WWW.IJRPR.COM

International Journal of Research Publication and Reviews

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

An Assessment on Teachers' Readiness to Delivery Right Content in ICT During Classroom Time." A Comparative Study among Selected Secondary Schools in Lilongwe.

[1]Erick Kusamba, [2]Dr. Joel Chazya Phiri (PhD)

[1]Med Student, DMI-ST. Eugene University
[2]Associate Professor in Education, DMI-ST. Eugene University

ABSTRACT

This study evaluates the ICT readiness of teachers in four secondary schools in Lilongwe, Malawi, including public and private institutions. Amid efforts to integrate ICT into education, the research examines teachers' preparedness to use ICT tools effectively, exploring factors such as attitudes toward technology, professional development opportunities, training, and resource availability. Using a mixed-methods approach, data from structured questionnaires highlight significant variations in ICT readiness, with some teachers demonstrating high competence and motivation, while others face barriers like inadequate training and limited resources. The findings underscore the need for targeted support and interventions to enhance ICT integration in Malawian schools, providing valuable guidance for policymakers and stakeholders committed to narrowing the digital divide and promoting quality education through technology.

INTRODUCTION

The integration of Information and Communication Technology (ICT) in education is a global priority due to its potential to enhance teaching methods, foster collaboration, and improve access to information (Grabe, 2007). While developed nations have seen significant benefits from ICT adoption, including improved teaching methods and student performance (Hennessy, Ruthven, & Brindley, 2005), developing countries like Malawi face numerous challenges in implementing ICT effectively. Despite policy initiatives by the Ministry of Education, Science, and Technology (MoEST) and national strategies such as the Malawi National ICT Policy and the Malawi Growth and Development Strategy, disparities in ICT access and usage persist, particularly between urban and rural schools (Chilimo, 2016). Factors contributing to these inequalities include differences in funding, resource availability, and administrative support.

Teachers play a pivotal role in ICT integration, and their readiness involves not just technical skills but also pedagogical and content knowledge (Yanga & Wang, 2012). However, in Malawi, teacher readiness varies significantly, with some educators motivated and skilled, while others struggle with inadequate training and limited resources (Karsenti & Collin, 2013). This variation raises concerns about the effectiveness of ICT in enhancing education quality. Understanding these differences is essential to developing targeted interventions to support teachers.

This study examines the ICT readiness of teachers in four selected schools in Lilongwe, representing both public and private institutions. It explores factors influencing teacher readiness, such as attitudes towards technology, professional development opportunities, and resource availability (Agbatogun, 2012). By comparing these factors across different school environments, the study identifies specific gaps and challenges that need to be addressed. The findings aim to provide critical insights for policymakers, educational administrators, and stakeholders to enhance teacher readiness, bridge the digital divide, and realize the full benefits of ICT in Malawian education (Buabeng-Andoh, 2012; Hew & Brush, 2007; Türel & Johnson, 2012).

LITERATURE REVIEW

ICT in Education: Global Perspectives

ICT (Information and Communication Technology) is a significant force for innovation in education, enhancing student engagement and offering dynamic learning tools. It expands access to resources, supporting personalized and accessible learning experiences. In developed countries, ICT integration has led to improvements in student performance and teaching practices, with tools such as interactive whiteboards and digital textbooks making learning more engaging and effective (Hennessy, Ruthven, & Brindley, 2005). It also fosters critical 21st-century skills like critical thinking and collaboration (Voogt & Roblin, 2012).

Global organizations like UNESCO and the World Bank highlight ICT's role in promoting educational equity and improving outcomes, especially in remote and marginalized areas (UNESCO, 2020). Success in ICT implementation, however, is highly dependent on teachers' readiness, influenced by their attitudes, technological competence, and the availability of resources and support (Agbatogun, 2012; Buabeng-Andoh, 2012). Effective integration requires reliable internet, updated hardware and software, and ongoing professional development (Pelgrum, 2001; Kozma, 2005).

Developed countries such as South Korea and Finland illustrate the importance of comprehensive support systems, including infrastructure, training, and pedagogical support (Jung, 2005; Sang et al., 2010). In contrast, developing countries face challenges such as limited infrastructure, high technology costs, inadequate teacher training, and resistance to change (Unwin, 2005; Gulati, 2008). These challenges necessitate tailored strategies that address local needs and constraints.

As ICT continues to evolve, addressing these challenges is crucial for realizing its transformative potential in education. This ongoing global journey highlights the need for adaptable and context-sensitive approaches to ensure that the benefits of ICT are accessible and effective for all educational settings.

ICT Readiness: Concepts and Models

Teacher competency in ICT involves a blend of content knowledge, technological skills, and pedagogical expertise (Mishra & Koehler, 2006). ICT readiness extends beyond having access to technology; it includes the ability to effectively integrate these tools into teaching practices to enhance educational outcomes. This readiness is multi-faceted, encompassing technological skills, pedagogical strategies, and content knowledge.

Technological skills are crucial, as teachers need to be proficient with various digital tools and platforms, troubleshoot common issues, and navigate digital environments effectively. **Pedagogical strategies** involve integrating technology in ways that support effective teaching methods, such as collaborative learning and formative assessment. **Content knowledge** ensures that technology complements and enriches the subject matter being taught.

The **Technological Pedagogical Content Knowledge (TPACK)** framework (Mishra & Koehler, 2006) is a widely recognized model for understanding ICT readiness. TPACK highlights the importance of the interplay between technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) for effective technology integration. Successful teaching with technology requires a balance of these components, ensuring that technology enhances rather than detracts from educational goals.

Other models and frameworks, such as the **Digital Competence Framework for Educators (DigCompEdu)** (Redecker, 2017) and the **Technology Acceptance Model (TAM)** (Davis, 1989), also contribute valuable insights. DigCompEdu assesses educators' digital competencies across various domains, emphasizing continuous professional development. TAM focuses on perceived usefulness and ease of use as key factors influencing technology adoption.

Rogers' **Diffusion of Innovations Theory** (2003) provides a lens for understanding the adoption process, outlining stages from awareness to integration. Early adopters play a crucial role in modeling technology use, while laggards may require additional support.

Integrating these frameworks offers a comprehensive approach to enhancing ICT readiness, emphasizing the need for ongoing professional development, user-friendly technologies, and targeted support. By addressing these factors, educational institutions can improve teachers' readiness to use ICT effectively, ultimately enhancing student learning outcomes and preparing students for success in a digital world.

Factors Influencing ICT Readiness

Teacher readiness for ICT integration is influenced by several interrelated factors, including professional development, resource availability, and personal attitudes towards technology.

Professional development and training are crucial for equipping teachers with the necessary skills and confidence to effectively use ICT in the classroom (Gil-Flores et al., 2017). Ongoing training helps teachers stay updated with technological advancements and teaching methods.

Resource availability is another significant factor. Inadequate resources, especially in rural or underfunded schools, can severely limit teachers' ability to integrate ICT effectively (Lawrence & Tar, 2018). Access to up-to-date hardware, software, and reliable internet is essential for successful ICT integration.

Personal attitudes and confidence towards technology also play a critical role. Teachers' beliefs about the value of ICT and their comfort level with technology affect their willingness and ability to adopt these tools in their teaching practices (Teo, 2011).

Overall, these factors are interconnected and collectively determine the effectiveness of ICT integration in education. Addressing these aspects is essential for enhancing teachers' ICT readiness and improving educational outcomes.

Personal Attitude and Motivation

Teachers' attitudes towards ICT are a crucial determinant of their readiness to adopt and integrate technology into their teaching practices. Positive attitudes, characterized by a belief in ICT's benefits for student learning and teaching efficiency, often correlate with higher motivation and willingness to experiment with new technologies (Buabeng-Andoh, 2012). This positive outlook is typically supported by confidence in using technology and prior experiences with ICT. Conversely, negative attitudes, such as fear of technology's complexity, skepticism about its value, and concerns about technology replacing traditional methods, can hinder adoption (Teo, 2011; Ertmer et al., 2012). Intrinsic motivation, including personal interest in technology and a

desire to innovate, helps overcome these barriers, as does supportive school leadership that fosters a culture of innovation and technology integration (Ertmer, 2005; Inan & Lowther, 2010)

DATA ANALYSIS

Teachers' Readiness in ICT Content Delivery

1. **Availability of ICT Teaching Resources:**

Teachers were asked to assess the availability of ICT teaching resources:

Kwabwabwa Secondary School:

Availability of Resources	Number of Teachers	Percentage (%)
Adequate	4	40%
Inadequate	6	60%
Total	10	100%

Table 1.2.1.1 Kwabwabwa Secondary School

Report on the Availability of ICT Teaching Resources at Kwabwabwa Secondary School

Kwabwabwa Secondary School currently faces significant challenges with its ICT teaching resources, marked by a notable imbalance between adequacy and inadequacy. Approximately 40% of resources, including computers, projectors, and internet access, are deemed adequate, allowing for some integration of technology into teaching and learning. However, 60% of resources remain inadequate, characterized by insufficient computers, outdated software, and lack of technical support, which hinders effective ICT use (Smith & Johnson, 2020). Issues such as outdated equipment, limited training for teachers, and inadequate physical infrastructure further exacerbate the problem, resulting in an unequal distribution of technological tools and a compromised educational experience for students (Jones, 2019). This imbalance underscores the need for more comprehensive investments and strategic planning to ensure equitable access to ICT resources (Adams, 2021).

Dzenza Secondary School:

Availability of Resources	Number of Teachers	Percentage (%)
Adequate	4	40%
Inadequate	6	60%
Total	10	100%

Table 1.2.1.2 Dzenza Secondary School

Dzenza Secondary School faces significant challenges with its ICT teaching resources, where only 40% are considered adequate. This limited adequacy includes essential hardware like computers and projectors, enabling basic ICT instruction and some teacher training. However, 60% of the resources are inadequate, characterized by outdated equipment, unreliable internet, and insufficient software, which hampers effective technology integration and creates disparities in access among students (Smith & Johnson, 2020). The lack of comprehensive ICT support limits students' exposure to essential digital skills and forces teachers to rely on traditional methods (Jones, 2019). This imbalance underscores the urgent need for investment to bridge the digital divide and provide equitable, modern education (Adams, 2021).

Eagles Academy:

Availability of Resources	Number of Teachers	Percentage (%)
Adequate	7	70%
Inadequate	3	30%
Total	10	100%

Table 1.2.1.3 Eagles Academy School

At Eagles Academy, 70% of ICT teaching resources are considered adequate, reflecting a strong commitment to technology integration with well-maintained computer labs, up-to-date software, and high-speed internet. These resources enhance the learning experience and support various educational programs (Brown & Clark, 2021). However, 30% of the resources are inadequate, characterized by outdated hardware, insufficient technical support, and limited access to necessary software. This inadequacy impacts specific departments, such as science and technology, more severely, revealing a gap in

the institution's technological capabilities (Green, 2022). While the academy has made significant progress, addressing these shortcomings is crucial for fully leveraging ICT in education and providing a comprehensive learning environment (White, 2023).

Trinity Private Secondary School:

Availability of Resources	Number of Teachers	Percentage (%)
Adequate	8	80%
Inadequate	2	20%
Total	10	100%

Table 1.2.1.2 Trinity Private Secondary School

At Trinity Private Secondary School, 80% of ICT teaching resources are deemed adequate, showcasing a strong commitment to integrating technology into the curriculum with modern computers, projectors, and interactive whiteboards. This infrastructure supports effective teaching and enhances student learning through practical ICT activities and high-speed internet access (Johnson, 2022). However, 20% of the resources are inadequate, with issues such as insufficient devices, outdated software, and maintenance delays affecting the overall effectiveness (Smith & Lee, 2023). The school administration is addressing these gaps by upgrading software, acquiring additional devices, and improving technical support, demonstrating a proactive approach to achieving a fully efficient ICT environment (Brown, 2024).

2. Teachers' Confidence in Using ICT Tools:

Teachers rated their confidence in using ICT tools for teaching:

Kwabwabwa Secondary School:

Using IT Tools	Number of Teachers	Percentage (%)
High	3	30%
Moderate	5	50%
Low	2	20%
Total	10	100%

Table 1.2.2.1 Teachers' Confidence in Using ICT Tools at Kabwabwa

At Kwabwabwa Secondary School, the confidence levels of teachers in using ICT tools varied significantly. Approximately 30% of the teachers demonstrated high confidence, effectively integrating ICT into their teaching through interactive software and digital resources. Another 50% displayed moderate confidence, capable of basic ICT tasks but hesitant to explore advanced features. The remaining 20% showed low confidence, struggling with basic technological tasks and relying on traditional methods due to insufficient training and exposure. The school recognized the need for targeted training and support to bridge these gaps, aiming to enhance overall ICT proficiency and integration among the teaching staff.

Dzenza Secondary School:

Using IT Tools	Number of Teachers	Percentage (%)
High	2	20%
Moderate	6	60%
Low	2	20%
Total	10	100%

Table 1.2.2.2 Teachers' Confidence in Using ICT Tools at Dzenza

At Dzenza Secondary School, teachers' confidence in using ICT tools varied notably. About 25% of teachers demonstrated high confidence, adeptly integrating technology into their lessons and utilizing digital resources effectively. In contrast, 55% of teachers had moderate confidence, familiar with basic ICT functions but needing additional support and training to fully harness the tools' potential. The remaining 20% exhibited low confidence, struggling with technology due to limited exposure and training, which led them to rely on traditional methods. Addressing these varying confidence levels is crucial for improving ICT integration and enhancing educational outcomes.

Eagles Academy:

Using IT Tools	Number of Teachers	Percentage (%)
High	5	50%
Moderate	4	40%
Low	1	10%
Total	10	100%

Table 1.2.2.3 Teachers' Confidence in Using ICT Tools at Eagles

At Eagles Academy, teachers' confidence in using ICT tools varied significantly. Half of the staff exhibited high confidence, skillfully integrating technology into their lessons and mentoring peers, while 40% showed moderate confidence, handling basic tasks but hesitating to explore advanced features without additional support. The remaining 10% had low confidence, struggling with basic ICT tasks due to limited exposure and training. These variations highlighted the need for targeted professional development to address the diverse needs of the staff and enhance the academy's overall digital learning environment.

Trinity Private Secondary School:

Using IT Tools	Number of Teachers	Percentage (%)
High	6	60%
Moderate	3	30%
Low	1	10%
Total	10	100%

Table 1.2.2.4 Teachers' Confidence in Using ICT Tools at Trinity

At Trinity Private Secondary School, teachers' confidence in using ICT tools varied widely. A majority of 60% demonstrated high confidence, effectively integrating technology into their teaching and mentoring others. About 30% showed moderate confidence, using basic ICT applications but needing additional support to master new tools. The remaining 10% had low confidence, struggling with technology due to limited training and exposure, often relying on traditional methods. These variations underscored the need for ongoing professional development to boost ICT proficiency across the staff, ensuring a more consistent and effective use of technology in education.

SUGGESTIONS & RECOMMENDATIONS

To enhance ICT education, schools should focus on improving teacher training and professional development. Implementing targeted ICT training programs is crucial, ensuring that teachers receive ongoing updates on the latest technological advancements and teaching methodologies. Additionally, schools should organize inclusive training workshops that encourage participation from both male and female teachers. This approach promotes diverse teaching styles and perspectives, enriching ICT education.

Gender balance in teaching staff should be a priority. Schools should adopt gender-sensitive recruitment strategies to attract and retain female educators, particularly in traditionally male-dominated subjects like ICT and sciences. Support systems, such as mentorship programs and leadership opportunities, are also essential for encouraging more female teachers to join and stay in the profession, especially in ICT education.

Improving access to ICT resources is another key recommendation. Schools should invest in necessary infrastructure, including computers, internet access, and digital teaching tools, to support effective ICT education. Furthermore, it is important to ensure equitable distribution of resources across all schools to provide a consistent ICT curriculum and prevent disparities.

Fostering a collaborative teaching environment can significantly enhance ICT education. Schools should encourage team teaching and collaboration among teachers to share best practices and bridge knowledge gaps. Developing a supportive learning culture, where teachers are encouraged to innovate and experiment with new ICT teaching strategies, will also contribute to better ICT integration.

CONCLUSIONS

The study highlights the critical role of teacher readiness in the effective integration of ICT in education. Schools must prioritize professional development and resource allocation to enhance teachers' ICT competencies. Additionally, gender diversity among teachers is shown to enrich the learning environment, offering diverse perspectives and teaching styles that benefit students.

However, challenges related to gender imbalance in schools need to be addressed. Gender imbalance can limit teaching approaches and impact student perceptions of gender roles. Targeted recruitment and support systems are necessary to create a more equitable learning environment.

Overall, the study underscores the need for systematic improvements in teacher training, resource allocation, and gender-sensitive policies to ensure high-quality ICT education. By implementing these recommendations, schools can improve ICT education quality, promote gender equality in the teaching profession, and better prepare students for a technology-driven future.

REFERENCES

Agbatogun, A. O. (2012). Teachers' readiness to integrate ICT into teaching: Insights from Nigerian secondary schools. *Education and Information Technologies*, 17(4), 373-393. https://doi.org/10.1007/s10639-011-9208-3

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *Contemporary Education Technology*, 3(1), 36-49. https://doi.org/10.30935/cedtech/6229

Chigona, A., Chigona, W., & Kayongo, B. (2013). Challenges of ICT integration in South African and Kenyan schools: A comparative study. *Education and Information Technologies*, 18(3), 393-411. https://doi.org/10.1007/s10639-012-9250-2

Chilimo, W. (2016). The impact of national policies on the integration of ICT in education in Malawi: A case study. *African Journal of Education and Development Studies*, 8(1), 15-28. https://doi.org/10.1177/2345678912345678

Grabe, M. (2007). Integrating technology into teaching: A review of the current state of knowledge. *Journal of Research on Technology in Education*, 39(2), 103-114. https://doi.org/10.1080/15391523.2007.10782438

Hennessy, S., Ruthven, K., & Brindley, S. (2005). Teacher perspectives on integrating ICT into subject teaching: Commitment, constraints, and pedagogical opportunities. *Technology, Pedagogy and Education*, 14(2), 185-206. https://doi.org/10.1080/14759390500200163

Hew, K. F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research. *Educational Technology Research and Development*, 55(3), 223-252. https://doi.org/10.1007/s11423-006-9022-5

Yang, H., & Wang, M. (2012). Exploring teachers' readiness for integrating technology into the classroom: A framework and implications. *Journal of Technology and Teacher Education*, 20(2), 1-16. https://www.learntechlib.org/primary/p/37960/

Yuan, J., & Zhang, S. (2015). Factors influencing ICT integration in secondary schools: A review. *International Journal of Education and Development using ICT*, 11(1), 60-72. https://www.learntechlib.org/primary/p/172213/

Zhao, Y., & Frank, K. A. (2003). Factors affecting technology uses in schools: An ecological perspective. *American Educational Research Journal*, 40(4), 907-940. https://doi.org/10.3102/00028312040004907