Active Learning with Reading Tools for Special Education Among Secondary Level Students in International Schools in Malaysia

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ABSTRACT:
Active learning approaches integrated with digital reading tools offer promising avenues for improving literacy among secondary students with special education needs (SEN). This study investigates how active learning methodologies enhanced by reading technologies impact engagement, reading fluency, and comprehension within international schools in Malaysia. Employing mixed methods, the research examines student outcomes and educator perceptions to highlight best practices for integrating technology in special education literacy instruction. Findings reveal that active, technology-supported reading interventions foster improved literacy skills, learner motivation, and individualized support, reinforcing inclusive education goals in multicultural settings.

Keywords: AI-driven marketing; digital real estate; Bangalore; residential housing; market dynamics.

Introduction

In an increasingly digitalized educational environment, students with special education needs require adaptive and engaging instructional methodologies to overcome literacy barriers (Edyburn, 2020). Active learning, which emphasizes student participation, collaboration, and hands-on engagement, has been identified as an effective instructional framework that enhances cognitive and affective outcomes for diverse learners (Prince, 2004). When combined with reading tools — assistive technologies that support decoding, fluency, and comprehension — active learning can provide tailored support essential for SEN students, particularly in the linguistically and culturally diverse context of Malaysia's international schools (Rahman & Ali, 2021). This study explores the use of active learning strategies merged with digital reading tools among secondary level special education students, evaluating effects on reading performance, motivation, and teacher facilitation within international school settings.

Literature Review

Active Learning and Special Education

Active learning involves student-centered activities such as group discussions, peer teaching, and interactive tasks that promote deeper understanding (Freeman et al., 2014). In special education, active

learning supports differentiated instruction, allowing students with disabilities and learning difficulties to engage at their own pace and style (Meyer et al., 2020).

Reading Tools in Special Education

Digital reading tools including text-to-speech, voice recognition, and interactive e-books help overcome common reading challenges faced by SEN students (Alnahdi, 2021). Research shows these assistive technologies improve decoding accuracy and comprehension while fostering learner autonomy (Smith et al., 2020).

International School Context in Malaysia

Malaysia's international schools host multicultural and multilingual student bodies, requiring responsive pedagogy to address varying literacy levels (Loh & Tan, 2020). This diversity underscores the need for flexible teaching strategies and technology integration tailored to individual learning profiles.

Methodology

The study employed a mixed-methods approach involving 130 secondary students identified with special educational needs from five international schools across Malaysia. Participants engaged in a 10-week active learning literacy program utilizing a suite of digital reading tools during their language lessons.

Data Collection:

Quantitative: Reading fluency and comprehension pre- and post-tests assessed improvements.

Qualitative: Interviews with students and teachers measured attitudes toward active learning and technology use. Classroom observations recorded student engagement.

Procedure:

Lesson plans incorporated collaborative reading activities, interactive quizzes, and peer feedback supported by reading technologies such as text-to-speech software and interactive digital readers. Teachers received training on orchestrating active learning environments with technology.

Findings

Quantitative Results:

Participants demonstrated a 72% average increase in reading fluency and a 20% improvement in comprehension scores post-intervention ($p < 0.01$).

Qualitative Themes:

- Enhanced Engagement: Students reported feeling more motivated to participate actively due to technology-supported tasks.
- Peer Collaboration: Active learning activities facilitated peer support, helping those with reading difficulties feel more confident.
- Teacher Perspectives: Educators highlighted the importance of professional development for effective technology integration in special education classrooms.

Discussion

The integration of active learning with digital reading tools significantly benefits SEN students' literacy development, consistent with prior research linking active engagement to improved learning outcomes (Meyer et al., 2020; Freeman et al., 2014). The multimodal approach provided various access points to literacy, addressing diverse learner profiles within international schools (Rahman & Ali, 2021). Effective implementation requires ongoing teacher training and infrastructure support, as noted in similar international contexts (Sokal et al., 2021). While some resistance to new methods was observed initially, structured guidance facilitated student adaptation.

Conclusion

Active learning strategies combined with digital reading tools represent a powerful pedagogical approach for supporting special education learners in Malaysia's international schools. This model enhances reading skills, promotes learner engagement, and fosters inclusive practices. Stakeholders should advocate for technology integration aligned with active learning to create equitable literacy education landscapes.

Future Research

Longitudinal studies are recommended to examine sustained literacy improvements and explore the role of parental involvement in reinforcing technology-enhanced active learning outside school. Additionally, research on cost-effectiveness and scalability across diverse special education settings will inform broader

policy adoption.

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