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TEACHERS' EXPERIENCE, KNOWLEDGE, AND NEEDS IN USING TEXT-TO-SPEECH (TTS) TECHNOLOGIES FOR STUDENTS WITH DEVELOPMENTAL DYSLEXIA

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SHORT INTRODUCTION

Text-to-speech (TTS) technologies are increasingly used as support tools for students with reading difficulties, including those with developmental dyslexia. In the context of speech and language therapy, these technologies can support reading comprehension, reduce cognitive load, and promote participation in learning.

However, effective use of TTS in educational and therapeutic settings depends on teachers' and specialists' knowledge, experience, and access to appropriate support.



OBJECTIVE(S) AND METHODS

OBJECTIVE: To explore teachers' experience, knowledge, and needs in using text-to-speech (TTS) technologies to support students with developmental dyslexia, providing a basis for further research on interdisciplinary collaboration with speech and language therapists.

METHODS:

Data were collected using an online questionnaire. The sample consisted of 33 teachers working in general education settings.

The questionnaire included items related to teachers' experience with TTS technologies, their knowledge of available tools, perceived barriers, and support needs.

Data analysis included identifying general trends and examining relationships between different responses to better understand how teachers' knowledge, experience, and needs are connected.



RESULTS

The results indicate that teachers possess varying levels of experience with text-to-speech (TTS) technologies, ranging from proficiency to a complete lack of familiarity. Despite this disparity, educators generally recognize the potential of TTS to support students with developmental dyslexia, particularly in enhancing accessibility to learning materials and fostering classroom participation.

Correlation analysis revealed a statistically significant positive relationship between the perceived need for additional time and the availability of good practice examples ($r = 0.58$, $p < .001$), as well as between the requirement for time and the need for practical guidelines ($r = 0.42$, $p < .05$). These findings suggest that teachers who require more time also demand more robust practical and methodological support.

Key barriers to implementation include a deficit in tool-specific knowledge, uncertainty regarding pedagogical integration, and insufficient technical infrastructure within schools. Consequently, respondents emphasized a critical need for professional development, curated practical materials, and ongoing technical assistance.



CONCLUSIONS

The findings indicate that the effective integration of text-to-speech (TTS) technologies in education depends not only on access to tools but also on teachers' knowledge, experience, and the availability of structured support.

Although teachers recognize the potential of TTS technologies for supporting students with developmental dyslexia, their implementation is limited by insufficient knowledge, lack of practical guidance, and inadequate technical support. The identified relationships between support needs suggest that increasing access to practical resources may facilitate more effective use of these technologies in everyday teaching.

These results are consistent with findings by Nordström et al. (2018) assistive technology study, which emphasize that teachers require training and technical support to successfully implement assistive technologies.

Importantly, the findings highlight the need for closer collaboration between teachers and speech and language therapists. Speech and language therapists can play a key role in supporting the implementation of TTS technologies by providing guidance, adapting tools to individual student needs, and helping integrate these technologies into daily learning routines for students with developmental dyslexia.

Overall, the study suggests that effective support for students with developmental dyslexia requires not only technological solutions, but also interdisciplinary cooperation and shared responsibility between teachers and specialists.



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