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APPLICATION OF MODERN LEARNİNG MODELS İN THE EDUCATİONAL PROCESS

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Annotation

Learning occurs when people demonstrate what they didn't know before, or when they can now do skills they couldn't do before. Learning includes a number of theories and models. Some of these are based on a teacher-led approach, while others are based on a learner-led approach, which is related to the different ways people learn. Learning models are a specific application of learning theory that integrates theoretical principles and a structured framework of learning experiences. Modern learning models allow organizing the educational process in a more efficient and comprehensive manner. The application of these models in the educational process develops students' critical, logical and creative thinking and cooperation skills, as a result of which they solve problems, analyze and structure information, and actively participate in group work. Modern learning models are an important tool for introducing innovations in the educational process and have an important role.

Keywords: models, styles, categories, stages, learners.

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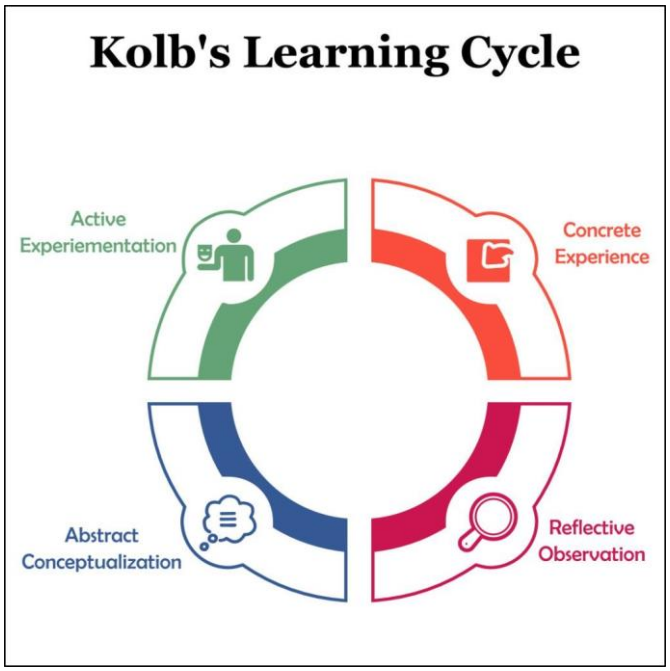
Introduction: In the teaching process, learning is considered as the process of acquiring and developing new knowledge, skills and habits. It is a process involving the learner actively receiving, summarizing and applying information. Learning is not just the acquisition of information, but also the connection, analysis and application of acquired knowledge with experience. The purpose of the educational process is to ensure that the student can actively participate in the learning activity, be in the position of a researcher, and be able to turn the learned knowledge into skills.

A learning model is a way of acquiring new knowledge and skills, and it is called a framework that defines a learning mechanism. Modern learning models include different technologies, pedagogical approaches and interactive methods according to the purpose of teaching and the needs of the learner. The purpose of these models is to make the learning process more effective and useful. Application of modern learning models in the educational process aims to increase the quality of education, stimulate learners and strengthen their motivation in the learning process.

Materials

Kolb's learning model – is a model based on experience-based learning theory that describes the different learning styles of individuals. This model was developed by the American psychologist David Kolb. Kolb's experiential learning theory incorporates two levels: four stages of the learning cycle and four learning styles. Kolb states that learning is the acquisition of concepts that can be flexibly applied in a variety of situations and is a four-stage process that is interrelated:



(https://www.simplypsychology.org)

1. **Concrete experience –** at this stage, the learner encounters direct experience. It can be a new experience or a new interpretation of an existing experience through different concepts. For example, a learner conducts an experiment in a laboratory or observes an environment.
2. **Reflective observation of the new experience –** the learner thinks about the new experience based on the acquired knowledge. At the same time, this is called the stage of reflection on the experience. After the experiment, the learner analyzes the successful and unsuccessful aspects.
3. **Abstract conceptualisation –** reflection leads to the emergence of a new idea. Experiences gained at this stage form theoretical concepts. The results are summarized by people. The learner connects theories with results.
4. **Active experimentation –** newly created or modified concepts give impetus to experimentation. The theoretical knowledge learned is applied in real life and experiments. The learner applies his ideas to the environment, conducts new experiments and performs the same task in different conditions.

In the first stage, the learner gets acquainted with innovations, which brings him to the next stage, where he reflects on the experience. A complete understanding of this experience is made possible by the learner's interpretation.

According to Kolb (1984), learning is an integrated process in which each stage is linked to the next stage. However, effective learning only occurs when the learner is able to complete all stages of the model.

Learning styles. As mentioned above, Kolb's learning model includes four learning styles based on a four-stage learning cycle. Kolb explains that each person prefers a certain different learning style and these styles are influenced by various factors (social environment, educational experiences, etc.).

1. **Sensory learners (Divergents) –** these people are sensitive, dreamy and emotional, and can look at events from different perspectives. They have a highly developed imagination and observation ability. They are good at creativity and problem solving.
2. **Assimilators –** the assimilation learning style involves a concise, logical approach. Assimilators prefer reflective observation and experience. They have the ability to summarize and structure information. They are strong in the process of scientific research, in assimilating a wide range of information and presenting it in a logical form.
3. **Convergents –** people with this learning style solve problems and can use what they learn when solving practical problems. They prefer technical tasks and apply theories to real events.
4. **Adaptives (Accommodators) –** adaptives prefer an experimental approach, implement new experiences. They are always open to learning and flexible decision-makers.

Application of Kolb's model in education is implemented in the form of lesson planning (when planning a lesson, the teacher should work to cover all stages of the model), practical tasks (examples from life are brought so that students can apply knowledge).

The VARK learning model (Visual, Auditory, Reading/Writing, Kinesthetic), is designed to identify different learning styles and incorporates the four VARK methods of learning information – visual, auditory, reading/writing, kinesthetic. This model determines which method people prefer to acquire new knowledge. The VARK model was introduced in 1987 by Neil Fleming. Fleming proposed four methods that reflect the experiences of teachers and students. Main categories of VARK:

Visual	**Auditory**	**Reading/Writing**	**Kinesthetic**

- **Visual –** visual learners prefer graphs, charts, pictures and tables. They understand and remember information better through visual means. Visual materials such as maps and charts simplify the learning process.
- **Auditory –** auditory learners prefer lectures, discussions and audio recordings. They learn course material better by speaking or listening to others.
- **Reading/Writing –** this type of people works mostly with text materials, articles, resources. Many teachers and learners prefer this method. Writing and taking notes makes the learning process easier.
- **Kinesthetic –** kinesthetic learners learn through touch and activities. Experience, laboratory work is more important for them. Practice and activities accelerate learning.

Ways of applying the VARK model in the educational process: For the visual learning style – preparation of materials, presentations, working with maps. For auditory learning style – lectures, discussions, audio recordings. For the reading/writing learning style – written materials, organizing notes, assignments. For kinesthetic learning style – practical experiences, models, role plays, real examples.

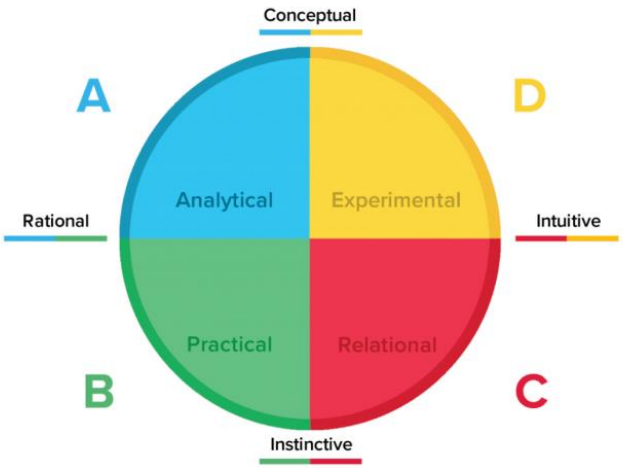
The Gregorc learning model, developed by Anthony F. Gregorc in 1982, is a model aimed at understanding the learning styles of individuals and provides an in-depth study of the workings of the mind. This model consists of four main categories that allow us to better understand the way people think and learn. Gregorc explains these categories in terms of two main dimensions:

1. **Perceptual dimension:** Determines how individuals perceive information. **Concrete –** presenting concrete information through feelings. **Abstract –** receiving abstract information through concepts.
2. **Organization dimension:** Explains how individuals organize data: Random (Variable) – free approach. Sequential – logical ordering.

The application of the Gregorc learning model in the educational process enables planning lessons based on the different learning styles of students: 1.

Determination of learning styles of students, 2. Planning lessons according to the learning style.

Herrmann's brain dominance model (Herrmann Brain Dominance Instrument – HBDI) allows to analyze different thinking styles and dominance of the brain. This model was developed by Ned Herrmann in 1970. Herrmann divided this model into four main quadrants of brain activity to explain different ways of thinking:



(https://criticalfactors.com.au)

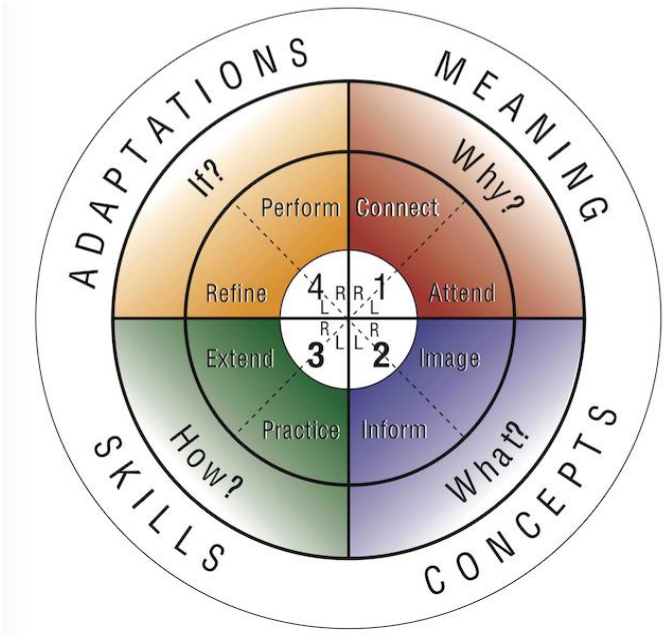
1. **Analytical (Left Hemisphere – Upper Quadrant) –** logical, analytical thinking based on facts and data. Mathematical problem solving is in the foreground. Majors related to this way of thinking: engineering, mathematics.
2. **Organizer (Left Hemisphere – Lower Quadrant) –** thinking based on organized, consistent, systematic organization. Ability to perform tasks and organizational processes. Specializations related to this way of thinking: administration, law, management.
3. **Creative (Right Hemisphere – Upper Quadrant) –** creative, innovative thinking. Openness to try different approaches, willingness to come up with new ideas. A specialty related to this way of thinking: design.
4. **Empathic (Right Hemisphere – Lower Quadrant) –** thinking based on human relationships, feelings. Teamwork, building relationships is in the foreground. Specializations related to this way of thinking: education, psychology.

Herrmann's brain dominance model can be used in the teaching process to apply more effective teaching methods based on individual differences. Ways of applying the model in the educational process: 1. Determining students' thinking styles, 2. Customizing lesson methods, 3. Effective management of differences arising in group work.

The Felder – Silverman learning model is a learning model developed by Richard M. Felder and Linda K. Silverman that suggests that individuals have different approaches to learning. The purpose of the model is to determine which methods students prefer in the learning process and organize the teaching process accordingly. In the Felder – Silverman model, learning styles are characterized by four dimensions:

1. **Active – Reflective.** Active learners learn and apply what they learn through discussion and experience. They prefer interaction and cooperation in groups. Reflective learners analyze and think about information in a quiet environment. They like to work with themselves and pay attention to details.
2. **Sensory – Intuitive.** Sensory learners focus on facts, information, and details. They learn based on examples. Intuitive learners work on new ideas and theories. They prefer to look from a broad perspective and see various details.
3. **Visual – Verbal.** Visual learners prefer to learn through sight, diagrams, graphs, pictures, visual aids. Verbal learners learn best through oral information, discussions, and listening.
4. **Sequential – Global.** Sequential learners prefer to learn information in a systematic, sequential manner. They are strong in problem solving and learning. Global learners tend to understand topics in a broad sense. They grasp the general concept without studying the details.

Application of the model. The Felder – Silverman model plays an important role in designing educational programs and developing individual learning processes. For example, teachers can present lesson materials in two ways: both visually and verbally. Practical exercises can be given for active students. Individual work can be given to each student.



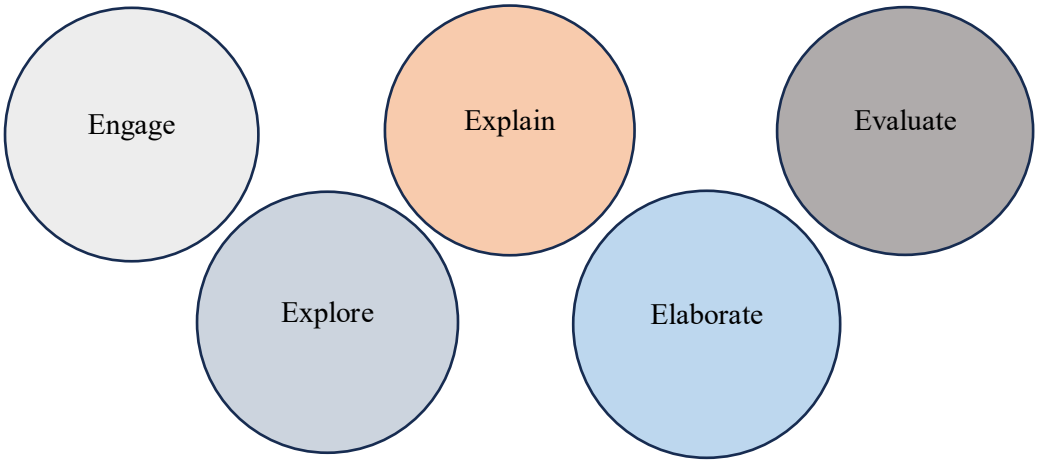
The 4MAT model is a learning model first developed by Bernice McCarthy in 1980. This model enables individuals with different learning styles to learn more effectively. According to the 4MAT model, people go through four main stages in the learning process: (https://aboutlearning.com)

1. **Why?** It is the stage of involving students to the topic. At this stage, the essence and importance of the topic is explained to them. "Why is this topic important for us?" the question is answered.
2. **What?** At this stage, facts related to the topic are presented. The main purpose of the stage is to explain the essence of the topic to the students. "What are the main concepts of this topic?".
3. **How?** This stage is based on applying what students have learned. It incorporates practical activities, assignments and application. "How can we use this knowledge in real life?".
4. **If?** It is the stage where knowledge is creatively explored and applied. At this stage, students are given opportunities to express what they have learned in their own way. "What would happen if we applied this knowledge in another situation?".

The application of the 4MAT learning process offers different approaches to lesson planning for different learning styles. Application of this model ensures that every student is actively involved in the learning process.

Lesson planning. It involves planning the lesson according to the stages of the 4MAT model (why?, what?, how?, if?). It is important to use different methods and application methods when applying the model in the educational process. During assessment, various methods can be used to assess the impact of each phase of the 4MAT model on students and to measure learning outcomes.

The 5E model. This model, developed by the Biological Sciences Curriculum Study (BSCS) in 1987, has the function of developing students' abilities to formulate problems, observe, analyze, draw conclusions, determine solutions to problems, and communicate results. The 5E model allows teachers to organize lessons according to the needs of learners. At the same time, this model is an important tool for teachers to engage learners in topics about which they have no knowledge. (Teachers of the ASTER project). The 5E model consists of 5 stages: 1. **Introduction and curiosity (Engage), 2. Explore, 3. Explain, 4. Elaborate, 5. Evaluation.**



- **Introduction and curiosity.** Its purpose is to attract the attention of the learners, increase their interest and introduce them to the subject . One of the main goals in stage 1 of the model is to build motivation that will make the learner want to learn more about the next topic. For this, various pictures, diagrams, surveys, etc. can be used.
- **Explore.** Learners work on a given problem. They acquire the skills of observation, research, questioning, and communicating with their peers. This phase of the model involves activities and inquiry based on a central question that prompts learners to develop their skills.
- **Explanation.** In the explanation phase, learners present the results of their research, describe their understanding, and ask questions about the research. This stage is the main part of the

5E model. After the learners have presented their explanations, the teacher presents the scientific information. The teacher guides the learners' responses in a structured way, during which he can use different tools.

- **Elaborate.** This stage should guide the students to apply the new concepts gained while consolidating their knowledge and skills. The purpose of the reinforcement phase is to help a deeper and more comprehensive understanding of the concepts. Learners can conduct additional research, share information, and apply their knowledge and skills to other subjects.
- **Evaluation.** All structured explanations and information are presented in the form of a report. At the end of the process, the learning level of the students is evaluated. At the same time, self-evaluation of learners is also possible at this stage. Assessment is based on a final report such as an exam or assignment.

Conclusions

The continuous and appropriate, consistent and comprehensive use of research – based teaching models used to realize the set goals allows students to learn information about the subject and organize the teaching process effectively.

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