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DIDACTIC POSSIBILITIES OF MNEMONIC TECHNOLOGIES IN DEVELOPING THE COGNITIVE ACTIVITY OF FUTURE PRESCHOOL EDUCATION TEACHERS

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Abstract: The article examines the scientific and pedagogical potential of mnemonic technologies in developing the cognitive competencies of prospective preschool teachers. From a pedagogical perspective, the influence of mnemonics on the processes of perceiving, processing, systematizing, associatively linking, encoding, and retaining new information in long-term memory is analyzed. The didactic potential of mnemonic techniques and tools that facilitate the effective acquisition and retention of learning materials by prospective preschool teachers is discussed. It is substantiated that the purposeful and gradual integration of mnemonic technologies into the educational process, taking into account students' individual cognitive characteristics, contributes to the development of cognitive activity, logical thinking, attention, memory, and independent learning competencies. The study is aimed at developing methodological approaches to improving the professional preparation of students majoring in preschool education.

Keywords: mnemonics, mnemonic technologies, cognitive competence, memory, new knowledge, information encoding, associative thinking, retention, prospective preschool teacher, professional training, educational technology.

Today, within the higher education system, the preparation of future preschool education teachers for their professional careers involves not only the acquisition of theoretical knowledge but also the development of cognitive skills that enable them to process information efficiently, comprehend and organize content, apply acquired knowledge in practical situations, and retain it in long-term memory. In particular, the ability of students majoring in preschool education to understand the developmental



characteristics of children, analyze pedagogical situations, master methodological materials, select appropriate pedagogical technologies, and use them effectively in their future professional practice is directly associated with their capacity to process, comprehend, and retain information effectively.

Globally, educational reforms are increasingly shifting from the transmission of ready-made knowledge toward the development of competencies that enable learners to acquire knowledge independently, process information, engage in critical and creative thinking, solve problems, and regulate their own learning activities. For example, the OECD Learning Compass 2030 framework identifies learners' agency and the integrated development of knowledge, skills, attitudes, and values as important directions of contemporary education. OECD analyses also emphasize the growing importance of cognitive skills, including critical thinking and problem-solving, in education for the twenty-first century.

Modernizing the education system in Uzbekistan, improving the quality of education, introducing modern pedagogical technologies, and preparing competitive professionals are among the priority areas of state policy. The Concept for the Development of the Higher Education System of the Republic of Uzbekistan until 2030, approved by Presidential Decree No. PF-5847 dated October 8, 2019, identifies the introduction of advanced educational technologies and the strengthening of education aimed at developing practical competencies as important priorities. In the field of preschool education, the Concept for the Development of Preschool Education until 2030, approved by Presidential Resolution No. PQ-4312, and the "Uzbekistan–2030" Strategy identify improving the quality of education, expanding educational coverage, and promoting the use of modern technologies as priority areas [1].

The use of mnemonic technologies in the educational process represents an interdisciplinary research area situated at the intersection of cognitive psychology, educational psychology, and pedagogical methodology. In explaining the theoretical foundations of these technologies, the processes through which memory receives,



processes, stores, and retrieves information serve as an important methodological basis. The works of A. Baddeley reveal the structural components of working memory and the mechanisms through which information is integrated on the basis of different modalities and semantic units [1]. This approach demonstrates the importance of acquiring new knowledge not as isolated and disconnected pieces of information, but as an organized system linked to previously acquired knowledge.

Research conducted by J.Dunlosky and colleagues has examined the role of cognitive strategies that enhance learning effectiveness, particularly retrieval practice, distributed practice, and active processing of knowledge [2]. Their findings indicate that actively retrieving and meaningfully processing learning material is more effective than repeatedly rereading it. This provides a basis for considering mnemonic technologies not merely as tools for memorization, but as methodological instruments for organizing active cognitive processing.

In his study of the contemporary application of mnemonic strategies in education, A.L.Putnam considers them strategies that facilitate the integration of new information with existing knowledge, enhance retention, and support the retrieval of relevant information [3]. Research has identified the potential of various mnemonic techniques, including keywords, imagery-based associations, acronyms, the method of loci, and other mnemonic devices, to structurally organize learning materials.

A meta-analysis conducted by C.Twomey and M.Kroneisen examined the mnemonic effectiveness of the method of loci, which involves remembering information through spatial and imagery-based associations [4]. The findings suggest that utilizing associations among images, spatial locations, and meaning can strengthen the process of information retention. From this perspective, the application of mnemonic technologies in the education of future preschool teachers, particularly for learning pedagogical concepts, methods, pedagogical situations, and professional information, can be considered scientifically and methodologically promising.



Y.Weinstein, C.R.Madan, and M.A.Sumeracki, in their examination of the application of findings from cognitive science to education, emphasize that effective learning strategies produce optimal outcomes when they are integrated with the content and structure of the educational process [5]. This approach suggests that, when using mnemonic technologies, greater importance should be attached not simply to the application of a particular technique, but to its purposeful selection in accordance with didactic objectives and its integration into the learning material.

Pedagogical research in Uzbekistan has also increasingly addressed the integration of theoretical knowledge with professional practice among future preschool education teachers, as well as the development of their competencies to apply acquired knowledge in specific pedagogical situations. In particular, M. B. Tairova emphasizes the system of theoretical knowledge within the professional pedagogical competence of future preschool teachers and highlights the importance of their ability to apply such knowledge in specific pedagogical situations [6]. This approach is particularly relevant to the present study, as it suggests that the outcomes of using mnemonic technologies should be assessed not merely in terms of information retention, but also in terms of students' ability to retrieve and apply acquired knowledge in professional and pedagogical practice.

The analysis of the literature indicates that although the potential of mnemonic techniques for memory and the acquisition of new information has been sufficiently investigated, the development of cognitive competencies among future preschool education teachers through the integration of mnemonic technologies with professional and pedagogical content, as well as the assessment of their effectiveness based on established criteria, requires further investigation as an integrated methodological system. This research gap defines the principal direction of the present study.

The research methodology was based on the integration of cognitive, competency-based, learner-centered, and activity-oriented approaches. Mnemonic



technologies were employed as didactic tools designed to activate the processes through which future preschool education teachers comprehend, process, encode, associate, retain, and retrieve new knowledge.

The findings indicate that the purposeful use of mnemonic technologies enhances students' ability to systematize educational information, establish associative connections, retrieve knowledge, and transfer acquired knowledge to pedagogical situations. Accordingly, it is recommended to develop a bank of mnemonic tasks for preschool education courses, integrate these tasks into the educational process in a systematic and progressive manner, and evaluate their effectiveness using comprehensive assessment criteria.

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