TECHNOLOGIES FOR PREPARING FUTURE SPECIAL EDUCATION TEACHERS TO DEVELOP STUDENTS’ PERCEPTUAL SKILLS IN INCLUSIVE EDUCATION

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Abstract. *This paper explores the development of students’ perceptual skills in inclusive education and technologies for preparing future special education teachers. It focuses on individual learner needs, sensory perception, adapted materials, digital technologies, practical training, and reflective analysis.*

Keywords: *inclusive education, perceptual skills, special education teachers, professional training, sensory perception, digital technologies.*

Annotatsiya. *Maqolada inklyuziv ta’lim sharoitida o‘quvchilarning perseptiv ko‘nikmalarini rivojlantirish va bo‘lajak maxsus pedagoglarni tayyorlash texnologiyalari yoritilgan. Shuningdek, individual yondashuv, moslashtirilgan o‘quv materiallari va raqamli texnologiyalarning ahamiyati ochib berilgan.*

Kalit so‘zlar: *inklyuziv ta’lim, perseptiv ko‘nikmalar, maxsus pedagog, kasbiy tayyorgarlik, sensor idrok, raqamli texnologiyalar.*

Аннотация. *В статье рассматриваются технологии развития перцептивных навыков учащихся в условиях инклюзивного образования и подготовки будущих специальных педагогов. Раскрывается значение индивидуального подхода, адаптированных учебных материалов и цифровых технологий.*

Ключевые слова: *инклюзивное образование, перцептивные навыки, специальный педагог, профессиональная подготовка, сенсорное восприятие, цифровые технологии.*

Introduction. In contemporary education, promoting inclusive education, ensuring equal learning opportunities, and addressing the individual needs of all learners are among the key pedagogical priorities. Inclusive education aims not only to ensure learners’ participation in educational activities but also to support the development of their cognitive abilities, independent functioning, and social interaction.

Perceptual skills play an important role in students’ cognitive development. These skills involve perceiving objects and phenomena in the surrounding environment through the senses, distinguishing their characteristics, comparing and analysing information, and drawing appropriate conclusions. They are essential for learning academic content, developing spatial orientation, engaging in verbal communication, and participating in everyday activities.

The development of perceptual skills among learners with special educational needs should be organized in accordance with their individual developmental characteristics and abilities. Therefore, preparing future special education teachers

to use effective methods, technologies, and resources for developing perceptual skills represents an important pedagogical challenge.

Main Body. The development of perceptual skills is closely associated with students’ learning activities, cognitive processes, and interactions with their environment. Perception involves distinguishing sensory information, identifying relevant features, and connecting new information with previous experience. To facilitate this process effectively, teachers need to consider learners’ sensory abilities, perceptual characteristics, and individual educational needs.

In inclusive education, the development of perceptual skills should not be limited to isolated exercises. It is advisable to integrate these activities into academic tasks, communication, collaborative learning, and everyday situations. Such an approach can help learners apply their knowledge and skills in different contexts.

The preparation of future special education teachers for this work can be organized around the following pedagogical technologies.

1. Diagnostic and analytical technology. This technology focuses on identifying the characteristics of students’ perceptual skills through pedagogical observation, specialized tasks, and the analysis of learning outcomes. Future teachers learn to identify learners’ strengths, areas requiring support, and individual educational needs. Assessment should focus on monitoring each learner’s progress rather than comparing learners with one another.

2. Sensory-developmental technology. This approach involves exercises designed to help learners distinguish the shape, size, texture, sound, and other characteristics of objects. Object models, tactile materials, audio resources, and other adapted teaching materials can be incorporated into educational activities. Tasks should be selected according to learners’ ages, individual abilities, and special educational needs.

3. Interactive and digital technologies. Digital learning resources, interactive exercises, audio materials, and adapted multimedia tools can enrich the process of developing perceptual skills. However, the selection of technologies should be guided by their educational relevance and accessibility for all learners. For example, audio descriptions, enlarged images, or tactile materials may support learners who experience difficulties perceiving visual information.

4. Individualized learning design technology. This approach involves setting learning objectives, selecting tasks, determining appropriate forms of support, and evaluating outcomes in accordance with each learner’s educational needs and developmental characteristics. Task complexity, completion time, the format of instructions, and the level of assistance should be adjusted to learners’ abilities.

5. Collaborative pedagogical technology. Group activities, pair work, problem-solving tasks, and communication-based exercises help connect perceptual skills with social interaction. In such learning environments, teachers should encourage

the active participation of every learner, provide appropriate accommodations, and promote mutual support.

Integrating theoretical knowledge with practical experience is essential when preparing future special education teachers to apply these technologies. Case studies, pedagogical scenario modelling, microteaching, practical projects, and reflective analysis can be used for this purpose.

For example, student teachers may be asked to design a set of exercises aimed at developing perceptual skills in learners with different educational needs. They identify the learning objectives, select appropriate teaching materials, adapt the tasks, and establish criteria for evaluating the expected outcomes. Such activities can contribute to the development of methodological thinking, decision-making in challenging situations, and the ability to design pedagogical solutions that respond to individual learning needs.

Interdisciplinary integration should also be emphasized in teacher preparation. Connecting knowledge from special education, psychology, neuropsychology, didactics, and information technology can support a more comprehensive understanding of perceptual development. Professional competence involves not only knowing various teaching methods but also selecting them appropriately for specific situations, analysing outcomes, and modifying pedagogical approaches when necessary.

An important condition for effective teacher preparation is the integration of theoretical instruction, practical activities, and reflective learning. Future teachers should be encouraged to analyse educational situations, justify their choice of teaching methods, and evaluate the accessibility of learning materials. This approach can help them develop a flexible professional perspective and respond appropriately to the diverse needs of learners in inclusive classrooms.

Conclusion. In conclusion, developing students’ perceptual skills in inclusive education is an important professional responsibility of future special education teachers. The effectiveness of this process depends on considering individual learner characteristics, using adapted teaching materials, and selecting appropriate pedagogical technologies.

Integrating diagnostic and analytical, sensory-developmental, interactive, individualized learning design, and collaborative technologies into teacher preparation can provide a methodological foundation for developing future teachers’ practical competencies. Case studies, pedagogical scenario modelling, practical projects, and reflective analysis play an important role in this process.

Therefore, higher education institutions should improve the preparation of future special education teachers for developing perceptual skills, strengthen the practical component of teacher education, and expand methodological resources that address individual educational needs.

Particular attention should be given to developing teachers’ abilities to select accessible teaching materials, design individualized learning activities, and create supportive educational environments in which every learner can participate meaningfully.

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