

## An Overview of the Principles of an Inclusive Approach in Education in Ukraine in the First Decade of the 21st Century as a Neuroscientific Factor

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**Abstract:** *This article is a systematic examination of the progression of inclusive education in Ukraine during the first decade of the 21st century, focusing on the neuropedagogical viewpoint of incorporating children with special needs in social interaction. It investigates the principal components of forming inclusive education as a fundamental factor for the progress of a non-discriminatory civil society in Ukraine. The author analyzes regulatory and legal documents, theoretical and practical experience of working with people with special needs. The study is devoted to the issue of the implementation of an inclusive approach in the education of Ukraine. The focus of the quantitative-qualitative analysis revolves around the historical timeline concerning the acknowledgment of regulatory documents pertaining to inclusive education and inclusive educational practices in Ukraine. Additionally, this analysis encompasses the examination of scientific and methodological literature concerning the education of children with special needs. This body of knowledge has played a pivotal role in facilitating the effective adoption of the inclusive approach within Ukrainian education, representing a significant aspect within the field of neuropedagogy. The experience of implementing an inclusive approach in Ukraine in the first half of the 21st century was analyzed, which laid the foundation for the formation and further development of an accessible environment with a universal infrastructure design, the presence of special devices for participants in the inclusive educational process, taking into account their needs. The article demonstrates how the transformation of Ukraine created an educational environment within educational facilities that was tailored to the particular needs of students with special educational needs, especially those related to neuropedagogy.*

**Keywords:** *Education of Ukraine; inclusive education; inclusive education; shutdown models; a child with special needs.*

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## Introduction

Nowadays under conditions of democratic society development in Ukraine it is especially important to create conditions for social integration of every person, regardless of their social status, state of health, and development capabilities. Education plays a major role in this process. However, until the beginning of the 21<sup>st</sup> century development of special education system, which is traditional for post-soviet region states, to which Ukraine belongs, regardless of its segregationist nature and major flaws of social upbringing of students at residential care establishments, was viewed as the highest expression of state's care about children with special education needs.

In the first decade of the 21<sup>st</sup> century inclusive approach was implemented into Ukraine's education system, intended to create new, more effective conditions for integrating children with special needs into society, which is reflected in regulatory documents on both international and intrastate levels.

The tasks related to the education and upbringing of children with special educational needs, as specified in the regulatory documents, require that they be fully included in the educational setting, thus providing them with equal civil rights. Establishment of inclusive approach in attitude towards people with special needs is a result of sequential transformation of societal views on the phenomenon of disablement – disablement models (medical, social, neosocial), which occurred in the world throughout the last century and determined conceptual changes in worldwide social thinking and cardinal change of sociocultural conditions and society's attitude towards educating people with special needs.

It is important to emphasize that inclusion in education, as other kinds of inclusion, particularly social, is a two-sided process, as it provides for mutual enrichment of social experience of children with functional limitations and children with state of health and development that is within the age norm, expands opportunities for children to adopt humanistic values, for schoolchildren to develop social qualities like consideration, sociability, tolerance, displaying empathy, mutual assistance and, in total, facilitates acquisition of sociality as the ability to enter social environment by children.

Development of education system in Ukraine occurs today under the determining influence of inclusive tendencies in education, which is not conventional, but rather innovative. It is evident that the introduction of the inclusive approach into Ukraine's education system, a global educational

innovation of the early 21st century, necessitated the overhaul of teacher training processes. This involved cultivating the competence of prospective educators in implementing educational innovations within their professional pedagogical roles. It also entailed equipping them with innovative approaches and methods for effectively organizing their work with children of varying health conditions, beginning from an early age, within the context of inclusive educational environments. Creation of regulatory framework and the necessity to process foreign and domestic experience of inclusive education facilitated emergence of inclusive tendencies in education and upbringing of people with limited physical capabilities in the first decade of the 21<sup>st</sup> century. Processes that were occurring at that time require systematic study and processing in the aspect of facilitating inclusion of children with physical dysfunctions into social interaction.

The purpose of the study: to determine the most effective principles of an inclusive approach in the education of Ukraine in the first decade of the XXI center.

### **Neuropedagogy in the Context of Inclusive Education**

Higher and even secondary professional education often remains inaccessible to people with special needs. However, the inclusive model of education, which involves the wide introduction of technologies in modern education that help to learn and teach the most diverse layers of pupils and students, actively and purposefully stimulates the search for ways to improve the educational process, its adaptation to the needs and characteristics of students with different needs or developmental delays, and as well as the search for ways to improve educational results for all pupils and students: with and without special needs, with or without certain socio-cultural, psychological, physical and other characteristics or limitations. It is not surprising that now, in the period of active digitalization of society's life, an inclusive doctrine aimed at ensuring access to education, its various levels and types, of the most diverse groups of students, special attention is paid to neurotechnologies, including neurotechnological devices. However, hopes for an inclusive education for the neurotechnological developments of today face many challenges, including the spiritual, moral and psychosocial "opacity" and ambiguity of the developments, the goals of their creation, application and correction: the problem of evidence and scientific validity of these developments is combined with the problems of ethical and cultural-ethical and psychological plans. Lack of neurotechnological culture of inclusive education.

Within the framework of this traditional idea of pedagogy, neuropedagogy is the application in the educational environment of “knowledge about how the brain learns and what stimulates the development of its cognitive and other functions”, the designation of an interdisciplinary field at the intersection of brain sciences (neurosciences), pedagogy and psychology. Neurodidactics is a branch of neuropedagogy along with neurodiagnostics.

Neuropedagogy, based on the latest achievements and discoveries in the field of sciences that study the functioning and activity of the human brain, seeks to build a learning system that optimally takes into account individual neurons. Neuroeducation is considered as the application in education of strategies and technologies obtained as a result of brain research. Neuropedagogy sets a number of goals, including optimization of individual training programs, forecasting the effectiveness and productivity of training programs, development of software to stimulate intellectual cognitive activity, and multifactor analysis of student data to identify predictors of effective and ineffective learning.

Neurodidactics is now regarded as a fairly recent interdisciplinary scientific field, which encompasses both brain research and didactics. It is based on the results of brain research and offers methods of increasing the effectiveness and productivity of learning, including by working directly with the human brain. The latest results of research in the field of neurodidactics show, however, that there is no single correct and universal way of learning based on the functioning of the brain.

However, in practice, there are a large number of definitions of the term “neuro-didactics” and no fewer ideas about what it is. In general, neurodidactics is the art of organizing and improving learning based on knowledge about the structure and function of the brain, different learning styles and the differences in perception, thinking, imagination, memory, etc. that cause them, for example, about sensors, preferences.

About the differences in the work of the hemispheres of the brain, about the predominant reactions to stressful situations. This concept unites and connects different aspects of traditional learning and education and new perspectives on it, emphasizing the importance of taking into account individual and situational factors of learning, ranging from issues of motivation to learning and characteristics of the learning environment to issues of information processing by the brain in interaction with artificial intelligence, etc. This is the science of organizing the educational process using modern knowledge about the human brain and the ability to interact with the brain.

The main goal of neuropedagogy is to build a system of education and upbringing that optimally takes into account the individual neuropsychological features of students (neuropsychological profile) based on the study of the brain foundations of human mental activity, integration with personality. A focused approach to education aimed at helping the child in self-development, providing a diverse, rich, developmental, corrective, comfortable, safe educational environment. As a result, learning can be considered not only as a process and result of mastering knowledge and skills (competencies), but also as a transformation of the student's internal experience, which bears the imprint of his life situation and all his unique individuality.

Neuropedagogy observes and adapts educational technology advancements by integrating key findings from neuroscience. It intentionally incorporates insights from contemporary brain research into pedagogical strategies, utilizing neurobiological and psychological insights in education. This approach leverages knowledge about the brain and employs brain research to gain insights into cognitive processes and how individuals learn. Neuropedagogy combines didactic, or ultimately pedagogical, psychological concepts of learning with current knowledge in neuroscience and other brain sciences. Neurological discoveries are now the subject of a wide discussion, but most often in a shortened form, unsuitable for solving specific practical tasks of inclusive education. They are focused on a person's individual abilities, talents and interests. Based on the revealed ability of a person and assessment of his/her readiness to carry out a certain activity, he can be developed as a person, as a partner, as a professional, expanding his/her horizons and competencies, influencing values and goals, models of human behavior and communication.

Many neurodidactically oriented researchers note that they want to help teachers implement "adequate mental training", based on the idea of the inner experience of a person and the inner processes of cognitive, conceptual and emotional-image processing of information. However, most questions of neurodidactics and neurology in general remain open. Neurobiologists can elucidate, for instance, the neural basis of the learning process, yet they cannot grasp the complexity of the duties that teachers and educators take on every day. The future of teaching in schools and universities is still confronted with the problems of learning and self-education.

In educational settings, there are numerous questions and unresolved matters concerning the relationship between a teacher and a student, such as the capacity and restrictions of neurotechnologies in education. If one's

considers the postulates of neurodidactics, described by some didactics as some “basic principles”, for example, the statement that knowledge is not transmitted automatically, but is created “anew” in the student’s brain, then a completely illogical construction arises.

### **Exploring Inclusive Education from Theoretical and Methodological Perspectives**

Many researchers, such as Hryhorenko & Rasskazova (2015) and Hryhorenko et al. (2018), have looked into the historical educational side of implementing inclusion in post-Soviet countries, particularly in Ukraine. These scientific publications delve into the historical factors that paved the way for the emergence of an inclusive approach in Ukraine. They establish connections between the progression and subsequent setbacks in pedagogical knowledge during the early 20<sup>th</sup> century and the ongoing implementation of inclusive practices in Ukrainian education today. These works are highly relevant to this research as they shed light on the conditions that set the stage for the inclusive transformation that began in the early 21<sup>st</sup> century.

The fundamental principle of tolerance within an inclusive educational approach has its roots in ancient times. When one looks back in time, one can trace the emergence of concepts related to tolerance in philosophy, including patience, tolerance, respect, trust and the harmonious coexistence of diverse perspectives (Povidaichyk et al., 2021). Bazyma et al. (2022)’s research will be considered in order to review the existing social setting of inclusive education for people with mental disorders.

The list of limitations, risks and difficulties of neuroeducation, including in inclusive practice, is long. One of the problems is the destruction or blocking of educational aspects of educational interaction: excessive interactions with neurotechnologies lead to the degradation of reflexive-empathetic elements and the growth of aggression and cruelty in relations with others and with oneself. Therefore, education using neurotechnologies requires the highest culture of their application, based on concern for the dignity, rights and responsibilities of a person as a subject of culture, a member of the community. The culture of neuroeducation includes the culture of interaction and the use of neurotechnology in education.

True picture of the process of establishment of inclusive education in Ukraine can first of all be drawn by reviewing historical chronology of recognizing and ratifying regulatory documents that became the foundation for implementing inclusive approach in education. It is worth mentioning

that the term “inclusive education” itself entered the official terminology of Ukraine as a result of the ongoing process of incorporating international and European standards related to children’s rights into Ukraine’s national legislation. Back in 2006, the UN Convention on the Rights of Persons with Disabilities (United Nations, 2006) was ratified, and this milestone event occurred in Ukraine much earlier than in other post-soviet nations. In the document, which is aimed at protecting and facilitating the rights and dignity of persons with special needs, it is noted, namely, that participating states recognize the right of children with special needs to education. For this right to be achieved without prejudice and with equal chances, member states must encourage inclusive education across all levels (Prepotenska et al., 2022).

It must be noted that analysis of state regulatory basis is indicative of the fact that attempts to implement inclusion can be traced in legislation of Ukraine even before recognizing the Convention. Accordingly, the National Programme “Children of Ukraine” (1996) paved the way for the nation to guarantee every child’s right to be born healthy, remain alive and be provided with the opportunity for comprehensive growth, to be reliably safeguarded socially and psychologically (Verkhovna Rada Ukrainy, 1996).

The Ministry of Education and Science of Ukraine initially embarked on introducing an integration approach in education through a scientific pedagogical experiment focused on the social adaptation and integration of children with special psychophysical needs into mainstream society. This was accomplished by facilitating their education within regular educational institutions. Subsequently, the Ministry expanded this initiative to encompass the social adaptation and integration of children in need of physical and/or intellectual development correction, achieved through the implementation of inclusive teaching methodologies (Zarianiuk, 2015).

Documents from the government of Ukraine that recognize people with special needs typically follow the current inability model, opening up a new avenue of development for children with special needs: inclusion into educational settings and granting them full civil rights (Gerasymova et al., 2019).

Ukraine achieved the successful implementation of inclusive education as a result of enforcing legal forms. However, as Zarianiuk (2015) pointed out, it was necessary to include statutory provisions regarding the teaching of children with special educational requirements into existing educational legislation. The necessity to adhere to the main principles, guarantees and standards of education of children with special needs, as stipulated in international documents, necessitated the implementation of

“On General Secondary Education” (Verkhovna Rada Ukrainy, 1999) and “On Out-of-School Education” (Verkhovna Rada Ukrainy, 2000). This needed to be implemented in line with the requirements of Ukrainian laws on the rehabilitation of individuals with special needs (Maksymchuk et al., 2018).

Furthermore, an examination of sources reveals that nearly concurrently with Western integration trends in Ukrainian educational practices, there was a parallel adoption of individualized approaches for integrating children with special needs into mainstream educational institutions. These approaches included correction classes, specialized support classes, distance learning, informal inclusion initiated by parents, and experimental inclusion programs within kindergarten and school premises. Remarkably, many of these practices have endured in various forms up to the present day (Povidaichyk et al., 2021).

Mentioned events and legislative changes created the prerequisites for the introduction of inclusive education in Ukraine. The outcomes of this investigation indicate a notable surge in the regulatory implementation of inclusive education since 2008. This acceleration aligns with the commencement of efforts in Ukraine focused on the period spanning from 2008 to 2013 (Béjar, 2014). The project was introduced in order to change the attitude of government, education establishments and non-governmental organizations towards people with special needs by presenting various foundational components of an inclusive education system, namely: formation of politics in the education and social services field, which will be directed at developing an inclusive education model in Ukraine.

### **Effective Factors of Inclusive Education in the Neuropedagogical Aspect**

The enthusiasm for the process of approving the regulatory basis of inclusive teaching has been mirrored by an increased interest of researchers in this field, leading to the gradual introduction of “inclusion” in the naming and structure of scientific studies (Blakemore et al., 2007).

This is indicated by studies of information regarding approval of candidate and doctoral scientific research topics, disclosed on the official site of the bureau of Interagency Council on Coordination of Scientific Research in Pedagogical and Psychological Sciences in Ukraine. An entire array of information regarding the topics of scientific research since 2006 underwent analysis (before this time the issues of inclusive education were not raised in the topics of research in Ukraine). It is intriguing to observe how exactly the researchers comprehend the nature of inclusion (Cárdenas Gómez, 2021).



When delineating the essence of inclusion, it is crucial to focus on the aspects that highlight its defining characteristics. Firstly, inclusion represents an ongoing process, necessitating a continuous quest for more effective means to meet the individual needs of all children. Within this framework, differences are regarded as a positive factor that stimulates learning for both children and adults. Secondly, inclusion is intricately linked to identifying barriers and subsequently surmounting them. This entails conducting comprehensive assessments, gathering information from diverse sources to formulate individual development plans, and putting them into practice. Thirdly, inclusion encompasses the presence, participation, and achievements of all participants in the educational process, with a primary emphasis on children with special needs. “Presence” entails creating opportunities for children with health challenges to receive education in mainstream institutions, along with any necessary adaptations. “Participation” revolves around providing avenues for positive learning experiences and considering the student’s self-perception within this process. Lastly, “achievement” encompasses the holistic outcomes of learning throughout the academic year, extending beyond conventional performance assessments like exams, module tests, and testing controls (Castillo, 2015).

Gradual evolution of societal and educational paradigm of disablement is evidenced particularly by a shift of emphasis in scientific research, their aim at the field that covers a wide range of issues related to organizing a system of teaching, education and development of young generation based on new inclusive foundations.

An examination of doctoral research topics from the first decade of the 21st century, particularly within the field of pedagogy, aimed at defining “inclusive education”, along with comprehensive semantic sections and textual segments pertaining to this research focus, affirms the discerned trends in scholarly discourse with a high degree of objectivity. As previously demonstrated, the evolution of inclusive education topics has traditionally been intimately linked to the challenges of teaching, nurturing, fostering and socially integrating children with special educational needs. Given the substantial theoretical and methodological foundation and the multifaceted analysis conducted across various fields within the humanities concerning education, child-rearing, and addressing social issues among individuals with psychophysical limitations, there is a compelling need for a systematic conceptual reevaluation of the concept of inclusive education. This reevaluation should be approached from a fresh perspective, focusing on the facilitation of the integration of children with special needs into societal life

and the practical fulfillment of their social development during the process of education and upbringing (Cumpa Valencia, 2019).

As one can see, during times under study an increase in status and certain positive dynamics regarding the number of research on this topic can be traced in Ukrainian science.

The issues of educating and upbringing persons with psychophysical disorders are being worked on in various scientific fields, among which the pedagogy is the leading one. Definitive fact is that from the pedagogical perspective the problems of educating and upbringing persons with health issues were traditionally more completely clarified within the terms of corrective pedagogy (66.3 % of the total number of these works on issues under study belong to this specialty). Qualitative analysis of the issues of candidate scientific works defended under this specialty allows us to separate the entire array of information dedicated to solving the problems of children with special needs into conceptual blocks that comprise works on:

- didactic correction of various parts of personality (16 % of all defended research within the corrective pedagogy field belong to this range of topics);
- intellectual development and teaching of persons with health issues (16 %);
- physical rehabilitation, correction and stimulation of motor performance by means of physical education (41 %);
- upbringing (6 %);
- formation of life skills, abilities, competencies, self-consciousness, culture and behavior norms (20 %);
- preparation for entering the social, particularly education, and professional field (14 %).

As can be seen, almost half of thesis research is dedicated to the issues related to upbringing, social adaptation and socialization of children with special needs, which is additional evidence of their significance in the period under study.

Doctoral theses, which constitute nearly 10 % of all defended research on the issues of children with special needs within the field of corrective pedagogy, clarify methodological foundations of teaching, upbringing, development and didactic correction of functional state of children and youth with special needs.

Aside from abovementioned thorough research on the issue of disablement, made in the form of pedagogical intelligence, said issues were clarified in a historical aspect (12 % of the general number of corresponding scientific works), where theory and practice of corrective teaching of

persons with limitations, their social-pedagogical support, establishment and development of a network of establishments for children, who required protection, support and development correction, were subjected to study.

During the initial decade of the 21st century, there was significant exploration of issues related to children with special needs, particularly within the realm of social pedagogy. Numerous doctoral and candidate dissertations were conducted, predominantly aimed at enhancing one's understanding of special needs as a phenomenon. These research endeavors primarily centered on elucidating the theory and practice of social pedagogical interventions for youth and families of children with psychophysical limitations. Additionally, one doctoral thesis focused on delineating the distinctive aspects and practicalities of social pedagogical support for this specific demographic within an industrial region.

Particularly commendable are the contributions of authors who are actively engaged in addressing the intricacies of inclusive education. Their work primarily revolves around the comprehensive inclusion of children with special needs into educational environments, as part of a broader endeavor to explore progressive avenues for their integration into society. In essence, the body of scientific research that explicitly delves into the concept of "inclusive education" represents a relatively small fraction of the overall corpus of research in Ukraine pertaining to children with special needs, as assessed during the conducted analysis. However, it is noteworthy that the number of such works has been steadily growing over time (Kaiser, 1974).

Thus, according to the results of this analysis, we conclude that more and more attention was paid to studying the issues of teaching, upbringing and development of children with special needs in scientific research of Ukraine in the first decade of the 21<sup>st</sup> century, although often without verbalizing the concepts of "inclusion" and "inclusive education". Nonetheless, the array of issues concerning inclusive education was widening drastically (Archibald, 2015).

Consequently, during the initial decade of the 21st century, there has been a notable surge in the interest of pedagogical scholars in Ukraine, particularly within the field of social pedagogy. This heightened interest is exemplified by the ongoing development of two doctoral theses dedicated to the subject under investigation (Banerjee, 2019). Taking 2011 into consideration, two doctoral thesis topics were approved, matching the amount from 2006 to 2010 (Bass, 2019). An upsurge in scientific curiosity concerning inclusive education has triggered a more vigorous production of reference and scientific methodology literature on the topic (Bass, 2019). Now, inspired by the illusions and simulations of mass culture, many

students and teachers consider themselves competent in neurotechnologies and their consequences, in fact, without having more or less serious ideas about the essence of what happens to a person who has entered a neural network, and even more so those processes and effects that occur when a person ceases to live as a part of a natural system, and completely transitions into a technical, artificial system. Such a transition inevitably means the acquisition of artificial traits or character by oneself and one's life. In this regard, the initial and main tasks of neuropedagogy are those related to neurodigital culture: its formation, implementation, correction of errors and illusions that are introduced into modern inclusive and general education due to exaggeration of opportunities and silencing of digital limitations, including among neurotechnologies.

The system and content of special education is being modernized in relation to a new perception of civil rights and human freedoms, as well as the recognition of the need for educating and training all children, despite their physical and mental state.

## **Conclusions**

In general, conducted analysis indicates that any reformation of the education system must be based on the national foundation with gradual changes in all of system's links. The first decade of the 21<sup>st</sup> century turned out to be a time when significant changes in demands to the education system occurred in Ukraine, those being related to establishment of inclusive approach in education. This time was also marked with scientific methodology development of the range of issues on teaching, upbringing and development of children with special needs. Along with that, as the authors of this article believe, it was premature to proclaim the ability of every school in Ukraine to provide teaching and upbringing for children with various medical conditions. It would be more appropriate to first equip educational establishments according to the needs of children with one or more medical conditions, as even this required significant investment from the state. The problems of financial support for inclusion had large impact on its expansion in Ukraine. Nevertheless, much was done in the first decade of the 21<sup>st</sup> century in order to develop inclusive education in Ukraine, which in turn facilitated laying a solid foundation that ensured irreversibility of inclusive processes in education of Ukraine.

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