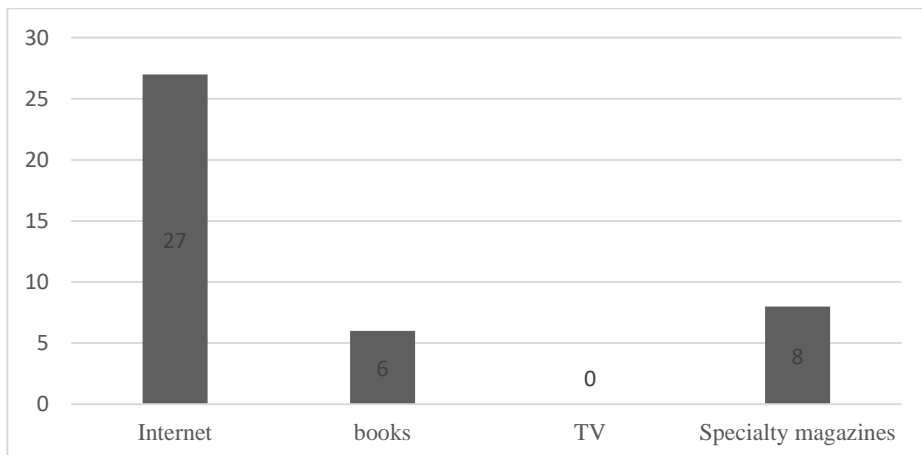

Figure no. 9. Sources used by students to obtain information from different fields

Regarding the sources from which students extract their information from different domains, it is noticed that the Internet occupies a leading place, followed by specialized magazines and a much lower percentage from books.
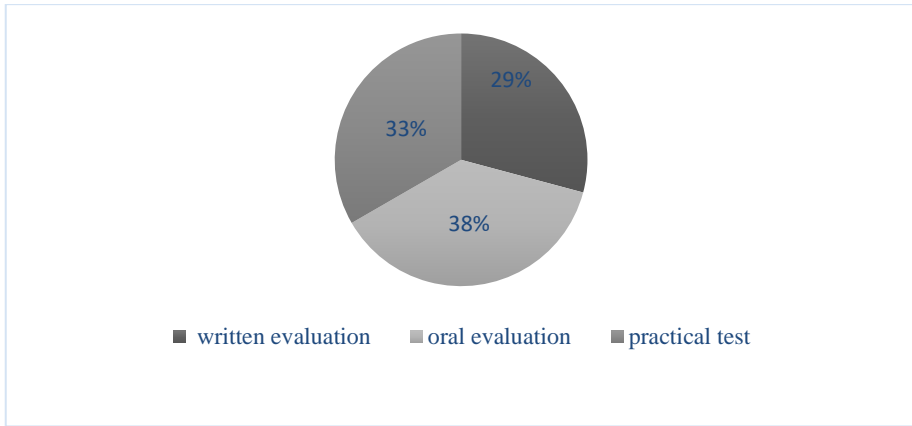

Figure no. 10. The attractiveness of the classes

The appreciation of the students in terms of the attractiveness of the classes showed that only a part is considered attractive (61 %).
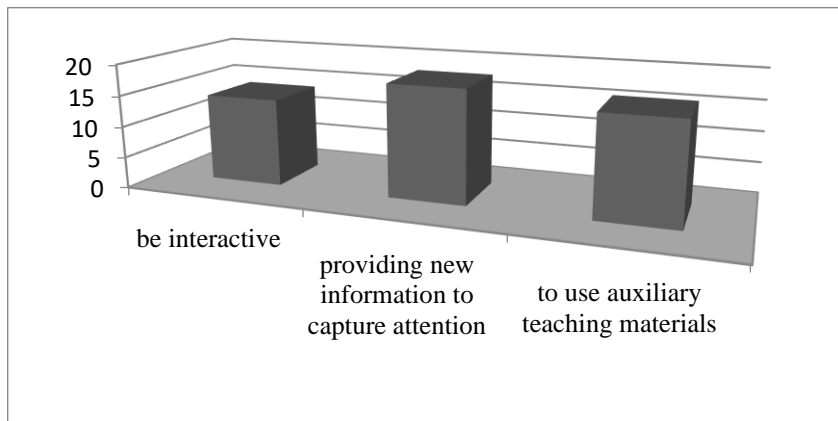

Figure no. 11. Defining the concept of an "attractive class"

The concept of class attractiveness is defined by the majority of students as providing new information that captures attention, followed by the use of additional learning materials such as diagrams, videos, plans, and ultimately the interaction between the teacher and the student.
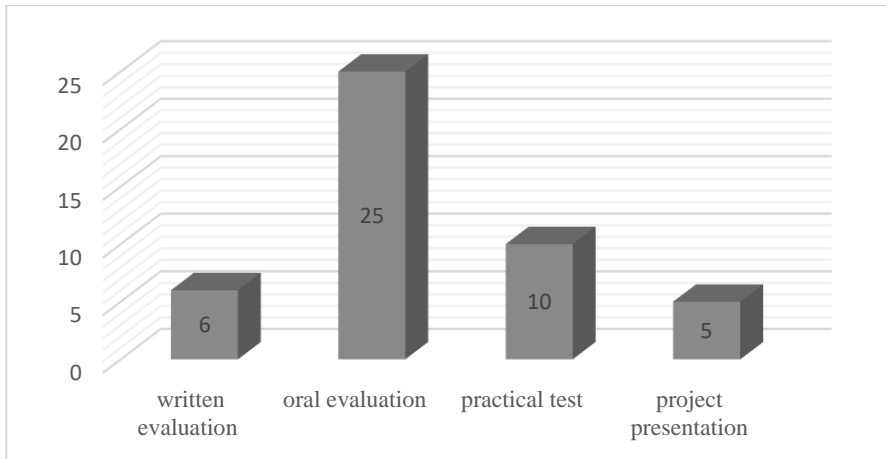
Figure no. 12. Selection by students of the evaluation method that objectively reproduces the acquired knowledge

The results show that most students consider that the most effective evaluation method is oral evaluation, which has as an advantage the immediate feedback and the development of the student's public speaking skills. The oral evaluation is followed by the practical test that makes it possible to apply the accumulated knowledge. The written test was selected by a small number of students, this test being advantageous for students with a high degree of timidity.
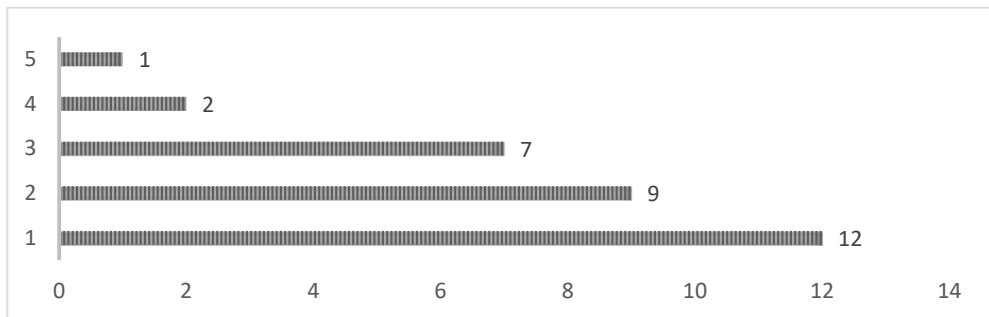

Figure no. 13. Scaling from 1 to 5 the logical structure of the transmitted messages

The results obtained from the questionnaire showed that most students appreciated on a scale of 1 to 5 the logical structuring of messages transmitted by the teacher with the score 1, i.e. the lowest.
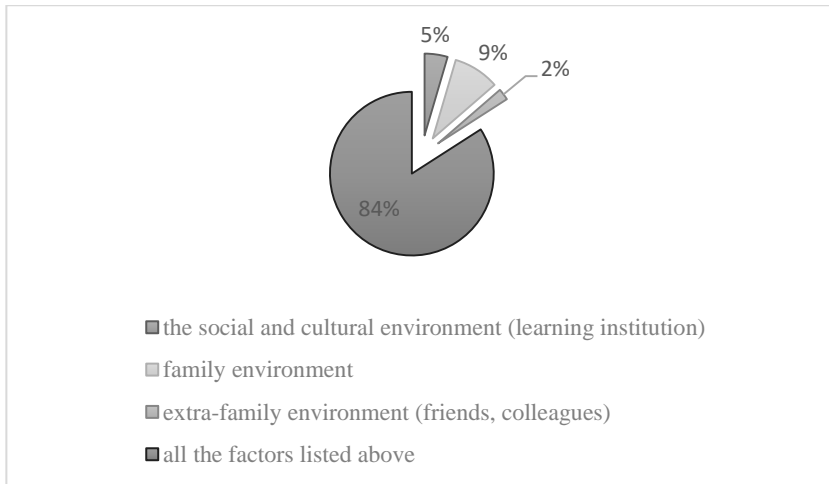
Figure no. 14. Factors contributing to school success

Most students believe that achieving school success involves a constellation of factors: the social and cultural environment, the family environment and the extra-family environment represented by friends, colleagues.
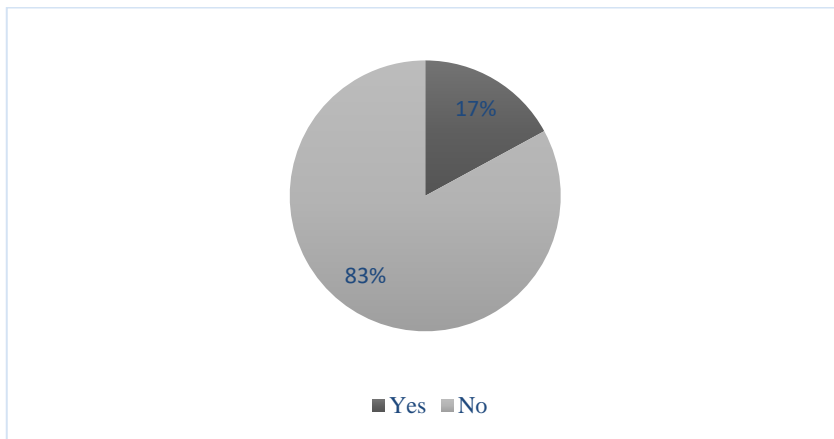
Figure no. 15. Do you currently have a teacher that you consider to be a life model?

The roles of the teacher include the role model to follow in life. The teacher, by the nature of his / her profession, must pass on to his / her students the desire to excel in the field they choose, as well as the adoption of a dignified, ethical behaviour in society. Unfortunately, the results show that only 17 % of the pupils currently have a teacher that they consider to be a worthy role model.

4. Conclusions

In conclusion, we can say that the didactic communication process is extremely complex and requires both good professional training and specific skills on the part of the teacher. Living in a century in which the speed of information dissemination is very high, teachers are required to adapt to change and facilitate the learning process by applying techniques designed to increase the attractiveness of classes and to ensure a correct knowledge of the studied field. Also, information and communication technologies have gained a great deal in the present time, and they have to be seen as an opportunity for access to a wide range of information that allows the students to constantly exploit their knowledge but also the ability of teachers to prepare continuously.

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