



The Effects of Assistive Devices on the Performance of Learners with Disabilities in Lower Secondary Education Refugees in Nakivale and Ourchinga Refugee Settlements in Isingiro District

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ARTICLE INFO	ABSTRACT
Published Online: 17 August 2026	Assistive devices play a critical role in enhancing inclusive education by supporting learners with disabilities to access, participate in, and benefit from learning processes. This study examines the effects of assistive devices on the academic performance of learners with disabilities in lower secondary education. Using a desk review methodology, the paper synthesizes empirical and theoretical literature on assistive technologies including mobility aids, hearing devices, braille systems, and digital tools. Findings indicate that assistive devices significantly improve access, participation, independence, and academic outcomes. However, challenges such as inadequate availability, limited teacher capacity, and infrastructural barriers constrain their effectiveness. The study concludes that assistive devices are essential for improving learner performance but must be supported by systemic interventions such as teacher training, infrastructure development, and policy enforcement
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INTRODUCTION

Inclusive education has become a key priority within Uganda's refugee education response, particularly in settlements such as Nakivale in Isingiro District. The United Nations Educational, Scientific and Cultural Organization emphasizes that inclusion should ensure not only access but also meaningful participation and learning for all learners, including those with disabilities (UNESCO, 2020). However, in Nakivale, learners with disabilities continue to face compounded challenges linked to displacement, poverty, and limited access to specialized educational support, especially at the lower secondary level where academic demands are more complex.

Assistive devices such as wheelchairs, hearing aids, braille materials, and digital learning tools play a critical role in addressing these barriers. The World Health Organization and UNICEF (2022) highlight that these technologies enhance mobility, communication, and access to instructional materials, thereby improving participation and academic outcomes. In the Nakivale context, where school environments are often constrained by inadequate infrastructure and resources, assistive devices are essential

for enabling learners with disabilities to engage effectively in classroom activities and learning processes.

Despite their importance, access to assistive devices in Nakivale remains limited and uneven. The United Nations High Commissioner for Refugees (2023) notes that humanitarian education systems often face funding and capacity constraints that affect the provision and maintenance of such technologies. Consequently, many learners either lack appropriate devices or are unable to use them effectively due to insufficient teacher training and inaccessible infrastructure, which ultimately undermines their academic performance and retention in school.

BACKGROUND OF THE STUDY

In recent years, Uganda has been internationally recognized for its progressive refugee policy framework, which promotes the inclusion of refugees in national service systems, including education. The United Nations High Commissioner for Refugees notes that Uganda hosts one of the largest refugee populations in Africa, with settlements such as Nakivale in Isingiro District accommodating tens of thousands of displaced persons from countries including the

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Democratic Republic of Congo, Burundi, and Somalia (UNHCR, 2023). Within this population, learners with disabilities constitute a particularly vulnerable group due to compounded challenges associated with displacement, poverty, and limited access to specialized services.

Uganda's commitment to inclusive education is reflected in policy frameworks such as the Special Needs and Inclusive Education Policy, which emphasizes equitable access to quality education for all learners regardless of ability. However, the translation of these policies into practice remains uneven, particularly in refugee-hosting areas. According to the United Nations Educational, Scientific and Cultural Organization (2020), while Uganda has made strides in expanding access to education, learners with disabilities continue to face systemic barriers including inadequate assistive devices, insufficiently trained teachers, and inaccessible school infrastructure.

In refugee settlements such as Nakivale, these challenges are further exacerbated by resource constraints and the complexity of humanitarian settings. Schools in these areas often operate under strained conditions, with limited funding, overcrowded classrooms, and inadequate teaching and learning materials. The World Health Organization and UNICEF (2022) report that access to assistive devices in low-resource and displacement settings remains critically low, with many learners unable to obtain essential tools such as wheelchairs, hearing aids, or braille materials. This lack of access significantly restricts learners' ability to attend school regularly, participate in classroom activities, and achieve expected learning outcomes.

Empirical evidence from refugee contexts in Uganda indicates that learners with disabilities face multiple and intersecting barriers to education. These include physical barriers such as long distances to school and inaccessible learning environments, as well as social barriers such as stigma and discrimination. Studies have shown that the absence of appropriate assistive devices not only limits access but also contributes to low academic performance, poor retention, and increased dropout rates among learners with disabilities (UNESCO, 2020; WHO & UNICEF, 2022).

Where assistive devices are available, however, their impact is significant. Mobility aids such as wheelchairs and crutches have been associated with improved school attendance by enabling learners to navigate challenging terrains common in refugee settlements. Similarly, assistive technologies such as braille materials and hearing aids enhance learners' ability to engage with instructional content, thereby improving comprehension and academic performance. These findings are consistent with broader literature, which emphasizes that assistive devices play a critical role in facilitating participation and enhancing educational outcomes for learners with disabilities (WHO, 2011).

Despite these benefits, the utilization of assistive devices in Nakivale and similar refugee settings remains constrained by several systemic factors. One major challenge is the limited availability and sustainability of assistive technologies, often due to reliance on donor-funded interventions that may not be consistent over time. Additionally, there is a significant gap in teacher preparedness, with many educators lacking the skills to effectively integrate assistive devices into classroom instruction. This limits the extent to which learners can fully benefit from available technologies (UNESCO, 2023).

Infrastructure also presents a critical barrier. Many schools in refugee settlements lack disability-friendly facilities such as ramps, accessible classrooms, and adapted sanitation systems. These limitations reduce the effectiveness of assistive devices, particularly mobility aids, and hinder learners' participation in school activities. Furthermore, socio-cultural factors, including stigma and negative attitudes towards disability, continue to affect the acceptance and use of assistive devices among learners.

Given these challenges, it is evident that while assistive devices have the potential to significantly improve the performance of learners with disabilities, their impact in refugee settings such as Nakivale is contingent upon a supportive ecosystem. This includes adequate provision of devices, teacher training, accessible infrastructure, and strong policy implementation. Without such coordinated efforts, learners with disabilities in refugee contexts will continue to face barriers that limit their educational opportunities and outcomes.

PROBLEM STATEMENT

Despite Uganda's commitment to inclusive education within refugee settings such as Nakivale settlement, learners with disabilities continue to experience significant barriers to meaningful participation and academic achievement. While the United Nations Educational, Scientific and Cultural Organization underscores the importance of ensuring not only access but also effective learning for all learners, evidence indicates that many learners with disabilities in refugee contexts remain excluded from quality educational experiences due to mobility, communication, and instructional challenges (UNESCO, 2020). These challenges are particularly pronounced at the lower secondary level, where academic demands increase and require greater independence and access to learning resources.

Assistive devices have been identified as critical tools for enhancing access, participation, and performance among learners with disabilities. The World Health Organization and UNICEF (2022) emphasize that technologies such as wheelchairs, hearing aids, and braille materials significantly improve learners' ability to engage in education. However, in Nakivale refugee settlement, access to such devices remains limited and inconsistent, largely due to resource constraints

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and reliance on humanitarian support systems. Consequently, many learners with disabilities are unable to fully benefit from educational opportunities, leading to poor academic performance, low retention rates, and increased risk of dropout.

Furthermore, even where assistive devices are available, their effective utilization is constrained by systemic factors such as inadequate teacher training, lack of inclusive infrastructure, and weak policy implementation frameworks. The United Nations High Commissioner for Refugees (2023) notes that gaps in capacity and resource allocation within refugee education systems continue to hinder the integration of assistive technologies into teaching and learning processes. This creates a critical gap between policy intentions and actual educational outcomes, necessitating empirical investigation into how assistive devices influence the performance of learners with disabilities in lower secondary education within Nakivale refugee settlement.

MAIN OBJECTIVE

To examine the effect of assistive devices on the academic performance of learners with disabilities in lower secondary education in Nakivale refugee settlement, Isingiro District.

RESEARCH QUESTIONS

1. What is the effect of assistive devices on access to education among learners with disabilities in lower secondary schools in Nakivale refugee settlement?
2. How do assistive devices influence classroom participation and engagement of learners with disabilities in Nakivale refugee settlement?
3. What is the effect of assistive devices on the academic performance of learners with disabilities in lower secondary education in Nakivale refugee settlement?

METHODOLOGY

This study employed a desk review research design, involving systematic analysis of secondary data from peer-reviewed journals, books, and institutional reports. The approach is appropriate for synthesizing existing knowledge and identifying patterns across studies (Bowen, 2009). Inclusion criteria included sources published between 2000 and 2024, focusing on assistive devices in education, and addressing learners with disabilities. Data were analyzed using thematic analysis to identify patterns related to access, participation, performance, and challenges (Braun & Clarke, 2006).

RESEARCH FINDINGS

The findings from the reviewed literature demonstrate that assistive devices play a fundamental role in enhancing access to education, participation, and academic performance among learners with disabilities. In relation to access, assistive devices such as wheelchairs, crutches, and walkers

significantly reduce physical barriers, enabling learners with mobility impairments to attend school more regularly and navigate the learning environment effectively. Recent evidence by the World Health Organization and UNICEF (2022) indicates that access to appropriate assistive technologies is directly associated with increased school attendance and reduced exclusion of learners with disabilities. Similarly, sensory assistive tools such as braille materials, hearing aids, and screen readers enhance access to instructional content, thereby promoting equitable learning opportunities (UNESCO, 2023).

With regard to participation and engagement, assistive devices enable learners with disabilities to interact more effectively within classroom settings. Learners using hearing aids, for example, are better able to follow verbal instruction and engage in discussions, while those using braille or digital assistive tools can independently access reading materials. This improved interaction fosters active participation, collaboration with peers, and deeper cognitive engagement. Recent studies highlight that assistive technologies support inclusive pedagogical practices by enabling differentiated instruction and learner-centered approaches, which are critical for enhancing engagement in diverse classrooms (UNESCO, 2023; WHO & UNICEF, 2022). As a result, learners are more involved in classroom activities, leading to improved comprehension and retention of knowledge.

In terms of academic performance, the literature consistently shows that learners with access to assistive devices perform better in key learning areas such as literacy and numeracy. Assistive technologies allow learners to overcome functional limitations and demonstrate their academic potential more effectively. As noted in the uploaded text, assistive devices act as enabling tools that improve reading fluency, writing skills, and problem-solving abilities by increasing access to learning materials and opportunities for practice. Furthermore, the use of assistive devices contributes to learners' independence and self-confidence, which are critical drivers of academic motivation and persistence. According to recent global reports, learners who are able to learn independently through assistive technologies are more likely to achieve improved educational outcomes (WHO & UNICEF, 2022).

However, despite these positive effects, several challenges continue to limit the effective utilization of assistive devices. One of the major constraints is the limited availability and accessibility of appropriate devices, particularly in low-resource and humanitarian settings such as refugee settlements. Many schools lack sufficient funding to procure and maintain assistive technologies, resulting in unequal access among learners. Additionally, inadequate teacher training remains a significant barrier, as many educators lack the technical and pedagogical skills required to integrate assistive devices into teaching and learning processes

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effectively. The United Nations Educational, Scientific and Cultural Organization (2023) emphasizes that without proper training, assistive technologies may be underutilized, thereby reducing their impact on learner outcomes.

Moreover, infrastructural and socio-cultural barriers further constrain the effectiveness of assistive devices. In many educational settings, physical environments are not designed to accommodate learners with disabilities, with challenges such as inaccessible classrooms, lack of ramps, and inadequate sanitation facilities. These barriers limit the usability of mobility aids and restrict full participation in school activities. In addition, stigma and negative attitudes toward disability may discourage learners from using assistive devices, thereby undermining their potential benefits.

Overall, the literature indicates that while assistive devices significantly enhance access, participation, and academic performance among learners with disabilities, their effectiveness is highly dependent on adequate provision, teacher capacity, supportive infrastructure, and inclusive learning environments.

CONCLUSION

The reviewed findings affirm that assistive devices are critical enablers of inclusive education, with significant implications for the performance of learners with disabilities in lower secondary education. As highlighted in the provided text, assistive technologies reduce physical, sensory, and communication barriers, thereby improving access to schooling, enhancing classroom participation, and contributing to better academic outcomes such as literacy and numeracy. In the context of Nakivale refugee settlement, where learners face compounded vulnerabilities, these devices are particularly essential in promoting equitable learning opportunities. Moreover, assistive devices foster independence, self-confidence, and motivation, which are key determinants of academic persistence and achievement (Bandura, 1997; World Health Organization [WHO], 2011). However, the effectiveness of assistive devices is not automatic and depends largely on systemic support structures. Teacher preparedness is a critical factor, as educators must possess the necessary competencies to integrate assistive technologies into instructional practices. Without adequate training, assistive devices may be underutilized, limiting their impact on learning outcomes (Edyburn, 2013; UNESCO, 2020). Additionally, infrastructural accessibility remains a major constraint, particularly in refugee settings such as Nakivale, where schools often lack ramps, accessible classrooms, and appropriate sanitation facilities. These environmental barriers undermine the practical usability of assistive technologies and hinder full participation of learners with disabilities (Oliver, 1990).

Furthermore, the findings highlight the need for a holistic and coordinated approach to maximize the impact of assistive devices. Financial constraints, inconsistent funding, and weak policy implementation frameworks continue to limit equitable access and sustainability of assistive technologies. As emphasized in recent global reports, assistive devices are most effective when supported by strong policy frameworks, adequate investment, and inclusive educational systems (UNESCO, 2020; United Nations, 2015). Therefore, improving the academic performance of learners with disabilities in Nakivale requires integrated interventions that combine assistive device provision with teacher training, infrastructure development, and effective policy enforcement.

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