WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Examining the Factors Influencing the Adoption of Digital Learning in Curriculum Implementation in Masasi Town Council, Mtwara – Tanzania

Ever Ngonyani[1], Prof. Saul Mpeshe[2], Dr. Herbert Wanga[3]

[1]Department of Education, University of Iringa, Tanzania Email: evangonyani67@gmail.com
[2]Department of Education, University of Iringa, Tanzania Email: saul.mpeshe@uoi.ac.tz
[3]Department of Education, University of Iringa, Tanzania Email: wangahp@gmail.com

ABSTRACT

This study examined the factors influencing the adoption of digital learning in curriculum implementation in Masasi Town Council, Mtwara, Tanzania. Guided by the Technology Acceptance Model (TAM), which emphasizes perceived usefulness and perceived ease of use, the study explored teachers' and pupils' experiences with ICT integration in primary schools. A qualitative case study design was adopted, involving 25 teachers and 20 pupils selected through purposive and random sampling across 12 primary schools. Data were collected through semi-structured interviews, observations, and document reviews, and analyzed thematically with MAXQDA software. The findings revealed that the availability and use of digital devices, teacher training, and stakeholder engagement were key factors influencing adoption. Teachers and pupils reported that limited access to computers, unreliable electricity, and insufficient infrastructure constrained implementation, while mobile phones and tablets were more commonly utilized. Training enhanced teacher competence, but gaps in resources and follow-up support persisted. Stakeholder involvement, particularly through government initiatives like the BOOST project, contributed to the establishment of ICT facilities, while community and parental support enhanced resource mobilization. The study concludes that adoption of digital learning is shaped by both resource-related and attitudinal factors, and recommends targeted investment in infrastructure, continuous teacher professional development, reliable internet access, and stronger policy enforcement to ensure effective integration of digital learning in primary schools.

Keywords: Digital learning, curriculum implementation, Technology Acceptance Model.

Introduction

The integration of digital learning into education has become a central concern in global educational reforms, with increasing recognition that technology enhances access, equity, and quality of learning outcomes. According to Scherer and Teo (2019), digital learning can empower both teachers and students by providing flexible learning opportunities and tailored resources, making teaching more engaging and effective. In the context of Tanzania, the government's investment in ICT initiatives, such as supplying tablets and computers to schools, illustrates efforts to align the curriculum with 21st-century learning needs. However, challenges such as inadequate infrastructure, limited electricity, and lack of teacher training persist, particularly in rural areas like Masasi Town Council. UNESCO (2023) highlighted that the shortage of qualified teachers and insufficient digital resources continue to undermine ICT adoption across Africa, while West and Chew (2022) stressed that sporadic implementation without systematic planning leads to unequal digital learning opportunities. Given these realities, it is crucial to examine how local conditions shape the adoption of digital learning in curriculum implementation, focusing on the interplay between resources, teachers' readiness, pupils' engagement, and stakeholder involvement. This study therefore contributes by exploring how digital learning adoption is unfolding in Masasi Town Council, drawing insights that can inform policy and practice in similar contexts.

Literature Review

Theoretical Framework

The study was guided by the Technology Acceptance Model (TAM), developed by Fred Davis in 1989 and grounded in the Theory of Reasoned Action by Fishbein and Ajzen. TAM posits that perceived usefulness and perceived ease of use determine individuals' acceptance of technology, making it a relevant framework for analyzing teachers' and pupils' readiness to adopt ICT in curriculum implementation. Studies highlight that user-friendly design and evident educational benefits enhance teachers' willingness to integrate ICT into pedagogy. TAM further emphasizes the role of training and institutional support in addressing barriers to adoption and improving digital learning integration.

Empirical Review

A growing body of research identifies the main factors influencing the adoption of digital learning as infrastructure, teacher competence, policies, and stakeholder involvement. Mkumbo et al. (2021) found that national priorities, government policies, and resource capacity were critical in determining ICT uptake in Tanzanian schools, noting that rural schools often lag due to weak infrastructure and cultural barriers. West and Chew (2022) reported that inconsistent ICT rollout in developing countries results in scarce benefits, emphasizing the importance of systematic planning and adequate funding for sustainable adoption. Similarly, UNESCO (2023) underscored that ICT can address the shortage of qualified teachers by supporting flexible training, but its success depends on access to reliable devices and connectivity. At the school level, Orodho and Waweru (2021) observed that teachers' perceptions of ICT as either useful or burdensome significantly shaped whether they integrated it into daily teaching, echoing the argument by Davis (1989) in TAM that perceived usefulness directly influences adoption. Moreover, Joo et al. (2018) highlighted that stakeholder engagement, including community and parental support, is crucial in sustaining ICT programs, while Tondeur et al. (2017) emphasized teacher professional development as a determinant of long-term integration. Taken together, these studies suggest that digital learning adoption is a multi-layered process influenced by technological, pedagogical, and socio-economic factors, which provides the basis for examining the realities in Masasi Town Council.

Research Methodology

This study employed a qualitative research approach within a case study design to explore factors influencing the adoption of digital learning in Masasi Town Council. The study area was purposively chosen due to recent ICT investments and its large number of primary schools. A sample of 45 participants, comprising 25 teachers and 20 pupils, was selected using purposive and random sampling techniques to ensure representativeness. Data collection involved semi-structured interviews, non-participant observations, and document reviews, enabling triangulation and enhancing credibility. Thematic analysis, supported by MAXQDA software, was used to identify patterns and themes. Trustworthiness was ensured through credibility, dependability, confirmability, and transferability measures, while ethical considerations included informed consent, confidentiality, and respect for participants' rights.

Findings and Discussion

Factors influencing the adoption of digital learning in curriculum implementation

This section focuses on the first objective of examining factors influencing the adoption of digital learning for curriculum implementation. To achieve this objective, data were gathered from 12 pupils and 17 primary school teachers across a range of public primary schools through semi-structured interviews and observation schedules. The observations focused on key areas, including the utilization of digital devices by teachers and pupils, stakeholder engagement, and the availability of infrastructure and resources. Additionally, various school documents, such as school reports generated, were reviewed to complement and validate the research findings. The presentation of the perspectives of pupils and primary school teachers is organized under the established deductive and inductive coding themes. This analysis utilized thematic analysis, facilitated by MAXQDA version 24.7.

The Availability of Digital Resources

The analysis of interview data indicated that a significant number of primary school teachers and pupils identified the availability of digital resources like computers and tablets as a crucial factor influencing the adoption of digital learning in the implementation of the primary school curriculum. Additionally, participants articulated various factors for the adoption of digital learning when implementing the curriculum. One respondent remarked:

The factors influencing the adoption of digital learning include, first, the availability of digital devices. I mean that pupils need digital devices such as computers. It is not that they are completely unavailable, but there are very few. Tablets are available; many teachers have them nowadays, and I also have one. Teachers use them in teaching, but computers remain a challenge (Interview, Primary School Teacher 7, June 2025).

Additionally, in line with this, pupils expressed similar views on this matter. One respondent noted:

When learning computers, it depends on whether there is electricity that day or not; we learn occasionally, hmm… But here at school, I have never used a computer to learn different subjects. So we are just told what this is and what that is, but we have never seen these things; we only study from the book (Interview, Pupil 4, May 2025).

From the quotation above, it is evident that the presence of digital tools like computers and tablets is one of the factors that influence the adoption of digital learning for curriculum implementation. Respondents indicated that the presence of tablets enables them to teach pupils in the whole process of implementing the curriculum, although they do not have other digital devices such as computers. This aligns with the findings from West & Chew (2022), who revealed that the availability of digital tools such as computers, tablets, and internet infrastructure in schools supports digital learning initiatives. Additionally, Orodho and Waweru (2021) found that in Tanzania, this focus helps identify how teachers perceive ICT tools and whether they feel these tools will make teaching easier and more effective (Orodho & Waweru, 2021).

The Use of Digital Tools

From the interview, it is evident that the majority of primary school teachers and pupils explained that one of the factors influencing the adoption of digital learning in primary schools is the use of digital devices in the classroom. Specifically, many participants reported utilizing mobile phones and tablets for preparing notes, accessing online resources such as Google, and downloading various educational materials that enhance teaching and learning.

Additionally, several schools incorporate projectors and computers as part of implementing digital learning. Regarding the use of digital tools, one of the respondents in the interview session had this to say:

We can use a phone, you see, when you have a touch phone, you can do anything related to digital learning. Personally, when I use a tablet, I like to Google a lot to write the topics I teach, and it helps me prepare my notes well. So, it depends on the skills of using the device. There are no computers, but if we had such devices, it would help (Interview, Primary School Teacher 2, May 2025).

In line with this, other primary school teachers expressed similar views on this situation. One respondent noted: *"…I see some positive impacts because, up to now, some teachers can use their phones to upload materials that they will later use in the classroom. So, as time goes on, some teachers are using them…" (Interview, Primary School Teacher 10, June 2025).*

Furthermore, another respondent commented:

You know, when a new device is introduced, for example, when you come into the classroom with a projector or a computer, it increases the pupils' concentration. So, these devices make teaching and learning in the classroom easier for us. Another impact we observe is that even the teacher who uses digital tools becomes more appreciated. When pupils hear that a particular teacher uses such devices, even those who used to skip classes will rush to attend that lesson. This helps to reduce absenteeism, and even classroom discipline and engagement improve significantly (Interview, Primary School Teacher 4, May 2025).

This perspective is reinforced by the majority of the views of pupils interviewed. One of them expressed:

Yes, I like using the computer in my learning because many pupils enjoy learning through it and understand better, as it makes a lot of the work of writing on the board easier. Another thing is that you can download exams from the internet on the computer and be able to do them here at school (Interview, Pupil 9, June 2025).

The above quotations indicate that the factors influencing the adoption of digital learning in schools, within the implementation of the curriculum and its effects, are the use of digital devices in the classroom. This integration has enhanced pupils' engagement with the subject matter, reduced rates of truancy, heightened attentiveness during lessons, and facilitated the teaching process for teachers. Consequently, the utilization of digital devices yields significant advantages in both the learning experience and the execution of the revised curriculum implemented in primary schools.

Supporting these findings, the Technology Acceptance Model (TAM) was developed by Fred Davis in 1989, highlighting that perceived ease of use (PEOU) and perceived usefulness (PU) are the primary factors that influence users' attitudes toward using technology. This argument is further supported by Mbilinyi et al. (2023), who found that when teachers perceive ICT tools as beneficial (useful) and easy to use, they are more likely to incorporate these technologies into the curriculum, leading to enhanced engagement and efficiency in teaching. Consistent with this, Cobo et al. (2018) noted that digital tools enhance students' cognitive abilities by offering interactive and self-paced learning.

Teachers Training

Based on interviews conducted, it is clear that primary school teachers perceive digital teaching training as a significant factor that facilitates the adoption of digital learning methods in primary schools, particularly for the effective implementation of the revised curriculum. However, they noted a deficiency in practical learning resources. Furthermore, they indicated that when head teachers undergo training, they gain valuable knowledge that empowers them to assist their teachers in the effective utilization of digital tools in instructional practices, including the use of computer devices. During the interview session, one of the respondents had this to say:

First, I can say that when the head teacher attends training, there are things he learns that he is supposed to come and teach us here. But the head teacher himself may have many responsibilities. He might attend the training and learn something; for example, I was teaching Science in standard six, and the head teacher was invited to a training. He told me, "I will show you how to use the mouse on the computer (Interview, Primary School Teacher 8, May 2025)

This segment was echoed by the other 16 respondents. One of them remarked: *"… trainings has both positive and negative impacts. Starting with the positive side, the training helps us gain understanding. However, on the negative side, we still lack the necessary tools, so the problem remains unsolved…" (Interview, Primary School Teacher, 17 June 2025).*

The above quotations illustrate that teacher training serves as a significant influence in the adoption of digital learning within the primary school curriculum. This is primarily because teachers are equipped to exchange knowledge regarding the effective use of technology, such as computers, in instructing their pupils. These findings align with the UNESCO (2023) and the World Bank (2021) reports indicate that ICTs are seen as an important tool to improve teacher training by facilitating access and creating more flexible training opportunities that may not require full-time participation; such programs include targeted skills development for specific courses or software applications driven by time-sensitive learner needs. Consistent with this, IIEP (2021) noted that technology allows learning experiences to be tailored for individual students and adapted to their pace, offering them quicker feedback, which has been demonstrated both academically successful as well as motivational.

Stakeholder Engagement

Interviews conducted with primary school teachers indicated that the active participation of educational stakeholders, including government entities, community, parents, and various partners, is pivotal in facilitating the implementation of digital learning within educational institutions. This involvement encompasses essential aspects such as the building of computer labs, community-based educational initiatives, and the overall educational development of pupils.

Computer Room Building: Analysis of interview data revealed that most primary school teachers highlighted that the government, parents, and the community at large are key drivers in making digital learning possible in schools during the implementation of the curriculum, due to their financial contributions and manpower in building infrastructure such as computer labs. Once the equipment is provided by the government, pupils will be able to learn more digitally. Likewise, parents and pupils enjoy hearing about and witnessing how this implementation is taking place in schools. One respondent said:

First, there was a project called BOOST for constructing classrooms. I joined this school recently, but I attended a meeting where parents were asked to stand up and state their contributions to support the project in providing digital teaching and learning equipment. So, each parent pledged; for example, one said, “I will contribute 5,000 shillings,” and another said, “I will provide this or that” to help complete the computer classroom (Interview, Primary School Teacher 15, June 2025).

A similar viewpoint was expressed by other respondents. One commented:

Currently, for example, in our school, we have an ICT project under the government’s BOOST project. The community has actively prepared to receive this project by contributing labor and financial support. Through the community’s efforts, we have prepared a computer room for the project. We are now just waiting for the project implementers to bring the ICT tools. So, the community has received the initiative positively to ensure their children learn digitally (Interview, Primary School Teacher 6, May 2025).

Additionally, another respondent remarked:

Parents were involved and requested to contribute TZS 3,200 so that the room could be prepared, electricity infrastructure installed, and later, there would be an exercise of placing tables and bringing in computers. That is already in the plans, if I’m not mistaken. So parents were involved. Therefore, when parents and pupils hear that we want to learn digitally, they like it (Interview, Primary School Teacher 11, June 2025).

From this evidence, it is shown that one of the factors influencing the adoption of digital learning in curriculum implementation is the availability of infrastructure, including special computer labs. Furthermore, the BOOST project exemplifies a collaborative initiative involving the government, parents, and the broader community. This partnership aims to enhance educational resources by facilitating the establishment of computer laboratories in schools.

Furthermore, through the observation schedule, it was noted that numerous primary schools feature specialized facilities constructed through a collaborative effort between the Government of the United Republic of Tanzania and the local community, including parents. Additionally, the BOOST project operates as a component of the Education Program for Results Phase II (EPforR II) and plays a vital role in implementing the Five-Year Education Sector Development Plan for the period 2021/22 to 2025/26. These facilities are specifically designed to support digital teaching and learning initiatives within the educational context. The subsequent Figure 6 illustrates these dedicated buildings.

Figure1:

Boost Project (EP for RII)-Computer Room Building

The illustrations presented above depict a newly established computer lab, along with pupils engaging in hands-on computer learning activities. This serves as preliminary evidence indicating that the availability of computer laboratories and technological equipment plays a significant role in influencing pupils' adoption of digital learning within educational settings during the implementation of the curriculum. These findings align with West and Chen (2022), who indicate that Pupils` engagement with digital learning platforms, as well as the involvement of the community and parents, supports digital learning processes.

Generally, both previous and current studies indicated that factors influencing the adoption of digital learning for curriculum implementation include the availability of digital tools, the use of digital tools, teachers' training, and stakeholder involvement. Additionally, this shows that if these aspects, as identified from the research findings, are adequately provided, they can positively influence pupils' learning; however, if they are not available, the opposite will occur in the implementation of digital learning in schools.

Conclusion

The study concludes that the adoption of digital learning in Masasi Town Council primary schools is a multifaceted process shaped by resource availability, teachers' readiness, and stakeholder engagement. Consistent with Mkumbo et al. (2021), who highlighted the importance of government priorities in ICT adoption, this study shows that national initiatives like the BOOST project have begun to make a difference, but gaps remain in ensuring equitable access to devices and internet. Similarly, the findings reaffirm UNESCO's (2023) assertion that teacher training is indispensable for ICT integration, as teachers with exposure to digital tools displayed more confidence in using them. However, despite strong community support, inadequate infrastructure and unreliable electricity continue to undermine adoption, echoing West and Chew's (2022) concerns about sporadic implementation in developing countries. The study therefore concludes that for digital learning to significantly improve curriculum implementation in Masasi and beyond, there must be a deliberate combination of infrastructural investment, sustained professional development, and active stakeholder participation to create an enabling environment for teachers and pupils.

Recommendations

Based on the findings, the study recommends that the government prioritize comprehensive provision of digital resources, including computers, projectors, and reliable internet, in order to close the digital gap between urban and rural schools. In line with Tondeur et al. (2017), continuous professional development programs should be implemented to equip teachers with practical ICT competencies that can be integrated into daily instruction, thereby ensuring effective curriculum delivery. Policymakers should establish monitoring frameworks to evaluate progress and ensure that ICT integration is systematic rather than sporadic, addressing concerns raised by West and Chew (2022) about fragmented implementation. The involvement of communities and parents should be further encouraged, as illustrated by the BOOST project, since local contributions can significantly enhance infrastructural readiness. Additionally, partnerships with NGOs and private organizations should be strengthened to supplement government efforts in financing ICT initiatives. Finally, to align with global education demands, digital literacy should be embedded as a core component of primary education, ensuring that pupils acquire not only subject knowledge but also technological skills that prepare them for future educational and employment opportunities.

References

Cobo, C., Zucchetti, A., & Eyre, H. (2018). Redefining education in the digital age: A focus on learner-centered approaches. *Educational Technology Research and Development*, *66*(4), 759–776. https://doi.org/10.1007/s11423-018-9583-2

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319–340. https://doi.org/10.2307/249008

IIEP-UNESCO. (2021). Using technology to strengthen education systems. International Institute for Educational Planning. https://unesdoc.unesco.org/ark:/48223/pf0000377793

Joo, Y. J., Park, S., & Lim, E. (2018). Factors influencing preservice teachers' intention to use technology. *Journal of Educational Technology & Society*, *21*(3), 48–59.

Mbilinyi, D., Kafyulilo, A., & Kihwele, J. (2023). Teachers' perceptions on integrating ICT in Tanzanian schools. *International Journal of Education and Development Using ICT*, *19*(1), 34–49.

Mkumbo, K., Kalafunja, O., & Kessy, E. (2021). Government policies and ICT integration in Tanzanian education. *Tanzania Journal of Education and Development, 12*(2), 55–69.

Orodho, J. A., & Waweru, P. N. (2021). Teachers' perceptions of ICT use in Kenyan and Tanzanian schools**.** *African Educational Research Journal*, *9*(3), 450–460. https://doi.org/10.30918/AERJ.93.21.084

Scherer, R., & Teo, T. (2019). Editorial**:** Technology acceptance in education**.** *Frontiers in Psychology, 10,* 2333. https://doi.org/10.3389/fpsyg.2019.02333

Tondeur, J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: A systematic review of qualitative evidence**.** *Educational Technology Research and Development, 65*(3), 555–575. https://doi.org/10.1007/s11423-016-9481-2

UNESCO. (2023). Global education monitoring report: Technology in education**.** United Nations Educational, Scientific and Cultural Organization. https://www.unesco.org/gem-report

West, M., & Chew, H. E. (2022). Digital learning in developing countries: Challenges and opportunities. *World Development, 152,* 105–142. https://doi.org/10.1016/j.worlddev.2021.105842

World Bank. (2021). The World Development Report 2021: Data for better lives**.** The World Bank. https://doi.org/10.1596/978-1-4648-1619-4