Leveraging Digital Books for Inclusive Learning in Remote Contexts

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DOI: https://doi.org/10.36941/mjss-2024-0033

Abstract

Digital solutions hold transformative potential for promoting inclusive education, especially in remote and resource-limited regions. This paper investigates the impact of the Tiwerenge 365 Digital Books Project in Malawi, a project that has harnessed innovative strategies to overcome barriers to learning. Through collaborative partnerships and community-driven initiatives, the project has provided digital resources and facilitated their effective use in the learning process. This approach has ensured equitable access to high-quality learning materials, bridging the gap between traditional educational methods and digital resources. Findings underscore the importance of continued investment in educational technology to foster inclusive learning environments globally.

Keywords: inclusive education; digital solutions; educational technology

1. Introduction

The provision of printed books in schools in Malawi has long been a challenge, particularly for children with disabilities, limiting their access to essential educational materials. In this context, the Tiwerenge 365 Digital Books Project emerges as a potentially significant solution. With technological advancements, traditional printed books can now be converted into formats accessible to learners with print disabilities (Harpur & Loudoun, 2011). This transition towards digitally accessible books aligns with global initiatives like the Marrakesh Treaty (2013), which advocates for amendments to copyright laws to ensure learners with print disabilities can access published works in various accessible formats (Li & Selvadurai, 2019).

Beyond merely enhancing access to educational materials, adopting digitally accessible books fosters inclusive practices within educational systems (Harpur & Loudoun, 2011). Research indicates that the utilization of digital talking books can significantly enhance the educational opportunities of learners with print disabilities (Lundh & Johnson, 2015). Moreover, integrating features conducive to print in children’s books is significant for nurturing early reading skills, particularly among
preschool-aged children (Çetin & Bay, 2014). Therefore, by leveraging digital media and adaptive technologies, educational resources can be tailored to accommodate the diverse needs of learners, including those with disabilities (Kim et al., 2014; Shamir et al., 2010).

In the Malawian context, children living in marginalized rural areas and also those with disabilities often face barriers to accessing educational materials. Using digitally accessible books emerges as a promising avenue for advancing inclusive education (Jamali-Phiri et al., 2021; McLinden et al., 2018). However, effectively meeting the needs of these children in resource-limited environments such as Malawi requires coordinated efforts to improve access to educational resources and support services (Ngoie et al., 2021). This paper explores how digital resources can be transformative in addressing educational disparities and promoting inclusivity, especially in remote rural areas. Through a case study analysis, we examine the implementation of accessible digital books by World Vision Malawi’s education technical program. The initiative seeks to bridge the gap between traditional printed materials and digitally accessible formats, thus catering to the diverse learning needs of all learners, including those with disabilities.

2. Background to the Accessible Digital Books Project

World Vision Malawi (WVM) initiated the Accessible Digital Books project to improve age-appropriate children’s literacy. The project equips staff, reading camp facilitators, parents, and local partners, including organizations advocating for individuals with disabilities, with essential resources such as content, devices, and training to enhance accessibility to educational materials. The project began by compiling a collection of pre-existing digitally accessible books produced by WVM, totaling 60 volumes (Zero Project, 2024). The books were converted into videos featuring Malawian Sign Language and consolidated onto SD cards, facilitating individual access on digital tablets or collaborative utilization via projectors in classrooms or community reading hubs.

The accessible digital books offer various features to enhance accessibility, including human audio narration, films with sign language, zoom capability, large font sizes, and text highlighting. Additionally, digital books can be conveniently accessed using software like Bloom Reader, which complements traditional books. Importantly, parents are also allowed to access these digital books using their cell phones, extending the reach of reading programs to households and promoting a learning-friendly environment beyond school. To ensure the smooth implementation of the project, WVM supplied reading club facilitators with the necessary equipment and conducted comprehensive training sessions. These facilitators are crucial in assisting nearly 3,500 children, including over 90 children with various disabilities, in accessing and utilizing digital literature. The primary objective of the Accessible Digital Books program is to reduce educational disparities and promote inclusivity by ensuring that every child, regardless of their circumstances or abilities, can access high-quality educational materials.

3. Literature Review

In countries like Malawi, traditional printed books often pose accessibility challenges for learners, particularly those with impairments. Consequently, there has been a growing emphasis on promoting digitally accessible books in education. The global disruption caused by the COVID-19 pandemic underscored the critical need for alternative educational delivery methods, prompting a rapid shift toward digital educational resources (Sanz et al., 2021). This transition responded to immediate challenges and recognized the long-term potential of digital tools in improving learning outcomes and access to educational materials, particularly in rural areas (Ivanov et al., 2021).

Further, research indicates that incorporating digital resources into education positively impacts knowledge acquisition and learning outcomes (Bakkum et al., 2019). Teachers increasingly acknowledge the value of digital educational materials in enhancing student learning, leading to a surge in utilization (Alberola-Mulet et al., 2021). Establishing a digital educational environment
becomes imperative to ensure equitable access to quality education, especially for those residing in rural areas, thereby addressing the achievement gap (Ivanov et al., 2021).

Moreover, the literature highlights the significance of teachers possessing digital literacy and competence to effectively leverage digital resources in teaching (Falloon, 2020). It advocates for integrating digital competency frameworks into teacher preparation programs to empower educators with the necessary skills for utilizing technology in the classroom. Additionally, ensuring the quality and relevance of digital educational resources in educational contexts requires sustainable methods for their development and distribution (Deng, 2022).

Through the literature synthesis, it becomes evident that digital resources can revolutionize education, particularly in guaranteeing equitable access to quality education for all learners, including those in rural areas or with physical limitations. By harnessing digital technologies and fostering digital literacy among teachers, the educational landscape can be enriched to provide diverse learning opportunities and resources to learners worldwide.

4. Research Methods

This study employed an integrated method combining document analysis and observational techniques, referred to by Creswell (2015) as integrated document analysis and observation. The study focused on the T365 Digital Books Project, with project technical reports and documents serving as primary data sources. Additionally, observational data were collected from reading camps in three area programs (APs) purposively selected for observation.

Document analysis began by identifying pertinent project technical reports and documents associated with the T365 Digital Books Project, including project proposals, technical progress reports, and other relevant materials. These documents underwent thorough examination and evaluation to extract essential information and insights aligned with the research objectives. Coding and categorization were employed to identify recurring themes and patterns within the texts. Observational data were collected using Universal Design for Learning (UDL) reading club observation and UDL Unlock Literacy (UL) lesson observation tools. Five reading camps, randomly selected from the specified APs, were observed, and observations were documented using MEQA.

Following data collection, the researchers juxtaposed document analysis and observation findings. This involved examining the two data sources’ consistencies, inconsistencies, or complementary insights. The findings were triangulated by comparing information obtained from documentation with observations to determine their alignment or disparity. The integrated dataset was analyzed to understand the research topic comprehensively. Researchers examined the combined data concerning the research objectives to establish connections between documented data and observable events. This integrated analysis revealed overarching themes, patterns, and implications that contributed to a thorough understanding of the research problem.

5. Findings

The study findings underscore a successful integration of the Digital Books Initiative within World Vision’s Education Technical Programme, Tiwerenge 365, demonstrating a significant increase in parental engagement with digital literature at home. Leveraging innovative methods closely aligned with the Unlock Literacy (UL) technical framework, particularly utilizing the Home-Read Hub (HRH) within the UL’s community component, facilitated improved collaboration between reading camp facilitators and community members. This collaborative approach, extended to formal educational settings, emphasized the importance of mentorship and oversight from key teachers, aligning with existing literature advocating for collaborative teaching approaches (Hargreaves & Fullan, 2012).

Moreover, the study identifies unique challenges and opportunities in implementing digital solutions in rural, low-resource areas. Collaborations with pre-existing initiatives such as WASHUP were instrumental in overcoming barriers and enhancing accessibility and efficacy, reflecting the
significance of interdisciplinary approaches in development projects (Morgan et al., 2016). For instance, leveraging solar converters from WASHUP to address power supply challenges and optimizing household resources resonate with previous studies highlighting the importance of sustainable solutions and community involvement in technology initiatives (UNESCO, 2017; Warschauer, 2003).

Furthermore, the research highlights the challenges of addressing the learning needs of children with disabilities in resource-constrained settings. The proficiency gap in Malawian Sign Language (MSL) among facilitators underscores the need for targeted interventions to improve communication with speech-impaired children. The effective use of digital resources, including MSL tutorials, to enhance facilitators’ knowledge of MSL resonates with research on technology’s potential to support inclusive education (Al-Azawei et al., 2017; Padden & Humphries, 2005). Additionally, adaptive strategies employed by facilitators align with literature emphasizing the importance of flexible teaching approaches in accommodating diverse learners (Rose & Meyer, 2002).

While direct measurement of reading proficiency was not conducted, the study provides indicators of educational technology’s positive impact on reading outcomes. Increased parental involvement facilitated by digital books and enhanced confidence of facilitators in utilizing technology during reading sessions underscore the potential of EdTech to empower educators and improve teaching practices (Ertmer, 1999; O’Doherty & Bengtsson, 2010). The shift in facilitators’ attitudes towards EdTech reflects the broader trend of technology integration in education and its potential to enhance learning outcomes (Mishra & Koehler, 2006). Overall, embracing technology as a tool for literacy instruction has the potential to meet the diverse needs of learners in a digital age, contributing to improved reading outcomes.

6. Discussion of Findings

Integrating the Digital Books Initiative within WVM’s Education Technical Programme and the subsequent increase in parental engagement with digital literature at home have profound implications for education policy and practice.

These findings suggest that leveraging innovative methods, such as the Home-Read Hub within the Unlock Literacy Model community component, can foster collaboration between educators, communities, and parents. This underscores the importance of incorporating community partnerships into educational initiatives, emphasizing the need for policies that support and incentivize collaboration between schools, NGOs, and local communities (Epstein, 2018). Furthermore, the positive outcomes associated with mentorship from key teachers highlight the potential for integrating informal and formal educational environments, suggesting the importance of policies that facilitate cross-sector collaboration and professional development opportunities for educators (Hargreaves & Fullan, 2012).

Further, identifying unique challenges and opportunities in implementing digital solutions in rural, low-resource areas underscores the importance of tailored policies and practices for such contexts. Collaborations with existing initiatives like WASHUP demonstrate the value of interdisciplinary approaches in overcoming barriers to education access. This suggests the need for encouraging and facilitating partnerships between organizations working across different sectors, such as education, health, and infrastructure (Morgan et al., 2016). Additionally, using sustainable solutions like solar converters and optimizing household resources highlight the importance of policies promoting environmentally friendly and community-driven approaches to technology integration in education (UNESCO, 2017; Warschauer, 2003).

Moreover, addressing the learning needs of children with disabilities in resource-constrained settings presents significant policy and practice implications. The proficiency gap in Malawian Sign Language among facilitators highlights the need for prioritizing inclusive education and providing targeted support for educators working with diverse learners. This suggests the importance of incorporating training and resources for inclusive practices into teacher education programs and
professional development initiatives. Furthermore, the effective use of digital resources to support communication and adaptive teaching strategies underscores the potential of technology to enhance accessibility and inclusion in education, suggesting the need for policies that prioritize investment in inclusive EdTech solutions and infrastructure (Al-Azawei et al., 2017; Padden & Humphries, 2005; Rose & Meyer, 2002).

Finally, the positive impact of EdTech on reading outcomes suggests several policy and practice implications. Increased parental involvement facilitated by digital books and enhanced facilitator confidence in utilizing technology during reading sessions highlight the potential of EdTech to empower educators and engage parents in their children’s learning. This underscores the importance of policies that promote technology integration into teaching practices and encourage parent-school partnerships. Moreover, the shift in facilitators’ attitudes towards EdTech reflects broader trends in education, suggesting the need for policies that support ongoing professional development and capacity-building in digital literacy and instructional technology (Ertmer, 1999; Mishra & Koehler, 2006; O’Doherty & Bengtsson, 2010).

7. Conclusion

The Tiwerenge 365 Digital Books Project is a testament to digital solutions’ transformative power in advancing inclusive and equitable education, particularly in remote and resource-limited regions. Demonstrating effective implementation strategies aligned with the Unlock Literacy framework, the project showcased innovative approaches capable of surmounting barriers to learning. Leveraging collaborative partnerships and existing initiatives, such as World Vision’s WASHUP, the project adeptly navigated operational challenges, ensuring uninterrupted access to digital resources. This underscores the significance of resource utilization strategies and community-driven approaches in maximizing the efficacy of digital interventions in resource-constrained environments.

The project’s success in fostering increased parental participation through digital books underscores the pivotal role of educational technology (EdTech) in extending learning beyond the confines of the classroom, fostering active involvement in children’s academic development. Embracing a community-centric approach that fosters stakeholder collaboration, the project cultivates a culture that values continuous learning within communities. Furthermore, the project’s endeavours to address the educational needs of children with disabilities exemplify a commitment to establishing an inclusive and equitable learning environment. The observed positive shift in attitudes towards EdTech among educators, coupled with heightened facilitator confidence in utilizing technology, underscores the critical importance of effective capacity-building and professional development initiatives in integrating technology into teaching practices. By embracing EdTech as a pivotal tool for literacy instruction, educators can enhance teaching methodologies and equip students with the essential skills required in a digital society.

The findings from the Tiwerenge 365 Digital Books Project illuminate the transformative potential of digital solutions in advancing inclusive and equitable education. Through collaborative partnerships, community empowerment, and innovative methodologies, barriers to learning can be effectively dismantled, fostering an environment conducive to the success of all children. Sustained investments in EdTech and community-driven initiatives are imperative for advancing inclusive education globally, ensuring access to high-quality learning opportunities for all children, regardless of their circumstances.

References


