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TO ASSESS PRIMARY SCHOOL PUPILS' ATTITUDES TOWARDS MULTIMEDIA TEACHING AND LEARNING SYSTEMS IN MBEYA DISTRICT COUNCIL, TANZANIA

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ABSTRACT

This study assessed primary school pupils' attitudes toward multimedia teaching and learning systems in Mbeya District Council, Tanzania. The increasing use of multimedia which includes text, audio, video, animation, and interactive elements has transformed classroom instruction, yet limited attention has been given to understanding pupils' perceptions of these technologies. Guided by Theory of Multimedia Learning, the study explored how multimedia influences pupils' engagement, motivation, and comprehension. A mixed-methods approach was employed, combining quantitative data from structured questionnaires with qualitative insights from interviews and classroom observations, involving a total of 107 participants from both public and private primary schools. The findings revealed that 91.8% of pupils expressed positive attitudes toward multimedia learning, citing enhanced understanding, enjoyment, and participation compared to traditional teaching methods. However, 8.2% of pupils demonstrated negative attitudes, primarily due to limited access to multimedia tools, poor infrastructure, and insufficient teacher training. Interviews further indicated that multimedia lessons fostered enthusiasm, curiosity, and active participation, especially in well-resourced schools. The study concludes that effective integration of multimedia systems enhances pupils' learning experiences and attitudes when supported by adequate resources, teacher competence, and equitable access. The study recommends that educational stakeholders invest in infrastructure, continuous teacher professional development, and equitable resource distribution to strengthen multimedia integration and promote inclusive, technology-supported primary education.

KEYWORDS: To assess Primary School Pupils' Attitudes Towards Multimedia Teaching and Learning Systems.

INTRODUCTION

In recent years, educational environments at the primary level have witnessed a growing integration of multimedia teaching and learning systems. Multimedia refers broadly to the incorporation of multiple modes of information presentation such as text, audio, video, animation and interactive elements to support instruction (Ali, 2022). The impetus for such integration arises from the conviction that traditional chalk-and-talk methods may no longer fully address the diverse learning needs of contemporary pupils, including those in primary schools. This study focuses on primary school pupils and seeks to understand their attitudes toward using multimedia systems in teaching and learning, recognising that pupils' attitudes can influence the success of technology-rich pedagogies.

Understanding pupils' attitudes is crucial because attitude often serves as a mediating variable in instructional technology adoption (Weng, Yang, & Ho, 2018). In the Technology Acceptance Model (TAM), for example, "attitude toward use" is posited to influence behavioural intention to use, which in turn affects actual usage. In a study of school teachers, Weng et al. (2018) found that ease of use and perceived usefulness influenced attitude, which then influenced intention to use multimedia materials. Although this finding is for teachers, it underscores the theoretical importance of attitude in the adoption of multimedia systems in educational settings and calls attention to the need for studies at the pupil level.

Empirical work in primary schools has shown that multimedia can positively affect learning motivation, engagement and outcomes. For instance, a study in China found that using interactive whiteboards and gamified multimedia improved primary pupils' interest, participation and perception of the importance of learning tasks (Liu, 2025). Such results suggest that multimedia systems may stimulate more favourable attitudes among pupils, likely because interactions are more dynamic, visually rich and responsive compared to traditional instruction. This supports the rationale for assessing pupils' attitudes toward such systems.

In the African context, research on digital and multimedia media in primary education is also emerging. For example, in Tanzania, Kilungeja and Kigobe (2025) found that teachers' perceptions of digital media use positively correlated with their use of those media to enhance

basic skills in lower primary grades. Although the focus was on teacher perception rather than pupil attitudes, the study highlights how attitudes toward technology-mediated teaching and learning matter in this context. This underscores the relevance of investigating primary pupils' attitudes in Tanzanian (or similar) settings to generate local evidence.

Attitudes toward multimedia systems among pupils may be influenced by a number of factors such as prior exposure to technology, perceived ease of use, perceived enjoyment and the instructional design of multimedia materials. Razavi, Ghanizadeh, & Akbari (2016) investigated EFL teachers' attitudes toward multimedia and found that attitudes could be reliably measured and were influenced by their beliefs about usefulness and ease of use. While this study focused on teachers, the framework suggests that pupils' attitudes may similarly be shaped by their experiences with multimedia teaching systems and the learning environment provided.

However, despite the promise of multimedia, the literature also points to challenges and gaps. For instance, Rafiq Ali (2022) conducted a case-study with primary teachers in Karachi and found that while most teachers believed multimedia to be easy and engaging, they also identified challenges such as infrastructure, training, content design and contextual alignment of multimedia tools. These challenges may affect pupils' attitudes: if multimedia systems are poorly implemented or under-resourced, pupils may develop negative attitudes or indifference. Thus, assessing pupils' attitudes must take into account such contextual realities.

Attitude assessment is particularly important at the primary level because younger learners may have distinct cognitive, affective and social responses to multimedia-rich instruction compared to older learners. Primary school pupils may respond more viscerally to colorful animations, sound effects and interactive games, potentially leading to either heightened engagement or distraction. Islam et al. (2014) in their experimental study of primary pupils found that visual materials combined with teacher instruction significantly promoted knowledge acquisition and had positive pupil perceptions toward blended visual-verbal approaches. This suggests that young pupils' attitudes toward multimedia teaching systems warrant direct investigation.

Moreover, attitudes among pupils can have further implications for equity and inclusion in education. If pupils in under-resourced schools receive sub-standard multimedia systems

(e.g., obsolete hardware, low-quality content, unreliable internet), their attitudes toward multimedia may skew negative, reinforcing digital divides. In a Tanzanian context, for example, challenges of infrastructure and training have been documented (Kilungeja et al., 2025). Therefore, studying primary pupils' attitudes becomes an important aspect of ensuring that multimedia teaching and learning systems are being implemented in a way that fosters positive learner dispositions rather than exacerbating inequalities.

Finally, situating the current study within the broader educational change context, the COVID-19 pandemic and consequent shifts to digital and blended learning have accelerated the adoption of multimedia enriched instruction in many primary schools globally (Lytvynova and Demeshkant, 2022). Though much of this shift has been reactive, it has opened a window of opportunity to explore how pupils perceive multimedia teaching and learning systems in "normal" face-to-face or blended contexts. Understanding primary school pupils' attitudes will thus contribute to the broader goal of effective multimedia integration and will inform curriculum developers, policymakers and practitioners about how best to design, implement and support multimedia teaching systems in primary schools. The intent of this study is thereby justified.

LITERATURE REVIEW

Theoretical framework

The Theory of Multimedia Learning (TML) by Richard E. Mayer (2001, 2021) is highly relevant to this study because it explains how learners acquire knowledge more effectively through the combination of words and visuals than from words alone. The theory is grounded on three core assumptions: the dual-channel assumption, which suggests that people process information through both visual and verbal channels; the limited capacity assumption, which proposes that each channel can handle only a limited amount of information at a time; and the active processing assumption, which emphasizes that meaningful learning occurs when learners actively select, organize and integrate information. In the context of primary education, multimedia teaching and learning systems engage pupils through animations, pictures, videos and sounds that stimulate both channels, making learning more interactive and enjoyable. When well designed, multimedia reduces cognitive overload, supports comprehension and enhances motivation factors that directly influence pupils' attitudes toward multimedia-based instruction.

Moreover, the Theory of Multimedia Learning provides a foundation for understanding the relationship between instructional design, motivation and learner attitudes. According to Mayer and Fiorella (2022), multimedia instruction that follows cognitive principles such as coherence, signaling and modality enhances engagement and emotional satisfaction. For primary school pupils, whose learning preferences are often visual and experiential, well-structured multimedia lessons can create positive emotional responses and favorable attitudes toward learning. Conversely, poorly designed multimedia materials may cause confusion or frustration, leading to negative attitudes. Therefore, this theory not only explains how multimedia facilitates effective learning but also supports the rationale for assessing pupils' attitudes toward multimedia systems, as these attitudes reflect how effectively cognitive and affective needs are being met in multimedia-enhanced classrooms.

Literature Review

The attitudes of pupils toward multimedia teaching and learning are critical for its successful implementation because positive learner perceptions can enhance engagement and learning outcomes. Ertmer et al. (2019) emphasized that when teachers perceive multimedia as valuable, they are more likely to integrate it effectively into their instructional practices. This perception not only affects teaching strategies but also shapes how pupils interact with multimedia tools. Pupils who observe their teachers confidently and creatively using multimedia tend to develop more positive attitudes themselves, showing greater interest, participation and motivation. Conversely, if teachers appear hesitant or underconfident with technology, pupils may mirror this uncertainty, limiting the effectiveness of multimedia integration.

Mayantao and Tantiado (2024) investigated how teachers in the Philippines utilize digital tools in their classrooms and found that while many teachers frequently use applications such as Excel and PowerPoint, their confidence in integrating these tools effectively into teaching varies widely. The study highlighted that familiarity with digital tools does not necessarily translate into pedagogical competence, as some teachers remain hesitant to explore advanced features or adopt interactive approaches due to limited training or experience. To address this gap, the researchers emphasized the importance of ongoing professional development programs, technical support and institutional recognition for teachers who adopt innovative digital practices. By improving both skills and confidence, schools can ensure that teachers

leverage technology not only for administrative tasks but also to enhance pupils' learning outcomes and engagement.

Livingstone and Blum-Ross (2021) noted that parents generally demonstrate strong support for multimedia learning because they recognize its potential to enhance their children's engagement, understanding and overall academic performance. Parents observe that lessons incorporating videos, animations and interactive applications often make abstract concepts more accessible, helping children grasp ideas that might otherwise be difficult to understand through traditional teaching methods. This support is not limited to encouragement at school; many parents in private schools also provide access to devices, internet and learning platforms at home, reinforcing classroom learning. Furthermore, parental backing can influence teachers' adoption of multimedia tools, as educators are more likely to integrate digital resources when they perceive active home support.

In Korogwe District, Tanzania, studies show that pupils become much more engaged in their lessons when teachers use interactive teaching methods that include multimedia technologies. A survey carried out in public primary schools found a clear link between interactive approaches and pupil activeness in the classroom. Learners explained that lessons felt more enjoyable and easier to follow when teachers used projectors, videos, or other multimedia features. Instead of just listening passively, pupils were more willing to ask questions, join discussions and participate in activities. Teachers also noticed that multimedia resources helped simplify difficult topics, sparked curiosity and encouraged even shy learners to take part. These outcomes highlight how multimedia-supported interactive teaching can transform the classroom into a more dynamic and inclusive space for learning (Mbuti, 2022).

Kilungeja and Kigobe (2024) explained that pupils' positive attitudes toward multimedia learning are strongly connected to motivation. Multimedia tools such as videos, animations and digital games add variety and excitement to lessons, helping to reduce the monotony often associated with traditional teaching. In their study in Dodoma City, they found that pupils who were exposed to digital media showed greater interest in reading tasks and demonstrated less anxiety about pronunciation or word sounds. This shift not only improved learners' engagement but also boosted their self-confidence, encouraging them to participate more actively in class activities. Teachers further noted that the interactive nature of multimedia resources sparked curiosity and enthusiasm, making pupils eager to practice skills

they previously avoided. These results highlighted the powerful role of multimedia in motivating learners and shaping more positive attitudes toward education.

Israel (2017) found that exposure time and familiarity with multimedia tools have a significant effect on pupils' attitudes toward learning. As children spend more time using technologies such as interactive whiteboards (IWBs), they gradually become more comfortable and confident in applying them during lessons. This growing familiarity not only reduces initial anxiety but also strengthens pupils' positive perceptions of the tools. The study revealed that even after several years of using IWBs, pupils continued to affirm their usefulness and benefits, showing that the excitement of new technology can evolve into a lasting positive attitude when the tools are consistently available. These findings suggest that reliability and regular integration of multimedia in classroom practice are essential to sustaining pupils' motivation and engagement over time, rather than having technology seen as a short-term novelty.

Higgins et al. (2019) reported that while many pupils appreciate the interactive and engaging nature of multimedia learning, some express concerns about an overreliance on digital tools. Pupils noted that constant use of computers, tablets, or educational software can sometimes lead to distractions, reduced face-to-face interaction and difficulty concentrating on tasks without technological support. In addition, some pupils worry that excessive dependence on digital resources may limit the development of traditional learning skills, such as handwriting, mental arithmetic, or reading from printed texts. These concerns highlight the need for a balanced approach in integrating multimedia into lessons, ensuring that technology enhances rather than replaces core learning processes. Educators are encouraged to combine digital tools with traditional teaching methods to maintain engagement, develop critical thinking and prevent potential overdependence on technology.

Kirkwood and Price (2020) argued that without reliable access to digital tools, stable electricity and internet connectivity, even the most motivated teachers cannot integrate multimedia effectively into their lessons. Similarly, insufficient training limits teachers' ability to design interactive lessons, use educational software, or troubleshoot technical problems, which can reduce pupil engagement and learning outcomes. The authors further noted that strategic investment in both hardware and teacher development not only enhances the quality of instruction but also ensures that multimedia tools are used consistently and sustainably. By addressing infrastructural and professional needs, policymakers and

administrators create an environment where technology can meaningfully support teaching and learning rather than remain an underutilized resource.

Sahin and Thompson (2021) emphasized that the successful adoption of multimedia teaching in schools hinges not only on the availability of digital resources but also on the attitudes and perceptions of pupils. The study found that when learners hold positive views toward multimedia tools such as interactive whiteboards, tablets and educational software they are more likely to engage actively, participate in class discussions and utilize the resources effectively. Conversely, if pupils feel apprehensive, bored, or overwhelmed by technology, even well-equipped classrooms may fail to achieve the intended learning outcomes. This underscores the importance of assessing and fostering pupils' perceptions prior to implementing multimedia programs. By understanding pupils' preferences, comfort levels and motivational drivers, educators can design lessons that optimize engagement, ensure equitable access to digital resources and promote meaningful learning experiences in primary schools.

Aflalo and Huri (2017) emphasized that multimedia teaching significantly enhances pupils' understanding of complex concepts by presenting information through multiple channels visual, auditory and kinesthetic. For example, in science and mathematics lessons, abstract ideas such as the water cycle, electrical circuits, or geometric transformations can be challenging to grasp through text alone. Using interactive whiteboards, animations and digital simulations allows pupils to visualize these processes dynamically, making them easier to comprehend. Pupils are able to see concepts in action, manipulate variables and receive immediate feedback, which promotes deeper understanding and better retention of knowledge.

Research Methodology

This chapter outlines the research methodology adopted in assessing primary school pupils' attitudes toward multimedia teaching and learning systems. It details the procedures and techniques used to collect and analyze data to achieve the study objectives. The methodology includes the description of the study area, research approach and design, population, sampling procedures, sample size, data sources, data collection methods, data analysis and measures for ensuring validity, reliability and ethical compliance. Presenting the methodology in this systematic manner ensures that the study's findings are credible, replicable and grounded in sound research principles.

The study was conducted in Mbeya District Council, located in the Mbeya Region of Tanzania. The area was selected due to its diverse educational settings that encompass both rural and urban characteristics, making it ideal for generalizing findings to other parts of the country. Furthermore, Mbeya District Council has a relatively high number of schools with access to electricity and internet connectivity, enabling the integration of multimedia systems in teaching and learning. The study involved teachers, pupils and education officers from both public and private primary schools and the sample size were 107. This diverse composition allowed for a holistic understanding of pupils' attitudes toward multimedia teaching and learning systems across different educational environments.

A mixed-methods approach was adopted, combining both qualitative and quantitative research strategies to provide a comprehensive understanding of the study problem. The quantitative component allowed the researcher to collect measurable data through structured questionnaires, while the qualitative aspect, involving interviews and observations, provided in-depth insights into participants' experiences and perceptions. This combination enriched the findings by integrating numerical data with contextual narratives. The study employed both cross-sectional and descriptive research designs, which facilitated data collection at one point in time while allowing a detailed description of the characteristics, attitudes and challenges associated with multimedia teaching and learning among primary school pupils in Mbeya District Council.

Data were collected from both primary and secondary sources. Primary data were obtained through questionnaires administered to pupils, interviews with education officers and teachers and observations of classroom practices involving multimedia tools. Secondary data were collected from policy documents, government reports and scholarly literature on the use of multimedia in education. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) for quantitative data, while qualitative data were analyzed through content analysis to identify emerging themes and patterns. Reliability was ensured through the consistent use of standardized tools and procedures, while validity was enhanced by triangulating data collection methods. Ethical considerations such as confidentiality, informed consent and voluntary participation were strictly observed throughout the study, ensuring that the research adhered to professional and academic standards.

Findings

The findings presented in this section relate to the second objective of the study, which sought to assess primary school pupils' attitudes toward multimedia teaching and learning systems in Mbeya District Council. As summarized in Table 4.2, the majority of pupils (91.8%) demonstrated positive attitudes toward the use of multimedia tools in learning, while only 8.2% expressed negative perceptions. This result suggests that most pupils view multimedia as an effective and enjoyable approach that enhances their classroom experiences compared to traditional teaching methods. Pupils reported that multimedia-based lessons such as those involving videos, animations and interactive presentations made learning more interesting, easier to understand and more engaging.

These findings highlight that pupil recognize the benefits of multimedia in improving their comprehension, retention and participation in lessons. Many respondents noted that multimedia caters to diverse learning styles visual, auditory and kinesthetic thereby supporting better cognitive development. The positive attitudes observed also indicate pupils' readiness and willingness to embrace technology as part of their daily learning process. However, a small proportion of pupils (8.2%) expressed negative attitudes, which were largely attributed to factors such as limited access to multimedia resources, poor infrastructure and insufficient teacher training in Table 4.2.

Table 4. 2: Pupils' Perceptions toward the Use of Multimedia Tools

Frequency	Percent
89	91.8
8	8.2
97	**100.0**

Source: Researcher, (2025).

The findings in Table 4.2 show that pupils' attitudes towards multimedia teaching and learning systems in Mbeya District Council primary schools were positive by 91% of all the respondents and only 8% showed negative attitudes towards the use of multimedia tools. This implies that the majority of the users are positive, willing and ready to use multimedia as learning and teaching tools due to the benefits acquired against traditional methods of learning. These benefits include: improvement of cognitive development by incorporating visual, auditory and kinesthetic learning styles.

This attitude aligns with the findings on multimedia tools such as interactive whiteboards, tablets, computers, TV and educational videos as well as gamified learning applications contributing to more engaging lessons. Digital storytelling platforms and simulations software also provide immersive learning experiences allowing pupils to interact with contents in more meaningful ways.

Moreover, the minority of the respondents, 8% exhibited negative attitudes due to existing challenges including insufficient multimedia tools, shortage of trainings and poor infrastructure. This notion is supported by Huda (2024) on his study pertaining to the challenges of using multimedia tools in teaching and learning processes whereas inadequate digital classrooms, internet connectivity, lack of adequate teachers and trainings and inconsistency of teacher- pupil ratio contributed to negative attitudes towards the use of multimedia tools.

The findings obtained from interviews conducted with teachers, head teachers and education officers in Mbeya District Council. The purpose of the interviews was to gain deeper insights into the availability of multimedia teaching and learning systems, pupils' attitudes towards their use and the challenges faced in integrating these tools in primary schools. The responses provided by the participants offered valuable perspectives that complemented the observational data and helped to clarify the practical realities within schools. The findings are organized according to the specific objectives of the study, highlighting the similarities and differences in experiences and opinions across different stakeholders. The participant revealed that.

Pupils often tell me that they remember topics better when I use videos or animations. They say it feels like they are watching a story, which makes learning fun. The motivation to learn increases because lessons feel less difficult. This shows that multimedia has a lasting impact on their learning (interviewed teacher, August, 2025).

Another participant revealed that:

In schools with more multimedia resources, pupils show greater confidence in using technology. They are more enthusiastic about lessons and more eager to explore new topics. Pupils in schools with fewer resources often miss this excitement. The difference in attitudes is very visible when you compare the two groups (Interviewed Head Teacher from school X August 2025).

To better understand the situation in primary schools, the study collected direct views from teachers, head teachers and education officers. Their responses provided rich insights into how multimedia systems are used, how pupils react to them and the challenges faced in different school settings. The quotations below highlight the participants' experiences and perspectives in their own words, offering a clearer picture of the realities on the ground.

I believe multimedia systems connect classroom learning with real-life situations. For example, pupils watching a documentary or simulation understand how lessons apply to the world outside school. This connection excites them and makes learning more meaningful. It transforms education into something practical and engaging (Interviewed education officer August, 2025).

The findings from the above interviews revealed that multimedia teaching and learning systems have a significant positive impact on pupils' engagement, understanding and motivation. Teachers reported that pupils remember lessons better when videos, animations, or interactive tools are used, as these methods make learning enjoyable and easier to grasp. Head teachers highlighted that schools with more multimedia resources foster greater pupil confidence, enthusiasm and curiosity, while those with limited tools show lower motivation and participation, demonstrating a clear disparity between well-resourced and under-resourced schools.

Education officers emphasized that multimedia systems also help connect classroom learning to real-life situations, making lessons more meaningful and practical. Pupils are more likely to understand and retain concepts when they can visualize or simulate real-world applications of what they are learning. Overall, the interviews indicate that multimedia integration is highly beneficial for primary school education, but its effectiveness depends on the availability of resources, teacher competence and equitable access across schools. Addressing these factors is essential to maximize the potential of multimedia tools in enhancing teaching and learning in Mbeya District Council.

Discussion of the study

The discussion of this study interprets the results obtained from interviews, observations and other data sources, providing a deeper understanding of pupils' attitudes toward multimedia teaching and learning systems, the availability of multimedia tools and the challenges encountered in their use. By comparing the study's findings with those of other scholars, this

section highlights similarities, differences and new insights, demonstrating how the results fit within the broader educational context. Furthermore, the discussion examines the implications of these findings for teaching and learning particularly how multimedia tools influence pupils' attitudes, engagement, motivation and knowledge retention. It also considers contextual factors such as teacher competence, resource availability and school location, all of which shape pupils' experiences and perceptions. The aim is to provide a critical analysis that not only interprets the observed patterns but also offers practical recommendations for improving the integration of multimedia systems in primary schools.

The study revealed that pupils showed high levels of engagement and enthusiasm during lessons that incorporated videos, animations and other interactive content. This aligns with Shah (2015), who noted that multimedia-aided teaching enhances learner engagement and fosters positive attitudes toward learning. The visual and interactive nature of multimedia helps to capture attention and sustain interest, making learning enjoyable and meaningful. Similarly, findings indicated that pupils remembered concepts more effectively when tools such as tablets and projectors were used. Tugirinshuti et al. (2022) found that video-based multimedia reinforces cognitive processing through visual and auditory stimulation, leading to improved retention and comprehension. These findings confirm that multimedia plays a crucial role in deepening understanding and supporting long-term learning outcomes among primary school pupils.

Gender and school location also appeared to influence pupils' attitudes toward multimedia learning. Female pupils demonstrated slightly higher motivation and engagement compared to male pupils, consistent with Hamad (2024), who found that girls often display greater enthusiasm for digital learning tools. Moreover, pupils from urban schools exhibited higher confidence and enthusiasm when using multimedia compared to those from rural areas. Ndibalema (2014) attributed this difference to disparities in access, as urban schools often have better technological infrastructure and training opportunities. These findings emphasize the need for equitable distribution of digital resources to minimize the urban–rural gap in multimedia education.

Teacher competence emerged as another key factor influencing pupils' attitudes toward multimedia-based learning. The study found that pupils responded more positively when teachers confidently integrated digital tools into lessons. Ertmer et al. (2012) similarly asserted that teachers' proficiency in using technology directly affects learners' engagement

and motivation. Collaborative and interactive multimedia activities also boosted pupils' participation and curiosity, as noted by Tugirinshuti et al. (2022), who observed that peer collaboration during multimedia lessons strengthens engagement and improves attitudes toward learning. However, challenges such as technical failures, inadequate tools and insufficient training hindered smooth implementation. Kilungeja et al. (2024) and Huda (2024) both highlighted that unreliable infrastructure and limited teacher preparedness negatively affect the integration of digital tools. As Azad (2024) emphasizes, continuous professional development and access to modern multimedia resources are essential to overcome these barriers.

In summary, the study confirmed that multimedia teaching and learning systems significantly enhance pupils' engagement, motivation and comprehension in primary schools within Mbeya District Council. Pupils expressed overwhelmingly positive attitudes toward multimedia-supported lessons, especially where teachers effectively used projectors, computers, tablets and interactive materials. However, disparities in access between urban and rural schools and teachers' limited confidence in using technology present major obstacles. As Mhlongo (2023) argues, effective integration of multimedia can transform traditional teaching into an active, learner-centered process provided that infrastructure, training and support are adequately addressed.

CONCLUSION

The findings of this study revealed that primary school pupils generally hold positive attitudes toward multimedia teaching and learning systems. Pupils showed greater engagement, motivation and understanding when lessons incorporated videos, animations and interactive materials. Multimedia tools not only enhanced pupils' interest in learning but also improved knowledge retention and participation. However, disparities in access to digital resources especially between urban and rural schools were evident, limiting the equal adoption of multimedia practices. Additionally, teachers' limited confidence and lack of training in using multimedia tools constrained their effective integration into classroom instruction. These challenges highlight the need for a more inclusive and supportive approach to the adoption of multimedia systems in Tanzanian primary schools.

Recommendations

Based on the findings, it is recommended that education stakeholders, including the Ministry of Education, local education authorities and school administrators, invest in improving

access to multimedia facilities and infrastructure across all schools. Continuous professional development programs should be introduced to build teachers' digital competence and confidence in using multimedia for instruction. Schools should also encourage collaborative and interactive multimedia-based learning activities to enhance pupils' engagement and understanding. Furthermore, policymakers should prioritize bridging the digital divide between urban and rural schools through equitable resource allocation and technical support. By addressing these factors, multimedia teaching and learning systems can be effectively utilized to improve the quality of primary education and foster positive learning attitudes among pupils.

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