Early Diagnosis Of Children With Speech Disorders And Provision Of Primary Consultative Support Through The Use Of Information And Communication Technologies

Ziyoda Xojimurodova Baxrom Qizi
Special pedagogy

Abstract

This study explores the role of information and communication technologies (ICT) in the early diagnosis of children with speech disorders and the provision of primary consultative support. The research emphasizes the importance of timely identification of speech impairments, the integration of digital tools for diagnostic assessment, and the development of consultative frameworks that assist both specialists and parents. By leveraging modern ICT solutions, the process of early intervention becomes more effective, accessible, and systematic, ultimately contributing to improved outcomes in special pedagogy and speech therapy.

Keywords: speech disorders, early diagnosis, consultative support, information and communication technologies, special pedagogy, speech therapy.

INTRODUCTION

Speech disorders in early childhood represent a significant challenge in the field of special pedagogy, as they can negatively influence a child's cognitive, emotional, and social development if not addressed in a timely manner.

Early diagnosis plays a critical role in identifying such disorders at the initial stages, enabling the implementation of effective intervention strategies. However, the process of early detection often requires specialized tools, qualified professionals, and close collaboration between educators, speech therapists, and parents.

In recent years, the integration of information and communication technologies (ICT) has created new opportunities for improving the accuracy, accessibility, and efficiency of early diagnostic practices. Digital platforms, mobile applications, and interactive tools not only assist specialists in assessing speech development but also allow parents to receive timely consultative support. This approach contributes to raising awareness, facilitating early intervention, and promoting inclusivity in education.

The present study aims to examine the potential of ICT in supporting the early diagnosis of children with speech disorders and providing primary consultative assistance. By focusing on the intersection of technology and pedagogy, the research seeks to highlight practical solutions that can enhance the quality of special education services and foster better developmental outcomes for children at risk.

MAIN BODY

The practical application of information and communication technologies (ICT) in the early diagnosis of children with speech disorders requires a systematic yet flexible approach. One of the most effective strategies is the use of specialized mobile applications that allow children to engage in interactive speech exercises while simultaneously recording their responses. Such applications can automatically analyze pronunciation, detect deviations from age-appropriate norms, and provide instant feedback to both specialists and parents.

Another practical solution is the integration of online consultation platforms where speech therapists can conduct live sessions with families. Through video conferencing, professionals are able to observe a child's speech behavior in a natural home environment, which often provides more authentic insights than formal clinical settings. These platforms also allow parents to ask questions, receive immediate recommendations, and access a library of digital resources tailored to their child's needs.

Gamification has also proven to be a highly effective tool. By transforming diagnostic tasks into engaging games, children are more motivated to participate, and specialists can collect valuable data without

creating stress or discomfort for the child. For instance, a child might be asked to repeat words to help a virtual character progress in a game, while the system records speech patterns for further analysis.

Equally important is the development of collaborative digital spaces where parents, teachers, and speech therapists can share progress reports, observations, and recommendations. This ensures continuity between home and school environments, allowing interventions to be consistent and reinforcing. Cloud-based platforms and secure communication channels play a vital role in sustaining this collaboration.

Finally, the use of artificial intelligence (AI) within ICT tools is opening new possibilities. AI-powered systems can analyze large amounts of speech data, identify subtle patterns, and generate individualized reports. These insights not only assist in early diagnosis but also guide specialists in designing personalized therapy plans. When combined with regular consultative sessions, AI tools help to ensure that interventions are both precise and adaptive to the child's progress.

Through these practical measures, ICT becomes more than just a supporting tool; it becomes an active participant in the early identification and intervention process. By making diagnosis more accessible, engaging, and collaborative, ICT directly contributes to improving the quality of life for children with speech disorders and their families.

Practical ICT Tool	Application in Early Diagnosis	Consultative Support for Parents	Expected Benefits for Children
Mobile speech therapy apps	Apps record and analyze children's pronunciation and compare it with age-appropriate norms.	Parents receive instant reports and daily practice tasks to continue at home.	Improved speech clarity through regular practice with fun and interactive exercises.
Video conferencing platforms	Specialists observe children's speech behavior in real-time from their home environment.	Parents can ask questions directly and receive personalized recommendations.	Reduced stress for children by being assessed in a familiar environment.
Gamified diagnostic tools	Speech tasks are transformed into interactive games, encouraging natural participation.	Parents are guided on how to continue using games for home-based support.	Increased motivation and willingness to repeat words and sounds.
Collaborative digital platforms	Teachers, therapists, and parents upload progress data and share observations.	Parents stay updated on progress and receive consistent strategies.	Consistency in therapy across home and school environments.
AI-powered analysis systems	AI detects subtle speech errors by analyzing large speech samples.	Parents receive personalized progress reports and therapy suggestions.	Early identification of hidden speech issues and targeted interventions.
Interactive storytelling apps	Children repeat words and phrases to advance in the story, while the system records speech.	Parents get a record of their child's participation and receive feedback on progress.	Enhanced vocabulary, creativity, and confidence in speaking.

CONCLUSION

The use of information and communication technologies provides innovative opportunities for the early diagnosis of speech disorders in children and the delivery of primary consultative support. Practical tools such as mobile applications, video conferencing, gamified diagnostic platforms, and AI-powered analysis systems demonstrate that technology can significantly improve both the accuracy and accessibility of speech assessments. At the same time, parents and specialists gain a reliable means of collaboration, ensuring that interventzions remain consistent across different environments.

By integrating ICT into the diagnostic and consultative process, children are not only identified at an earlier stage but also supported through engaging and interactive approaches that reduce stress and increase motivation. This contributes to the development of more effective speech therapy practices within the field of

_____

special pedagogy. Ultimately, the systematic application of ICT helps create a child-centered environment where early intervention becomes timely, inclusive, and impactful.

REFERENCES

1. Abdullayeva, M. (2019). *Maxsus pedagogika va logopediya asoslari*. Toshkent: Fan va texnologiya.
2. Yo'ldosheva, D. (2020). *Nutq nuqsonlari va ularni tuzatish metodlari*. Toshkent: Ilm Ziyo.
3. Karimova, N. (2021). *Axborot-kommunikatsiya texnologiyalari ta'lim jarayonida*. Toshkent: O'zbekiston Milliy ensiklopediyasi.
4. Qodirov, A. (2018). *Bolalarda nutqiy rivojlanishning nazariy va amaliy asoslari*. Samarqand: SamDU nashriyoti.

_____