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THE INTEGRATION BETWEEN NEUROPEDAGOGY AND CREATIVITY IN HIGHER EDUCATION

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ABSTRACT

Neuroscience and neurodidactics, and thus neuropedagogy, are playing an increasingly important role every day in academic institutions seeking to optimize their educational processes. Creativity is a person's ability to generate ideas, find innovative solutions to problems, and create something new and original. Creative inviduals are able to notice unexpected connections between phenomena and objects and go beyond standard thinking. To do this, it is needed to use logic and imagination at the same time - that is, analyze the problem and think outside the box. Therefore, this paper aims to review past research studies to analyze the integration of neuropedagogy and creative approach in education.

KEYWORDS

Neuropedagogy, neuroscience, education, creativity, creative education

Introduction

Neuropedagogy is an applied interdisciplinary scientific field aimed at building the educational process taking into account data on brain development, effective teaching and learning methods, brain organization in the processes of mastering educational material, taking into account the characteristics of the brain development of students and educators. Neuroeducation or neurodidactics (neuropedagogy) is a new field of research in which both educators and neuroscientists collaborate. This field uses the latest advances in neuroscience, psychology, cognitive science and education to improve teaching methods and school curricula. Neuropedagogy is a science whose specialists develop teaching methods that allow you to get the best possible results from classes with people of different ages: both children and adults. They are based on modern research into the functioning of the human brain: the stages of its formation and maturation, the features of its development and function. The goal of neuropedagogy is to optimally and creatively solve pedagogical problems in practice, using knowledge about the individual characteristics of the brain organization of higher mental functions. In simple words, through neuropedagogy it is possible to:

- select pedagogical techniques that suit the level and abilities of a particular student (and lead each of them to successful results);

- ensure a high level of knowledge acquisition;
- stimulate further active development of the brain and cognitive abilities (which entails even greater learning results);
- understand what the learning difficulties of a particular student are and help them overcome those difficulties;
- involve students in the learning process (after all, neuropedagogy takes into account the leading type of activity and carries out learning through it, and does not offer dry learning at a desk with cramming).

The methods of neuropedagogy are scientifically proven and effective in practice, we confirm this with the results of our students and the students of our colleagues. Neuropedagogical exercises are universal - they can be used by any educator in any classes/lessons, thereby increasing their effectiveness and taught without pressure and coercion. The dynamics of the learning process are based on neuroscience, the main task of which is to apply in the school environment knowledge about how the brain learns and what stimulates the development of its cognitive and other functions.

Neuropedagogy uses all the discoveries and achievements of neuroscience and cognitive sciences over the past few decades. The most significant of them:

- Brain plasticity and neurogenesis. Brain plasticity or neuroplasticity is one of the most significant discoveries in the field of neuroscience. Our brain is mobile, “plastic”, in other words, capable of adapting throughout life. In addition, it is capable of constantly creating new neurons and neural connections when properly stimulated.
- Mirror neurons. Mirror neurons are a group of brain cells that are activated when we perform an action and also when we observe other people performing that action. The same thing happens when expressing emotions. Therefore, it is believed that mirror neurons are the basis of empathy and the ability to speak. Knowledge about mirror neurons is very important for neuropedagogy or neurodidactics.
- Emotions and learning. Emotions are interconnected with cognitive processes, so the key to neuroeducation is the ability to manage emotions so that they not only influence, but also contribute to the learning process. Children need to be taught to be aware of and control their feelings and behavior. It is important that they understand when they are angry or sad and know how to manage their emotions.

Neuroeducation can help students with learning disabilities as well. Neuroscientific knowledge not only helps to understand how the brain learns, but also how brains that have learning difficulties work. There are different types of learning disabilities, from dyslexia and autism to ADHD. Neuropedagogy helps to maximally adapt the educational process in order to increase the learning ability of children who have difficulty maintaining high performance in the class. The most important thing, in case of difficulties with learning both at home and at school, is to understand exactly what problems we are dealing with, what difficulties the student is experiencing and how his brain works. Thus, it is advised to receive all the necessary tools of neuropedagogy in order to adapt the educational process taking into account this knowledge and develop strategies to improve their learning ability.

Psychology of Creativity

Currently, the industrial era in developed countries is being replaced by an era of innovative development, when knowledge, high-tech technologies and new developments play the main role. National innovation systems are being created, the goal of which is to build an economy based on innovation. Innovation processes cover the economy, social sphere, politics, education, science, technology, production, business and other areas. In an innovative society, new ideas and innovations play a major role in its development. At the innovative stage of development, information and knowledge become the subjects of creative thinking, the product of which is new ideas that have a great socio-economic effect. Moreover, when moving to a new stage, all the achievements of the previous stages are preserved and developed at a higher level. Creativity in developed countries is becoming a permanent practice and the main source of competitive advantage. In almost any field of production, the winner is ultimately the one who has creative potential. The task of higher education institutions is to prepare specialists of the future. Today, modern education implements a human capital strategy, which includes specialist professionalism, developed individual abilities, intellectual potential, and professionally significant personal characteristics. For this purpose, an appropriate educational environment, methodology and organization of education are being formed using new intensive educational technologies and creative approaches to building the educational process. The main one is the transition from reproductive to creative education.

Creative education is strengthening its position as an innovative type of education, the main focus of which is the formation of creative thinking, the development of creative abilities and intellectual potential, and the search for new approaches to solving modern problems. It is creative education that has the potential for creative self-development, self-determination and personal self-realization. These provisions are reflected in the national educational initiative for the development of innovative higher education, which defines the development of a creative personality and the cultivation of innovators capable of continuous creative self-development and self-improvement as a task of paramount importance.

Creative education is focused on the development of a person's creative abilities, on consolidating in his professional consciousness the attitude towards innovation by transforming knowledge and skills into development potential. This is the science and art of creative learning. It encourages us to learn creatively, to become creators of ourselves and creators of our future. It expands the range of vision of development problems and the design of options for their solution. This should be the main thing in the activities of a modern researcher and ensure his success in competition when changing economic conditions in the processes of accelerating technological progress over time.

In creative education, the most comprehensive and effective method is learning by action, which is carried out in the form of solving real professional problems, analyzing and playing out specific situations, joint activities of a study group, and independent work. It integrates fundamental, high-tech, promising practical (advanced), continuous, individual variable, project-innovative education, increasing the research innovation potential of the modern innovator. Creative innovative education helps solve the problem of professional readiness of specialists in demand on the labor market, who are able to set their own innovative pace in socio-economic development.

Discussion

The main area of application of neuropedagogy is university (school) - the place where students gain knowledge. In order to make the learning process as effective as possible, professors and educators must understand how the brain works, how it remembers, processes, records, stores and recalls information. In addition, educators should be aware that the structure of the school classroom, the tasks students complete, words and emotions significantly influence the development of students' brains and the way they learn. Therefore, we already know that with the help of advances in neuroscience we can significantly improve school performance. How to apply them in the educational process? The most important thing is not only to passively study, but also to apply the information received in practice.

In the psychology of creativity, there are currently cognitive, psychometric approaches, as well as mystical, motivational, social-personal and others, on the basis of which a number of concepts have been developed that define the concept of “creativity”. Further work to create conditions for the realization of the potential creativity of a future specialist in the context of university education is necessary both for the formation of his competence and for the development of his communication skills. Constant, purposeful work to improve the level of competence of teachers is an important condition for the rich intellectual life of students, a necessary prerequisite for a high scientific level of teaching.

Conclusion

In modern society, in the education and upbringing of younger generations, there is a turn to the individual, his problems, interests, and creative development. The development of a non-standard thinking individual – a creator– comes to the fore. This means that the process of innovation cannot but include updating teaching methods and using creative educational technologies. The innovative attitude of educators only to change the content and volume of academic disciplines does not give the desired result. The modern innovation process is distinguished by greater freedom of choice and a variety of types of innovation activities. Under these conditions, professional and personal qualities, the totality of which forms the innovative culture of an educator, acquire special importance.

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