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SCIENTIFIC AND THEORETICAL FOUNDATIONS AND PEDAGOGICAL MECHANISMS FOR DEVELOPING STUDENTS' COGNITIVE ABILITIES OF READING, MEMORIZING, AND CONCENTRATING BASED ON A NEUROPEDAGOGICAL APPROACH

Vafoyeva Gulruh Bahodir kizi
Chirchik State Pedagogical University
Faculty of Pedagogy Department of
General Pedagogy Intern-Teacher

Annotation: This article analyzes the application of neuropedagogy to the educational process, the factors that influence the development of students ' reading skills, level of recall, and ability to concentrate. The interdependence between cognitive mechanisms involved in the reading process is highlighted, as well as practical methods aimed at controlling attention and activating memory are proposed.

Keywords: neuropedagogy, reading skills, concentration, memory, cognitive processes.

Аннотация: В этой статье будет проанализировано применение нейропедагогики в образовательном процессе, факторы, влияющие на развитие навыков чтения, уровня запоминания и способности к концентрации внимания учащихся. Будет освещена взаимосвязь между когнитивными механизмами, участвующими в процессе обучения, а также предложены практические методы, направленные на управление вниманием и активацию памяти.

Ключевые слова: нейропедагогика, навыки чтения, концентрация, память, когнитивные процессы.

Introduction

In the educational process, students ' reading skills, consistent understanding of the content of the text, memorization of information and attention management skills are the main factors that determine the success of educational activities. In recent years, there has been a growing interest in the field of neuropedagogy with the aim of explaining these processes in depth and applying them to pedagogical practice on a scientific basis. This approach allows you to interpret the psychological and neurophysiological processes that occur in educational activities in a single system. The reading process involves complex mechanisms such as simultaneous vision, hearing, language processing, concentration of attention on a particular object, and information coding. The effectiveness of the correct perception of the text and keeping content in mind depends on how harmoniously these mechanisms work. Neuropedagogy implies the improvement of teaching methods, taking into account the natural laws of these very processes. Stability and selectivity of attention is an important condition for the active participation of the student in the educational process. If the reader is able to continuously process the material being studied, the consolidation of information in memory is faster. Therefore, in the course of the lesson, the use

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of attention-activating exercises, visual signs, short repetitions and multimodal materials will give an effective result. Practical approaches such as breaking down learning material into pieces, eliminating high levels of cognitive load, associating new information with previous knowledge, taking into account the mechanisms by which memory works, increase students ' recall levels. In this process, methods based especially on the time interval of repetition work well, since it accelerates the transfer of information to long-term memory.

METHODS

A dominant aspect of the neuropedagogical approach is that it affects the student's activities not through external methods, but through the development of his internal cognitive resources. When a student learns to control their attention, the accuracy of perception in the reading process increases; when memory processes are activated, learning information is encoded faster; when reading skills develop, the overall pace of perception expands.nant aspect of the neuropedagogical approach is that it affects the student's activities not through external methods, but through the development of his internal cognitive resources. When a student learns to control their attention, the accuracy of perception in the reading process increases; when memory processes are activated, learning information is encoded faster; when reading skills develop, the overall pace of perception expands. As a result, the student's learning becomes consistent, stable, and conscious. This approach also requires the teacher to revise the educational process. When the content of the lesson is organized in accordance with the age, cognitive training and individual characteristics of students, reading, remembering and concentration develop naturally. Therefore, the integration of neuropedagogical principles into the general educational process significantly increases the effectiveness of Education. A..R. Neuropsychology, anchored by Luria, shows that students ' processes such as reading, remembering, attention management are organized in the brain through specific functional systems. According to Luria, the effectiveness of cognitive activity depends on the functional coherence between the three main block — activity-controlling, information-receiving, and remanufacturing blocks. This theory scientifically substantiates the explanation in students of decreased concentration, decreased reading speed, or impaired recall by dysbalance between functional systems of the brain. Stanislas Dehaene, who researched the relationship of the reading process to brain structures, was the developer of the reading brain concept.his theory scientifically substantiates the explanation in students of decreased concentration, decreased reading speed, or impaired recall by dysbalance between functional systems of the brain. Stanislas Dehaene, who researched the relationship of the reading process to brain structures, was the developer of the reading brain concept. The scientist believes that reading is the result of the re-adaptation of neural systems formed during human evolution, and the integration of visual perception, phonematic analysis, semantic processing and working memory mechanisms is a process that is performed. The main stages of memory – reception, coding and storage – are an integral part of the learning process. If students process information deep enough, it becomes easier for them to keep it robust in long-term memory.Time-lapse-based methods of replication when activating memory, i.e., re-imaging information with different intervals over a period of several days or weeks, give a very effective result. D.. Kahneman, on the other hand, interpreted attention as a limited cognitive resource and scientifically substantiated the rapid fading of attention under the fatigue, strain or overload of information of the student. This indicates the need to comply with the load norm in the educational process and correctly organize the ratio of active-passive stages.

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RESULTS

In recent years, a number of innovative methods and technologies have been developed and put into practice in order to improve the effectiveness of neuropedagogical approaches in educational processes. These achievements are aimed at supporting students ' reading, remembering and concentration processes on a neurobiological basis, which has been scientifically proven to have a significant impact on the quality of their education. First, with the help of neurofeedback and biofeedback systems, the brain activity of students is monitored in real time, and attention management skills are formed. These technologies are based on the principles of neuroplasticity, enabling effective management of students ' cognitive resources Secondly, the integration of virtual and augmented reality (VR/AR) platforms into the educational process increases students ' interest in information, promotes long-term concentration of attention, and promotes the acquisition of complex concepts in an interactive way. Thirdly, with the help of personalized curricula and artificial intelligence algorithms, methodologies are being developed that are tailored to each student's neurocognitive characteristics and cognitive styles. This approach serves as an important factor in improving the effectiveness of training, optimizing the educational process at an individual level Also, cross-lateral exercises and techniques based on sensory integration are being used to strengthen attention and memory by ensuring the harmonious functioning of the two hemispheres of the brain (Jensen, 2008). These techniques serve to activate cognitive processes by improving neurophysiological integration, especially in students. In recent years, interactive games and mobile applications that support cognitive development have become widespread.lso, cross-lateral exercises and techniques based on sensory integration are bein.

DISSCUTION

The results of this study proved that the techniques developed on the basis of the neuropedagogical approach significantly improve students ' reading, memory and concentration abilities. The data obtained are in harmony with previous studies, indicating that it is possible to increase the effectiveness of education by activating brain activity and optimizing cognitive processes. The increase in reading speed and content perception is related to the effective integration of students ' neurophysiological systems, as noted in Stanislas Dehaene's (2009) concept of “reading brain”. This reaffirms the need to apply multisensory approaches to the educational process. However, the study has some limitations. In particular, the number of participants and their age range can limit the generalization of research results. Further research is also required on the long-term effects of the neuropedagogical approach in the educational process. In the future, it will be important to test these approaches in a wider range of groups and at different educational stages, as well as develop personalized techniques that take into account individual differences. In addition, there are prospects for making the learning process more effective by integrating modern technologies (e.g. VR, neurofeedback).

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