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Organizing Subject-Practical Activities to Support the Development of Hearing-Impaired Children with Intellectual Disabilities

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ABSTRACT

This article addresses the organization of subject-practical activities for hearing-impaired children with intellectual disabilities. The study focuses on the cognitive challenges and sensory impairments these children face, exploring the critical role of special education and corrective pedagogy in overcoming these difficulties. The paper highlights the importance of subject-practical activities in fostering cognitive development, social adaptation, and the enhancement of personal skills. It discusses how visual aids, multisensory approaches, and game-based learning techniques have proven effective in improving comprehension, motor skills, and communication. The research finds that well-organized practical activities significantly improve the independent action skills, social interaction, and overall learning outcomes of these children. Recommendations include the systematic integration of practical activities into special education curricula, continuous professional development for educators, and the expanded use of sensory materials to enhance learning. The study emphasizes the need for a tailored approach to teaching hearing-impaired children with intellectual disabilities.

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1. INTRODUCTION

Creating an inclusive and high-quality educational environment for children with special educational needs, including hearing-impaired children with intellectual disabilities, presents a critical challenge for modern educational systems worldwide. These children often face significant barriers in their cognitive, sensory, and motor development, which require specialized teaching strategies and tailored learning environments (Azizah *et al*., 2022; Egbedeyi & Babaola, 2023; Al Shaban Radi & Hanafi, 2024; Rizqita *et al*., 2024). In many cases, traditional educational approaches are not equipped to address the unique needs of these students, making it essential for educators to adopt individualized teaching methods that promote learning and social integration. Hearing-impaired children with intellectual disabilities face compounded challenges due to their sensory impairments and cognitive limitations, which can hinder their ability to process information, communicate effectively, and engage with peers in meaningful ways (Glushchenko & Trubacheyev, 2025; Faddillah et *al.,* 2025; Musayaroh *et al*., 2023).

In response to these challenges, the Republic of Uzbekistan has implemented a range of reforms aimed at providing inclusive education for children with special educational needs. The government has emphasized the importance of integrating children with disabilities into the educational system and society at large, recognizing that these children have the right to quality education. The Presidential Decrees and the Law on Education, alongside the State Program for the Development of Inclusive Education for Children with Disabilities, form the backbone of Uzbekistan's inclusive education strategy. These policies focus on improving educational accessibility, fostering social adaptation, and enhancing the quality of life for children with disabilities. Special education institutions in Uzbekistan are critical in meeting the needs of hearing-impaired children with intellectual disabilities, providing them with the tools and support necessary to participate fully in society and achieve personal development (Muhabbat *et al*., 2023; Mizabek, 2023).

The purpose of this study is to explore the organization of subject-practical activities for hearing-impaired children with intellectual disabilities, focusing on enhancing their cognitive, motor, and social development. The research assesses the effectiveness of multisensory and hands-on learning methods, including visual aids and game-based activities, in improving independent action skills, comprehension, and social interaction. The study aims to provide practical insights for educators on how to structure these activities to meet the unique needs of children with both hearing and intellectual disabilities.

The novelty of this research lies in its focus on the intersection of hearing impairments and intellectual disabilities, an area that has received limited attention. By investigating how tailored subject-practical activities can improve learning outcomes for these children, this study fills a gap in the literature and offers valuable recommendations for more effective and inclusive pedagogical practices in special education.

2.LITERATURE REVIEW

2.1. Pedagogical Approaches for Hearing-Impaired Children with Intellectual Disabilities

Several studies have emphasized the necessity of combining specialized pedagogical approaches to address the needs of hearing-impaired children with intellectual disabilities. In Uzbekistan, researchers like Rusyani *et al.* (2022a) have contributed to the development of effective teaching strategies for this population, focusing on cognitive and motor skill development. Rusyani *et al*. (2022a) work explores how hearing impairments influence cognitive and speech development, presenting tailored methodologies for improving speech,

language, and cognitive abilities in hearing-impaired children. Meanwhile, Mamatova emphasizes the importance of multisensory learning tools—such as visual and tactile materials—in creating an engaging and accessible learning environment.

Internationally, the theories of Vygotsky and Bruner have had a significant influence on special education practices for hearing-impaired children. Vygotsky's Cultural-Historical Development Theory underscores the crucial role of the social environment and interaction in cognitive development, particularly for children with disabilities. Vygotsky's theory suggests that children learn best when they can engage with their environment and social context, which is especially relevant for hearing-impaired children with intellectual disabilities who often require a strong social framework to foster learning. Bruner's advocacy for active learning methods also complements this approach, particularly in the context of practical activities that stimulate sensory and motor development (Rusyani *et al.,* 2022b).

2.2. Multisensory and Visual Approaches in Special Education

Modern research on special pedagogy has underscored the effectiveness of multisensory and visual approaches in enhancing the learning experience of hearing-impaired children with intellectual disabilities. These children often struggle with auditory-based learning, making it essential to incorporate visual, tactile, and kinesthetic learning materials to support their cognitive development. A study by Rizqita *et al*. (2024) highlights the effectiveness of visual instructions, such as pictograms, infographics, and video demonstrations, in helping hearing-impaired children comprehend new concepts. These visual tools not only make the learning process more accessible but also increase student engagement and retention. In addition, hands-on activities like art, construction, and physical exercises have been shown to improve fine motor skills and cognitive flexibility.

Research has also demonstrated the benefits of game-based learning for children with intellectual disabilities. Game-based approaches are particularly effective in motivating students, encouraging active participation, and fostering collaboration. These strategies help children develop not only cognitive and motor skills but also essential social skills, such as teamwork and communication (Rusyani et al., 2022a). According to Glushchenko and Trubacheyev (2025) on the development of mental processes, children with intellectual disabilities benefit from activities that involve physical movement and interaction, which stimulate both cognitive growth and social adaptation.

2.3. Corrective Pedagogy and Its Role in Special Education

Corrective pedagogy, as outlined by scholars like Maknun *et al*. (2019) and other special education experts, plays a crucial role in structuring educational activities for children with dual disabilities. Corrective pedagogy involves using specific teaching methods and tools designed to address the developmental needs of children with hearing impairments and intellectual disabilities. These pedagogical methods are tailored to help students overcome their challenges in areas such as communication, social interaction, and motor skills. Effective corrective pedagogical methods are grounded in individualized approaches that take into account each child's unique abilities and difficulties.

Recent studies have shown that the integration of corrective pedagogy with subject-practical activities enhances the educational experience for hearing-impaired children. For example, using practical tasks such as crafting, assembly, and physical exercises helps reinforce learning and enables children to apply theoretical knowledge to real-life situations.

These hands-on activities promote not only cognitive and motor skills but also emotional and social development by encouraging independence, collaboration, and problem-solving.

2.4. Social Adaptation and the Role of Practical Activities

The social adaptation of children with hearing impairments and intellectual disabilities is an ongoing challenge in educational settings. Effective socialization requires strategies that integrate children into group activities where they can practice social interaction, communication, and cooperative skills. A study by Kurniawati (2022) suggests that group-based learning, role-playing, and collaborative tasks help hearing-impaired children with intellectual disabilities develop crucial social skills. These activities create opportunities for students to learn how to express themselves, understand others' perspectives, and work together in a shared environment. Furthermore, these activities help children build self-confidence and reduce social isolation by fostering positive peer relationships.

The research also supports the notion that a supportive and interactive learning environment is vital for the development of both academic and social skills. Teachers who employ practical, hands-on activities in inclusive settings help students with disabilities build meaningful relationships with peers and instructors, facilitating greater social integration. These findings align with the work of Vygotsky and Luria, who emphasize the importance of social contexts and collaborative learning in cognitive development.

3. METHODS

3.1. Theoretical Analysis

The first phase of the research involves a thorough theoretical analysis of existing literature on special education, corrective pedagogy, and teaching methods for children with hearing impairments and intellectual disabilities. This review includes academic articles, books, and policy documents related to special education strategies, multisensory learning techniques, and the pedagogical approaches for addressing dual disabilities. Additionally, relevant government policies and educational reforms in Uzbekistan, including Presidential Decrees and the Law on Education, are reviewed to understand the current state of inclusive education and the implementation of subject-practical activities in special education institutions.

3.2. Empirical Research

Empirical research methods were used to gather data through direct observation and experimentation in educational settings. The study focused on observing how subject-practical activities were implemented in classrooms for hearing-impaired children with intellectual disabilities. The research team conducted fieldwork in several special education schools in Uzbekistan, observing children during practical tasks such as assembling construction models, crafting, and other hands-on learning activities. The goal was to identify how these activities supported the children’s cognitive development, social interaction, and motor skill development. Detailed field notes were taken during these observations to document student engagement, teacher-student interactions, and the use of sensory and visual materials.

3.3. Experimental

In addition to observational research, an experimental method was used to test the effectiveness of subject-practical activities. A series of structured, hands-on tasks were introduced to students in special education classrooms. These tasks included activities such

as paper crafts, model assembly, and group problem-solving exercises. The students' performance on these tasks was measured before and after the intervention to evaluate improvements in motor skills, cognitive understanding, and social interaction. The effectiveness of these activities was assessed using a set of predefined criteria, such as task completion accuracy, student participation levels, and the ability to follow visual instruction.

3.4. Survey and Interview Method

To supplement the observational and experimental data, surveys and interviews were conducted with special education teachers, parents, and caregivers. These qualitative methods were used to gather feedback on the effectiveness of subject-practical activities from the perspectives of those directly involved in the children's education. Teachers were asked about their experiences implementing practical activities, the challenges they faced, and the observed benefits for students. Parents and caregivers provided insights into how these activities impacted the children at home, particularly in terms of communication, social interaction, and independent living skills. The surveys and interviews were semi-structured, allowing for open-ended responses and in-depth discussions on the topics related to the study.

3.5. Statistical Analysis

Data collected from the experimental method, surveys, and interviews were analyzed using statistical techniques to assess the impact of subject-practical activities on student outcomes. Quantitative data from task performance (such as completion rates, task accuracy, and participation levels) were processed using descriptive statistics to summarize the findings. Additionally, inferential statistical methods, including paired t-tests, were used to compare pre- and post-intervention results to determine the significance of any improvements. The analysis helped quantify the effectiveness of practical activities in fostering cognitive, motor, and social development.

4. RESULTS AND DISCUSSION

4.1. Improved Independent Action Skills

One of the key outcomes of the subject-practical activities was the improvement in the independent action skills of hearing-impaired children with intellectual disabilities. Initially, students faced difficulties in completing hands-on tasks independently, requiring significant teacher support. However, over time, students demonstrated greater accuracy and confidence in performing tasks such as assembling models, crafting with materials like plasticine, and completing paper-based projects.

In the experimental setting, tasks that involved constructing simple objects and working with tactile materials helped students refine their fine motor skills and problem-solving abilities. These activities enhanced their ability to concentrate and follow instructions more effectively. According to teacher reports, students' increased independence in performing tasks was accompanied by a greater sense of accomplishment and self-esteem.

This improvement in independent action skills is consistent with the literature, which suggests that hands-on activities, especially those involving tactile or visual elements, are effective in promoting motor skill development in children with sensory impairments. As noted by Glushenko (2025) practical tasks help reinforce cognitive learning while providing opportunities for sensory integration and skill acquisition.

4.2. Enhanced Comprehension of Visual Instructions

A significant finding of this study is the enhanced comprehension of visual instructions among the children. Visual aids, such as pictograms, infographics, and step-by-step instructions, played a crucial role in improving students' ability to understand and follow tasks. The experimental activities were structured using these visual materials, which helped children process information more effectively and participate actively in lessons.

Teachers observed that students were more engaged and less likely to require assistance when visual instructions were provided. For instance, when given pictorial instructions for assembling models, children showed improved task performance and increased participation in group work. The use of multisensory materials, including visual and tactile aids, appears to support the findings of previous studies, which emphasize that hearing-impaired children with intellectual disabilities benefit from learning strategies that use multiple senses to convey information (Rahmat, 2022).

4.3. Development of Social Adaptation and Communication Skills

Subject-practical activities also contributed significantly to the social adaptation and communication skills of hearing-impaired children. Group-based activities, such as collaborative problem-solving tasks and role-playing, encouraged children to interact with their peers, work as a team, and develop their communication abilities. These activities provided children with opportunities to practice social skills in a supportive and structured environment.

The study found that students showed noticeable improvements in their ability to express themselves, understand others, and collaborate with peers. Social interactions in group settings helped break down barriers to communication, and students became more confident in expressing their emotions and ideas.

4.4. Teacher Feedback and Improved Pedagogical Methods

Teachers involved in the study reported significant improvements in their ability to engage students using subject-practical activities. The use of visual, sensory, and hands-on approaches helped teachers better address the diverse needs of their students. Educators acknowledged the value of multisensory methods and expressed a preference for incorporating them into their teaching practices.

Survey responses indicated that teachers felt more confident in their ability to foster critical thinking and problem-solving among students by using practical, interactive learning methods. Additionally, teachers recognized the importance of tailoring activities to the individual needs of each child, using flexible approaches that encourage active participation. This aligns with findings from Bruner (1966), who highlighted the value of active learning in stimulating cognitive growth and engagement in children with special needs.

4.5. Statistical Analysis of Findings

The statistical analysis of the study revealed significant improvements across several developmental areas for hearing-impaired children with intellectual disabilities. First, 80% of students demonstrated notable progress in fine motor and practical skills. Tasks such as assembling models and engaging in craft activities showed marked improvement in the students' ability to perform tasks with greater precision and independence. Additionally, the need for teacher assistance with basic tasks decreased substantially, from 65% to 30%, indicating a significant increase in the children's ability to work independently. This reduction

suggests that the subject-practical activities were successful in fostering self-sufficiency and confidence. Finally, 75% of students exhibited noticeable progress in teamwork and communication skills, particularly through group activities like problem-solving tasks and role-playing exercises. This improvement in social and communicative abilities further highlights the effectiveness of practical activities in supporting not only cognitive and motor development but also social integration and collaboration. These statistical findings provide strong evidence of the positive impact of subject-practical activities on the development of hearing-impaired children with intellectual disabilities.

The results of this study underscore the importance of organizing subject-practical activities in special education for hearing-impaired children with intellectual disabilities. These activities not only support cognitive development but also foster motor skills, social adaptation, and communication abilities. The use of visual and multisensory techniques proved highly effective in improving student engagement, comprehension, and task performance performance (Rahmat, 2022).

Practical activities, when systematically integrated into the curriculum, enable students to experience hands-on learning, which is particularly beneficial for children with dual disabilities. As the study shows, these activities allow students to apply theoretical knowledge in real-life contexts, contributing to both academic and personal growth. Moreover, group activities and collaborative tasks promote socialization, helping students build essential life skills such as teamwork, communication, and empathy.

5. CONCLUSION

This study confirms that the organization of subject-practical activities plays a crucial role in enhancing the cognitive, motor, and social development of hearing-impaired children with intellectual disabilities. The results indicate significant improvements in fine motor skills, task independence, teamwork, and communication abilities. By incorporating multisensory and hands-on learning methods, the study demonstrates how these children can develop essential skills, foster social adaptation, and enhance their overall quality of life.

The statistical analysis further highlights the effectiveness of these activities in reducing the need for teacher assistance and promoting student engagement. The findings underscore the importance of integrating practical, interactive activities into special education curricula, providing children with meaningful opportunities to apply learned concepts in real-life contexts. Based on the results, it is recommended that subject-practical activities be systematically implemented in special education settings, and that educators receive continuous professional development on modern corrective pedagogy techniques.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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