

THE IMPACT OF THE NEW TEACHING STRATEGY ON COMMUNICATION IN THE TEACHING OF NATURE AND SOCIETY

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Abstract: *The interdisciplinary nature and society teaching provides the teacher with many opportunities in the selection and application of different forms and forms of communication during the teaching process. Depending on the content of learning, the goal and tasks of teaching that we plan to accomplish during the lesson, methods and forms of work, we can plan different forms of communication in teaching. In order to be able to talk about the forms of communication in the teaching of nature and society, we must first know what constitutes teaching communication and what are its basic elements. Social changes in the 21st century require new competencies, and a special emphasis is placed on learning to learn, that is, the development of learning strategies that will equip young people for life and enable their further development through lifelong learning. Since communication is a complex, circular process, in order to better understand it, we must analyze its basic components. A simple communication model consists of the source or sender of the message, the message or the content of the message, the channel or medium for transmitting the message, and finally the recipient as the final destination of the communication process. These four components influence each other in such a way that from the content of the message, the recipient or the medium through which the message is sent, we adapt the other components in order to convey the message in the most effective way.*

Key words: *interdisciplinarity, changes, teacher, student, interaction.*

Introduction

Social changes in the 21st century require new competencies (such as interpersonal competences, competences in natural and social sciences, technological competences), and a special emphasis is placed on learning to learn, that is, the development of learning strategies that will equip young people for life and enable their further development through lifelong learning. Accordingly, the educational goals change, as well as the role of teachers and students in the teaching and learning process. Learning and teaching models, created in the last thirty years, such as the models of self-regulated learning, Zimmerman (Zimmerman, 1989), the transactional model of the teaching-learning process Hewitt (Huit, 2003), the model of interpersonal behavior of teachers Wubbels, Creton and Hoijmeiers (Wubbels, Creton and Hoymayers, 1985) and the like, assume that classroom activities should reflect real (life) learning rather than traditional academic tasks; that competence involves expertise rather than natural ability; that learning is constructive and self-regulating and not reproductive, and a social, cultural and interpersonal process, not just a cognitive one (Shuell, 1996).

In addition, newer models recognize the two-way nature of the teaching-learning process and explore the structure of different cognitive, motivational and social components and their multiplicative interactions in real-life situations Pintrich (Pintrich, 2000), emphasizing that the classroom context becomes crucial for understanding the teaching process and its consequences, that is, the context plays an important role in improving the understanding of what and how the student learns Turner and Meyer (Turner and Meyer, 2000). Jerome Bruner, as one of the leading theorists of constructivism, defines learning as a process in which the student actively constructs and builds new ideas or concepts based on current or previous experience, and the teacher's role in teaching is to encourage students to discover the rules and principles in content they learn by engaging them through appropriate teaching activities Kearsely (Kearsely 1994). It is clear from the above that constructivist learning theories emphasize that interaction is a key component of learning Anderson (Anderson, 2003).

Historically, until the mid-eighties of the last century, the literature on teacher-student interaction mostly dealt with aspects of teaching

Pianta, Hamre and Stuhlman (Pianta, Hamre and Stuhlman, 2003), while in the last thirty years the interest of researchers has shifted towards the relationship between students and teachers. Some earlier work on classroom interaction focused primarily on verbal communication by Flanders (Flanders, 1970, 1974), Giddan, Lovell, Haimson, and Hatton (Giddan, Lovell, Haimson, & Hatton, 1968). The fact is that most of the interactions in the educational process are realized through verbal communication, but the teacher has different roles during the interaction: educational, motivational, evaluative, managerial and social, so interaction is understood as a broader concept than communication. Duran (Duran, 2000) defines communication as "an actual relationship between two or more individuals in which they mutually influence each other." In the literature on education, there is still no precise definition of interaction as a multifaceted concept, but the most accepted definition is offered by Wagner (Wagner, 1994), according to which interaction is "a reciprocal event that requires at least two objects and two actions." Interaction occurs when these objects or events mutually influence each other". In recent times, interaction has been discussed very intensively in the context of distance learning, so three types of interaction are discussed: student-content, student-student and student-teacher Anderson (Anderson, 2003).

Educational communication is a central and important factor in the entire educational process. We define communication as "transmitting a message from one person to another so that they can understand it and, in a discussion, check it and, if necessary, act on it" (Vilotijevic, 1999). "For educational communication, we can say that it occurs as an interaction between two or more people, or one person with an inanimate source, in some process for the purpose of transmitting messages (information, notices) and creating conditions for the optimal (self) realization of a personality" (Matijevic, 2002). In the electronic encyclopedia Wikipedia (Wikipedia), communication is defined as a process that involves the exchange of information and uses a system of symbols to convey messages.

Feedback allows the teacher to assess the quality of his work based on the experience his students have about it. By receiving appropriate feedback, the teacher is able to motivate students to participate more actively in the learning process by encouraging their ideas, suggestions, and questions. Timely feedback enables both students and teachers to timely identify shortcomings in teaching, influence didactic,

methodical and communication skills, and recognize ways to make the teaching process more effective.

Robert Gagne emphasizes that every learning must have feedback if we want it to be complete. The learning and teaching process is a stimulus-response relationship, a communicative relationship between teacher and student in an interactive Jem circle (Yam, 1986).

Learning and teaching processes, that is, the teaching process, is based on mutual communication between teachers and students. Regardless of whether this communication is indirect or direct, verbal or non-verbal, in the teaching process we recognize the basic components of the communication process.

In traditional teaching, we most often meet teachers who give the main speech during the lesson while the students write down and remember what the teacher is talking about. In the modern teaching process, the teacher sees himself as helping students in the process of acquiring knowledge, understanding new ideas and practical application in everyday activities. The results that teachers achieve by communicating with their students in this way are more permanent and of better quality. Teaching aids used by the teacher are an important element in the process of communication in teaching. There is a well-known maxim: "What I hear, I forget; what I see, I remember: what I do, I know." Pictures, posters and practical demonstration of the content affect the improvement of the quality of communication. Using these tools, the teacher graphically and succinctly summarizes the most important facts, presents diagrams or schemes.

Teaching strategies refer to methods, procedures, ways of communicating and implementing actions in the teaching process. In didactics and methodologies, "the strategy includes methods and procedures, that is, the way of activating the participants of the educational process to achieve the tasks of upbringing and education" (Bognar, Matijevic, 2002). In methodology, teaching strategy implies "the teacher's ability to choose a certain methodical solution according to the specific situation, based on his knowledge, experience and assessment of the specific situation, including the student's right to participate in choosing the best strategy in the way that the teacher introduces as the best way to interact with students in continue" (Antic, according to De Zan, 2005). Much depends on the way of communication in class, what kind of learning strategy will be implemented in the class. The greater or lesser activity of students in the process of communication in class determines the results in the

quality and quantity of acquired knowledge. The relationship or level of interaction between the teacher and the students, as well as between the students themselves, also determines the teaching strategy.

In order to create a quality learning and teaching strategy, we must know the possibilities and limitations of all forms of teaching, the ways of achieving communication and the methods used by teachers during the teaching process.

How to create the most effective learning strategies and at the same time use all the advantages of certain forms of communication? In the literature, we find a large number of described techniques that facilitate the learning process and its effectiveness (Matijevic, Bognar, 2002; Matijevic, 1999). Thus, we find that modern teaching models can include: learning by research, learning by playing, learning by discovery, learning by solving problems, experiential learning. Each of these models provides a framework for teaching through communication in different ways.

Certain strategies are more suitable for working with a larger group, while certain learning strategies are more suitable for working in a group, pair or individually. (Matijevic, 1999) gives the following classification of strategies depending on the size of the group being worked with:

- Frontal form of work with a large number of students: oral presentation, demonstration with exercises, discussion, discussion, questions with agreements, video.
- Work in groups of five to ten students: seminar, workshop, game, brainstorming, "buzz" of groups, excursion, role playing, "breaking the ice", simulation, case study.
- Individual form of work: creating projects, tutoring (mentoring), open learning, i.e. distance learning.

This author also enumerates the criteria needed for choosing the appropriate learning strategy, namely: educational and educational goals, nature of the learning content, students' psychophysical characteristics and previous experiences, geographical location of the school, economic conditions, teacher's attitudes and competence.

The interdisciplinary nature and society teaching provides the teacher with many opportunities in the selection and application of different

forms and forms of communication during the teaching process. Depending on the content of learning, the goal and tasks of teaching that we plan to accomplish during the lesson, methods and forms of work, we can plan different forms of communication in teaching.

Depending on the teaching content and type of lesson, communication in the nature and society lesson can take place in several ways. Most often, communication takes place between teachers and students or between students themselves. Certain forms of teaching work and methods we use in a certain class form a framework in which certain forms of communication appear. Also, the way in which we communicate in class largely depends on which form of work or method we will use. These elements of the teaching process are interdependent and appear as a whole.

Communication in the teaching of nature and society does not differ in many ways from the way of communication in classes of other subjects. There are certain specificities, which to the greatest extent are related to the diversity of objects in which we can realize the teaching of nature and society, and they have an impact on the way communication is achieved.

In the literature, we come across numerous types of communication that differ according to classification criteria, and which depend on the number of participants in the communication process, the media that participate in that process, etc.

Bognar and Matijević (2002) talk about intrapersonal, personal and apersonal, then verbal and non-verbal, personal and apersonal, one-way and two-way, immediate, telecommunication, authoritarian and democratic communication. They also mention mentoring, multimedia, visual, computer communication.

Communication in the frontal form of work

The main feature of the frontal form of work is the work of one teacher with a large number of students. The teacher addresses the entire class at the same time, presents the same material, interprets, explains, demonstrates to everyone at the same time. He asks questions to everyone in the class, and the student who answers does so in front of the whole class (Vilotijevic, 1999). The teacher is mostly active, while the students are passive recipients of the teaching content. This kind of direct contact requires immediate, interpersonal communication that takes place in the teacher-student relationship. Communication is most often achieved verbally, which is certainly followed by non-verbal

communication. "One-way communication dominates, only occasionally supplemented by conversation or students' non-verbal feedback to the teacher about how much they understand him or how motivated they are to carefully follow his presentation" (Bognar, Matijevic, 2002). Prodanović and Ničković (1974) point out the occurrence of didactic diffusion in contact and communication between teachers and students as a negative feature of the frontal or, as they call it, collective form of teaching work. Contact and communication in the collective form of teaching work is characterized by their significantly more extensive than intensive development.

The biggest disadvantage of this form of work is that communication, which is realized in classes where the frontal form of work is applied, is usually one-way, in the direction from the teacher to the student, and often authoritarian. In this way, the student is mentally and verbally passive and a feeling of inferiority is imposed on him. During the lesson, cooperation between students is not recommended, but each student does the task on his own. Intrapersonal communication also appears in this form of work, where communication takes place within the student himself. In the frontal form of work, communication is not achieved in an equal way between the participants in the teaching process. There is a lack of timely feedback, the activity and motivation of students are reduced to a minimum, as well as the development of speaking skills and the power of observation.

The frontal form of teaching and communication that is realized within this kind of organization of the teaching process is related to traditional teaching according to Comenius' paradigm. This form of work still prevails in our schools after three centuries. The general communication model is presented most often as a circle that ends with feedback (Vilotijevic, 1999).

Communication in group form of work

The group form of teaching work arises as a result of the desire to overcome the shortcomings of the frontal form of work, which are the small thinking activity of students and inadequate feedback. "Students' group work represents a social form of work that is characterized by internal dynamics and didactic values." This social form of work makes it possible to remove some of the shortcomings of students' frontal work: greater opportunities for students to communicate, certain opportunities to respect individual differences among students, and the development of some positive personality characteristics (cooperation,

acceptance of interlocutors, culture of dialogue, punctuality, independence, etc.)" (Bognar, Matijevic, 2002).

In the course of the lesson in which we apply the group form of work, depending on the phase of the lesson, we will notice different ways of communicating. Articulation of the class of group form of teaching is suggested by many didacticists in a similar way:

- In the introductory part of the class, which is characterized by frontal organization of the class (Vilotijevic, 1999), the teacher gives notes about the content to be worked on in groups, an agreement is made and work tasks are taken over (Bognar, Matijevic, 2002). After that, the teacher forms groups in which students will work. In this part of the class, the teacher's verbal, direct communication with the whole class dominates, interpersonal and most often one-way if the students do not ask questions related to the content of the work or the organization of groups. The monologue method dominates because the teacher addresses the students, as well as the writing method if the teacher writes down the tasks for the groups on the blackboard.

The next part of the lesson is characterized by group work in which students solve the task without the direct help of the teacher. "The group is an organizationally closed community that does not have permanent direct work contact with the teacher, but discontinuous communication. That is why this form is classified as direct teaching" (Prodanovic, Nickovic, 1974). Depending on the size of the group, the quality of the achieved communication of the group members also depends. Didactics most often recommend groups of 3 to 6 or 5 to 7 students. "It is reliable that richer communication will occur in a group of three members than in a group of six members" (Bognar, Matijevic, 2002). However, Mori (1959) believes that a group of three students is unacceptably small, motivation in a small group is at a lower level, the spirit of competition is less present. He points out the advantages of a group of four members, where such a group is easily mobile, communication between group members is easier. When working on a joint task, students in the group communicate with each other verbally and non-verbally, directly and two-way. In groups that function without rivalry between members, symmetrical communication is realized, and where group members do not feel equality, asymmetrical interaction is realized. One member of the group, usually the leader of the group, assumes a dominant role and communication in the group is reduced to a minimum.

Communication in pair work

Work in pairs is a form of teaching work in which two students participate in the creation of the same task. "Activities in pairs achieve much more intense communication than in larger groups of students." There, both members must participate in the conversation, that is, they oppose their opinions. Introverted students more easily decide to tell their thinking to another student than to the teacher" (Bognar, Matijevic, 2002). In order for the work in pairs to lead to the expected results, it is necessary for the students to achieve good communication. This implies that they "express their opinion openly, respect their partner's opinion, prove their thesis, do not get angry with their partner, but respect and listen carefully" (Vilotijevic, 1999). Communication between students in pairs is interpersonal, two-way, immediate, verbal. If the pair is not made up of students of equal abilities, there may be asymmetry in communication where the better student will take the lead and the weaker student will withdraw from the work. Ničković and Prodanović (1974) call this phenomenon "the tyranny of the superior partner". Research has proven that students achieve better results by working in pairs than by working individually. This effect is achieved thanks to "plus communication", which Stevanović (2004) describes as communication in which the result is greater than the investment or the output is greater than the input.

Communication in the individual form of work

Definitions of the individual form of teaching work come down to describing individual work as an independent activity of students in the process of acquiring knowledge. "Individual work in teaching, learning and teaching starts from the psychological fact that each student is different from another student" (Sehovic, 2006). This form of teaching work arises as a need to maximally activate the student's thinking and bring out his abilities. "More than any other form of teaching work, the individual form exposes the student to all of his working abilities and provides him with very favorable opportunities to learn about his values and weaknesses." In this way, if it is properly didactically directed, this form of teaching work represents an inexhaustible source of positive motives for work and creativity, self-control and comparison with the achievements of other students in work" (Prodanovic, Nickovic, 1974). "By working alone, the student develops his independence, gains self-confidence and develops a love for work." The teaching of nature and society is very suitable for the application of an individual form of work, because it is based on interesting, authentic, obvious and accessible content for the age of the students" (Lazarevic, Bandjur, 2001). During the implementation of the course

nature and society, a number of contents can be processed by individual student work: performance of practical works, work and observation in the school garden, entering data into tables, displaying data and drawing schemes, graphs, work on a geographical map.

Conclusion

Creating a quality learning and teaching strategy requires knowledge of the possibilities and limitations of all forms of teaching, ways of achieving communication as well as the methods used by the teacher during the teaching process. Modern models of work in teaching provide a good framework for the implementation of teaching through communication in different ways. Here, we primarily mean learning through research, learning through play, learning through discovery, learning through problem solving, experiential and other learning. Certain learning strategies are more suitable for working with a large group, while certain learning strategies are more effective when students work in a small group, pair or individual work. In order for the teaching process to be effective, Matijević also proposes criteria for choosing an appropriate learning strategy, such as: educational and educational goals, the nature of the learning content, the student's psychophysical characteristics and experiences from the previous period, the teacher's attitudes and didactic-methodical competence, etc.

The interdisciplinary nature and society teaching gives the teacher the opportunity to choose and apply different forms and forms of communication in the implementation of the teaching process. Depending on the teaching content, and therefore on the determination of the type of lesson, the form of teaching work and the method we use, a framework is formed in which appropriate forms of communication appear.

In order for communication to be successful, the role of the teacher is extremely important, and it consists in preparing students for non-verbal and indirect communication, enabling them to interpret codes for the exchange of information. Also, it is the teacher's duty to remove distractions from the communication process as much as possible in order to make the message as clear as possible to the students. This is most often achieved through explanations and instructions that the teacher gives verbally or in writing before starting the broadcast or participating in some communication process.

Statement

The authors have equally contributed to the paper.

Conflict of interest

We declare there is not conflict of interest between authors.

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