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DIMENSIONING OF STRATEGIES IN CONTEMPORARY EDUCATIONAL WORK IN A HISTORICAL CONTEXT – FROM COMENIUS TO STREAM –

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Abstract. Quality in education has always been an imperative and a challenge for all educational systems. The development of educational theories and the advancement of practice should move in parallel and in step together with the aim of creating conditions for increasing the quality of education. In that context, new solutions are offered that will primarily be aimed at increasing the efficiency of the educational process, increased effectiveness and resultativeness in work. This, on the other hand, should produce new innovative solutions and creative opportunities that will be in the function of successful work and a happy life in future. One of those solutions is the stream strategy. Our attention in the paper is focused on several questions: Why this strategy, what it contains and what it refers to, how it is developing and what enables its application today in conditions of the existence of two worlds, real and virtual. Guided by the phrase that we must know the past in order to understand the present and plan the future, the focus of attention in this paper is directed towards the historical dimensioning of learning strategies in educational work, starting from Comenius to the present, to Stream - a strategy from the aspect of essence, meaning, basis and effects of application. Studies of the issue from this perspective lead to the conclusion that the values of the stream approach in modern educational work have a long history in their genesis in respective segments, but that it is also a solid foundation for a multitude of new challenges that will not only enrich the scientific and professional thesaurus but will also initiate new creative and efficient solutions for higher quality education.

Key words: strategy, quality, education, future.

Introduction

One of the tasks of modern teaching is focused on students and their needs to prepare themselves for lifelong learning. In order to realize this task, it is necessary to change the role of the teacher in order to introduce changes in the teaching process. Lecture teaching dominated by the frontal form of work in the so-called traditional schools should be replaced by teaching that will bear the attribute of modernity and which will be dominated by methods that approach the needs of today's students in terms of a greater incentive for independence in learning, creativity, learning through discovery, and learning by way of solving problems. The problem of modern teaching strategies is not a new one, but it is the subject of interest of numerous theoretical-empirical studies. However, attempts to modernize teaching are

modest, for which there are a number of reasons. Perhaps one of the reasons for this is the narrow understanding of the term modernization of teaching, so most often in that sense there is talk about the application of modern technical and technological means, for which in reality only a limited number of schools have material conditions and opportunities, which on the other hand leads to technologization of teaching. Another reason is the "comfort in the profession" in the sense of a faster and simpler realization of teaching, so the teacher's oral presentation in all its variants dominates in front of all students, who in turn are passive listeners. This defines teaching as passive for the student and teaching intended and directed towards the teacher. We assume, but we are also sure, that there are other reasons that are not the subject of interest in the paper but are subject of another research. On the other hand, requirements for quality in education are highlighted not only as an imperative but also as a challenge. In that sense, numerous solutions are being offered, which will primarily be aimed at increasing the efficiency of the educational process, increased effectiveness and efficiency in work, functionally intended for life and work in the 21st century.

Strategies in educational work

Strategies in didactics "include methods and procedures, i.e., a way of activating the participants in the educational process to realize the tasks of upbringing and education" (Bognar, 2002, p. 408). Stevanović (2000) speaks of teaching strategies as a set of relationships based on individual and simultaneous application of forms, methods and means of teaching work (p. 63). Teaching strategies are a unity and a mutual interaction of personal and impersonal media in the interactional relations of the teacher and students in different numerical formations, with procedures and methods in teaching situations that enable a high degree of cooperation, organization, realization of the evaluation of the creative teaching process" (Ibid., p. 63). Teaching strategies refer to methods and procedures used by teachers and students in teaching. They include media, sociological forms of teaching work, teaching methods, teachers and students, place (space) and time of realization of creative teaching contents (Stevanović, 2000, p. 63). Specialists in didactics classify teaching strategies in different ways, so they distinguish:

- Teaching strategies (problematic, heuristic, and programmed teaching);
- Learning strategies (learning by discovery, by doing research; simulation: play, role play, project, all of which have characteristics of experiential learning);
- Strategies of experiencing and expressing what experienced is (receptive, productive);
- Strategies of practice (learn how to learn, learning foreign languages, learning practical activities needed in learning and everyday life);
- Creation strategies (methods and procedures that encourage different forms of creation).

If social forms of work in teaching are taken as a criterion, teaching strategies are divided into:

- Strategies for working in large groups (lecture teaching, demonstration with exercises, discussion, questions with answers, video teaching);

- Strategies for working with small groups (seminar, workshop, extracurricular teaching, working in groups);

- Strategies for individual work (project, mentoring work and distance learning).

In literature several attempts at classification can be found, but they are usually divided into traditional and modern ones. In traditional teaching strategies, teachers are at the centre of activities and are subjects in teaching, while students are passive and are objects in teaching; they sit, listen and watch, teachers teach them in class, and they study at home. In this situation, teaching is separated from practice. Numerous are the weaknesses arising from the representation of traditional strategies. Here are some of them:

- Students work in large teams, rarely with a partner and in smaller research teams;

- Rigid and hierarchical relations between teachers and students;

- Students are not trained for applying methods and techniques of effective learning and independent research;

- Textbook, verbal and formal knowledge is emphasized, and creativity is neglected;

- Due to the lack of freedom, students experience school as a source of stress, and teaching and learning as coercion.

Modern teaching strategies are aimed at students, students are at the centre of the activities, they are subjects in the teaching process, they research, independently analyse, draw conclusions. They acquire new knowledge based on personal experience and knowledge construction; active knowledge aimed at achieving goals. Contemporary educational work should respond to the needs of today's community, taking into account several insights: in teaching strategies, information is grouped, critically interpreted and new consequences are anticipated; teaching strategies strengthen the internal motivation of the individual, their self-concept, and they contribute to building an image of one's own value and efficiency; through selected strategies, students should be trained for different approaches to different life problems and the ways to solve them. This highlights the need for modern strategies in teaching that should provide students with diverse knowledge such as methodological, technical, social, emotional, work-action and other competences. With the new strategies, students should be guided and trained for self-education.

STREAM Concept

Starting from the intention and the goal, we feel the need to present some basic insights about the STREAM concept itself. This concept is a new teaching and learning strategy that integrates several areas such as: science, technology, reading, engineering, art and mathematics in a way that emphasizes practical, interdisciplinary learning. This concept creates an opportunity to apply the acquired knowledge in real conditions as well as to develop critical opinion, developing the ability to solve problems and encouraging creativity. Each of the contents embedded in the concept offers a set of experiential learning skills and perspectives such as: science and engineering help students develop critical thinking skills and problem-solving abilities; technology teaches them how to use digital tools; reading promotes literacy and communication skills; art encourages creativity and self-expression; mathematics creates foundations for quantitative analysis. This concept is one of the ways for reducing the traditional barriers between the subjects in the educational work as well as

greater transfer of knowledge. As a field, science represents the process of systematic study of the natural world. In doing so, it includes observation, determination of assumptions, experiments and data analysis in order to understand the ways of functioning as well as causal connections and relationships. For example, playing with objects in water and observing the changes (heavy objects - stones sink, and light ones – paper or polystyrene float on the surface of the water), students define the hypothesis and conduct an experiment with different objects in order to test the hypothesis. The very participation in practical activities encourages critical thinking among students as well as understanding of certain scientific knowledge. Technology refers to the application of scientific knowledge in the design and manufacture of tools, devices and systems that solve problems and satisfy some basic human needs. It includes not only electronic devices but also simple tools such as pulleys, levers, wheels, ramps and scissors. Through practical research and experimentation with these tools, students are encouraged and they develop fundamental understanding and appreciation of how technology works and what its role is in everyday life. By using these tools and observing cause-and-effect relationships with the environment, students gain insights into how technology can be used to perform specific tasks, such as drilling into a tree to collect sap or using a magnifying glass to see more detail. The third area is reading as one of the essential components of education. Given the fact that it is not part of the two developmental concepts of STEM and STEAM, it is subject to numerous discussions and considerations. Namely, reading is an ability that is the basis of learning and a support for learning any teaching content. It initiates critical thinking, develops rich vocabulary and language skills, improves comprehension and understanding, and helps develop communication skills. In this concept, it is integrated with the rest of the fields, with the aim of bringing experiential learning as close as possible to students. The inclusion of the area of reading into the concept creates conditions for students to use printed sources such as manuals, diagrams, templates, sketches. Reading encourages creativity and self-expression through literary and artistic works. In the concept of STREAM, the area of engineering is also covered. As a branch of science, it refers to the construction of structures, systems and products that are invaluable for solving real problems of everyday human life. Along with the principles of mathematics, science and technology, new innovative solutions are offered that make life easier today. The purpose of this area derives from its functionality, so as to, through practical experiences such as "building" bridges, castles, beds, houses, encourage in the individual the process of understanding the construction process from the youngest age. Such game activities encourage the development of spatial reasoning, critical thinking, and problem-solving skills. With the support of construction games, imagination is encouraged and nurtured, as well as the ability to transform it into reality. The area of art has secured its place in the STREAM concept as a strong expressive means of creativity and imagination. Art has an important role in the concept because it not only encourages creativity and develops the ability to observe, but it also creates conditions for permanent knowledge gained through experiential learning. The last area in the concept is the mathematical field. The scientific field of mathematics studies numbers, quantities and shapes and their interrelationships as well as their connection to the real world, from recognizing and making patterns, to exploring shapes, measurements, and spatial relationships. The acquisition of mathematical content starts from early childhood through play and everyday activities such as counting, size, shape, dimensionality, etc. Encouragement creates a basis for the development of this kind of experiential learning as well as for the advancement of mathematical knowledge. By integrating science, technology, engineering, art and mathematics, this concept allows students to enrich their learning and experience in a unique and engaging way that encourages critical thinking, creativity and

problem solving. The STREAM concept offers an innovative approach to teaching and learning that will help students prepare for the challenges of the future.

Dimensioning of strategies in contemporary educational work in a historical context – from Comenius to STREAM

Guided by the phrase that we must know the past in order to understand the present and plan the future, the focus of attention in this paper is directed towards the historical dimensioning of learning strategies in educational work, starting from Comenius to the present, to Stream - a strategy from the aspect of essence, meaning, basis and effects of application. We chose Komenski for several reasons, and one of them is that, as the author of the first textbook on Didactics as a science of teaching, he gives his recommendations for the organization of the teaching and learning process. From Comenius to the appearance of the STREAM concept, there is a rich and fruitful pedagogical-didactic literature, but in the context of the subject of our interest, we focused attention on two teaching concepts - Comenius and STREAM. Considering the time in which Comenius worked and created, and in relation to the basic platforms on which the STREAM concept is based, there are numerous synapses connecting these two concepts. The analysis of the STREAM concept as a strategy of educational work in extracurricular activities can be understood if its essence is solidly known, if there is a reliable base of didactic-methodical knowledge and experiences as well as the foundations on which the concept itself is based from a historical perspective. Comenius left a wealth of ideas, recommendations and thoughts for organizing and implementing the educational process. The connection between Comenius's concept and the STREAM concept can be studied in numerous domains and on numerous issues. We focused on several issues in the paper. One of the issues studied by Comenius refers to the method of work in teaching, so he says that not only different teachers teach in different ways, but one teacher teaches different contents in different ways (Komenski, 1954, p.129). From today's perspective, this conclusion of Comenius is a huge step in the time in which he lives and works as it refers to the specificities not only of the subject contents covered in the teaching but also of the diversity in the way of their processing with students. Today, strategies in teaching as a process of teaching and learning appear as an imperative of the new era, but also as strategies that produce performance and success. When we talk about the method, there is also his attitude that the method should be natural, with which, at a reasonable level, the pleasant will be combined with the useful (Komenski, 1954, p. 120). Comenius also determined the basics for easy teaching and learning, from which we single out the following: to teach with the participation of the senses, and to teach and study what is for obvious use (Komenski, 1954, p. 116). Students will understand the content more easily if the teacher shows them the usefulness and value in everyday life of what they are learning, which implies awareness in the teaching process (Komenski, 1954, p. 128). This in turn will result in more permanent knowledge, as opposed to superficial and vague knowledge. Comenius recommends that in-depth knowledge, among other things, requires constant practice and the connection with the previously acquired knowledge. Practice is the way to achieve results in learning (Komenski, 1954, 142), which implies the activity of the learner. We will rightly conclude that practice in itself as a process requires awareness and activity and as such enables the upgrading of knowledge in quantity and quality, engaging the senses as well as enriching the experience, which ultimately results in developing the ability for life and work of each individual in the community. And if we compare Comenius's recommendations, principles and thoughts with the basic postulates of the stream concept,

their connection is evident because the STREAM concept is based primarily on the activity of the student, intellectual and manual, on socializing with others in the community, on the pragmatic value of knowledge, on the connection with real life situations, thus enriching students' experience. Learning through experience in the STREAM concept in certain segments is actually a further developed concept of some of Comenius's recommendations, because as Comenius observes, everything around us is linked and in an unbreakable connection, and everything happens in a continuous development, but the development should mean the continuation of what has already been started, its expansion and improvement, and not stopping and starting again from the beginning. As a matter of fact, in this segment too, a certain connection can be observed i.e., embeddedness in the foundations of Comenius's recommendation in the concept of STREAM (the developmental dimension from STEM, STEAM to STREAM). This is more than necessary because this is the only way to create the conditions for the full development of a person.

Conclusion

As a concept, strategy is as old as man and the conflicts in his community. It is a human construction and is expected to be expedient, and to respond to the needs of its constructor. In fact, strategy is a "collection of deliberate decisions" to achieve specific goals. On the other hand, the today's organized and institutionalized educational process tends towards the attributive feature defined as modern teaching, so in that context modern teaching emphasizes active learning and the application of methods, techniques, procedures and strategies in the direction of encouraging activity in learning. The need of the complex present is student-centred teaching, teaching in which the student participates as an equal stakeholder in the teaching process, which gives schools the epithet of quality. After all, a quality school is a school that supports teaching where the student is an active participant, a school that meets the needs of the student and in which teachers strive for better cooperation with students, as pointed out by Glasser (1994). The chosen strategies, methods and procedures should respond to the cognitive needs and stimulate the cognitive interests of the students, enable them to apply knowledge, enrich experiences, through increased activity, intellectual mobility and effort of the mind. In that sense, strategies in teaching have deep roots in their development, so their developmental dimension expresses the long historical genesis in multiple segments of human life and work.

Finally, we can freely say that in the teaching process is quite important in developing the thinking abilities, so that every individual can successfully respond to the demands of modern life. Hence, the goals in teaching, in addition to knowledge, are directed towards enabling the student to learn, that is, to learn how to learn.

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