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Nurturing Parental Involvement in Artificial Intelligence (AI) Literacy among Children in Multicultural Classrooms

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Abstract

Artificial intelligence (AI) applications are more and more embedded into day-to-day family activities, from discourse with voice assistants to mobile guidance. Much as educational strategies for teaching AI to children have come about, the role of parents in this process remains uncharted territory. This study intends to examine how parents' involvement and engagement can be nurtured in a manner that would result in developing AI literacy among children in multicultural classrooms. Parents' involvement in AI literacy is important for a number of reasons. For example; Parents who understand AI can fortify the learning occurring in schools. AI literate parents can help children with AI-related homework, projects, and inspire curiosity about AI technologies. They can also supervise their children's use of AI technologies, guaranteeing that children use them safely and appropriately. This is important to preclude misuse and to teach children about responsible digital behaviour. Often times, children have better access to technology and digital learning resources than their parents. Teaching parents about AI will assist to narrow this gap, enabling them to seek and provide resources that support their child's education. Furthermore, parents from different backgrounds can guarantee that AI learning is culturally relevant and inclusive, making it accessible and relevant for their children. The study chose a case study research design, and scrutinized learners in grades 6 and 7 across four schools in Kabwe District, Central Province, Zambia. Thirty participants, including ten learners, ten teachers, and ten parents, were purposively sampled. The purposive sample of thirty participants comprised, ten learners, ten teachers, and ten parents. The means of data collection were through interviews and observations that were thematically analysed. Findings revealed that although learners often times used AI, their parents did not, mainly due to not having access to technology and time constraints. Furthermore, learners frequently abused AI, negatively affecting their academic performance. Implementing community workshops to enhance AI literacy among both parents and teachers, enabling them to better support and guide their children is recommended.

Key Words: Artificial Intelligence, AI Literacy, Multicultural Classrooms, Parental Involvement, Education, Technology
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1. INTRODUCTION

In an era dominated by technological advancements, the integration of Artificial Intelligence (AI) into education has become a crucial aspect of preparing students for the future. This article presents the findings of a comprehensive case study conducted in selected primary schools in Kabwe District, Zambia, focusing on nurturing parental involvement in AI literacy among children in multicultural classrooms.

This study was guided by the following objectives

(1) To describe school and parental involvement in nurturing Artificial Intelligence (AI) literacy among children in multicultural classrooms
(2) To determine models and activities undertaken by parents and schools to enhance children's understanding and engagement with artificial intelligence
(3) To establish challenges and successes parents and schools face in nurturing children's understanding and engagement with artificial intelligence

2. PHILOSOPHICAL UNDERPINNING

The philosophical underpinning of this study is mainly based on constructivist theory, which suggests that learning is an active, constructive process whereby learners construct new knowledge upon the basis of their previous experiences. Constructivism stresses the importance of context, social interaction, and the active role of learners in the building of their own understanding (Vygotsky, 1980).

Active Learning and Engagement:
Constructivism argues that learners acquire understanding by actively engaging with content as opposed to passively receiving content. In the context of AI literacy, learners actively interact with AI technologies, experimenting and investigating their potentiality. The study's focus on models and activities undertaken by parents and schools to improve AI literacy correspond with the constructivist approach, which promotes hands-on activities and real-world problem-solving.

Social Interaction and Collaboration:
Vygotsky posits that social constructivism and social interaction play a key role in the evolution of cognition. Learning is perceived to be a socially mediated activity. By giving prominence to parental involvement and school collaboration, the study recognises the importance of social contexts and interactions in the learning process. When parents are engaged in AI literacy initiatives this leads to formation of a collaborative environment in which children can learn from both teachers and family members, strengthening and contextualizing their understanding.

Cultural Relevance and Inclusivity:
The learner's cultural background and as well as prior knowledge as essential components of the learning process are valued by constructivism. Constructivism argues for culturally relevant pedagogy that recognises and includes learners' cultural experiences. This study's focus on multicultural classrooms brings out the need for AI literacy programs to be culturally inclusive and relevant. Such an approach guarantees that AI education is accessible and meaningful to learners from different backgrounds, respecting and combining their cultural contexts into the learning process.

Pragmatism
Besides constructivism, the study was underpinned by pragmatism, a philosophical tradition that looks at the practical consequences of ideas and concepts as the critical factors of their meaning and truth. Pragmatism stresses the importance of action, experience, and the constant modification of strategies based on outcomes (Neubert, and Reich, 2009).

Practical Application of AI Literacy:
Pragmatism gives attention to the practical application of knowledge and to its effectiveness in solving real-world problems. The study aimed at determining practical models and activities for deepening AI literacy, reflecting the pragmatic interest with what works in real-world educational settings. By examining eminent practices and distinguishing challenges, the study sought actionable modalities that could be applied to meliorate AI education.

Continuous Improvement and Adaptation:
Pragmatism supports and promotes the continuous improvement of ideas and practices founded on experiential feedback and outcomes. By investigating the successes and challenges encountered by parents and schools, the study stands for the pragmatic approach of learning from experience to adapt and fine-tune AI literacy initiatives. This repetitive process guarantees that educational strategies are continuously improved to meet the developing or changing needs of learners and the technological landscape.

The study's philosophical basis in constructivism and pragmatism renders a strong structure for understanding and improving AI literacy among children. Constructivism stresses the active, social, and culturally relevant quality of learning. On the other hand, pragmatism concentrates on the practical application and constant improvement of educational practices. Together, these philosophical perspectives led the study's investigation of effective strategies for fostering parental involvement and supporting children's engagement with AI in multicultural classrooms.

3. LITERATURE REVIEW

The literature reviewed existing research on AI literacy, multicultural education, and parental involvement in technology education (Berson et al., 2012). Parenting is a tough job, and it can be overwhelming at times. However, with the rise of technology, parenting has become easier. Artificial Intelligence is changing the way parents raise their kids. AI is not just about robots taking over the world; it is also about empowering parents to be better caregivers. In today's digital world, Artificial Intelligence presents new ways of raising kids. With AI-powered devices and apps, parents can keep track of their children's behaviour on the internet or while handling iPads. Additionally, using deep learning algorithms in educational toys like ChatGPT or Google Galaxy Kids can develop vocabulary and navigation skills in children. Bedtime routines have also seen an upgrade with Bard, an AI program that uses natural language processing to answer complex questions from kids. While techs like Alexa email or chatbot Moxie provide emotional support and emotional intelligence to kids through illustrations or language

learning, as seen in Luca or MikoAI, respectively (AI and Parenting: The Ultimate Guide for raising kids, 2022; Tlili, et al., 2023; Aljanabi, Ghazi, Ali, Abed & ChatGPT 2023; Sain, Vasudevan, Thelma & Asfahani, 2024).

Globally, there is growing recognition of the importance of parental involvement in children's education, including in the realm of technological literacy. Research suggests that parental involvement positively impacts children's academic achievement and socio-emotional development (Ezema, Eze & Onuoha (2020). In the context of AI literacy, parental involvement can play a crucial role in complementing classroom learning, fostering positive attitudes towards technology, and ensuring equitable access to AI-related resources.

The use of digital technology (like desktop computers) has provided the most needed resource and acquisition of technological skills by learners. Similarly, Aksal (2011) and Mpolomoka and Sakai (2021) confirm that using the tools for technology in one environment activates and enables individualization of education for students. Students are able to work individually and consult where they are stuck.

Studies such as those by Jang and Kim (2018) emphasize the significance of parental support in enhancing children's computational thinking skills, which are foundational to AI literacy. Furthermore, research underscores the need for parents to actively engage with AI technologies themselves to effectively support their children's learning (Barr & Selinger, 2020). Initiatives promoting family-based AI learning, such as coding clubs and maker spaces, have shown promise in promoting parental involvement and fostering AI literacy Guzdial, Lee & Lane, 2020).

Furthermore, the use of emerging information technology brought the change of printing technology from hand written and it lasted for a long period of time and enhanced academic productivity (Ajala et al., 2021). Desktop computers in the computer lab were used for teaching and learning ICT subjects. Teachers taught practical use of computers to students with disabilities. In addition, lecturers used computers to send assignments to students through emails. A study by Sikanyika, Muvombo, Matimba, Chikopela, Mpolomoka & Banda, 2022) explain that teachers said that use of computers when teaching was very effective in visual-spatial learning of students with hearing impairment. On the other hand, students with visual impairment benefited from using computers to write assignments, tests, and examinations. This finding corroborates with what Mpolomoka and Sakai (2021) established regarding benefits learners with diverse needs derive from technology.

In the African context, where disparities in access to technology and educational resources persist, nurturing parental involvement in AI literacy presents unique challenges and opportunities. Moreover, limited access to digital infrastructure and technological literacy among parents may hinder their ability to support children's AI learning. However, initiatives leveraging mobile technology, community partnerships, and culturally relevant pedagogies have demonstrated potential in bridging this gap (Kumah, 2016).

Pertaining to the Zambian scenario, studies by Chansa-Kabali and Sampa (2018) underscore the importance of community partnerships and culturally sensitive approaches in promoting parental engagement in Zambian schools (Banda and Mpolomoka, 2018). Engaging parents through culturally relevant workshops, community events, and interactive learning platforms can enhance their capacity to support children's AI literacy. Moreover, integrating AI education into existing curriculum frameworks and teacher training programs can facilitate sustainable efforts to nurture parental involvement and promote equitable access to AI learning opportunities.

According to Yang (2022) AI education has posed challenges and opportunities to early childhood education (or kindergarten education), including why young learners should learn AI in their early years, the subset of key AI concepts that can be understood by children, and how children were engaged in a meaningful experience for them to acquire these concepts. Yang pointed out several reasons why young children need to learn AI: (1) knowing and understanding the basic competencies of AI and using AI applications is important for all citizens to become AI literates in today's digital world (Ng et al., 2021a, b); (2) children need to be empowered to understand, use, and evaluate AI with purposeful guidance (Williams et al., 2019a); (3) children should have the capability to understand the basic functions of AI, especially when more well-designed AI toys appear in their everyday experience (Kewalramani et al., 2021). Su and Yang (2022) further identified AI in ECE studies that have introduced AI concepts to kindergarteners using AI learning tools such as PopBots and Zhorai.

Prior studies have described the benefits of families jointly learning about technology or engaging in technology co-design. Barron et al. (2009), investigated how families jointly learning about technology can gain children's educational outcomes. They established that when families work together in learning activities, children frequently show enhanced interest and competence in technology-related subjects. The cooperative learning environment

helps clarify technology for both children and adults, making it a shared family experience that s mutual boosts and encouragement. More recent literature emphasizes the importance of balanced partnerships in family technology co-design activities and shows that parents primarily act as spectators, scaffolds and teachers when supporting children's interactions with coding kits and use of other technological tools (Theofanopoulou, Antle & Slovak, 2024; Yu, Qi & Yang, 2024; Jabali & Ayyoub, 2024; Stefania Druga, Fee Lia Christoph & Amy Ko, 2022). Interestingly, Yu, et al (2020) contend that though these studies underline the importance of family engagement in children's technology learning, little remains known about best practices in nurturing parental involvement in AI literacy among children in multicultural classrooms. The study points to the benefits of collaborative learning, whereby parents and children learn together, share experiences, and solve problems collectively. This approach heightens the learning experience and nurtures a supportive environment. Furthermore, it is suggested that initiatives enhancing family-based learning in technology can be extremely effective. Ensuring resources and training for parents are available can help overcome barriers and heighten the overall impact of such programmes.

The two studies emphasise the important role of family engagement in children's technology learning. Yu et al.(2020) focus on the gain of parents as co-learners in informal coding activities, while Michelson et al.(2020) stress on how important it is to balance the partnerships in the co-design of educational technologies. Together, these studies bring out the possibility for family involvement to increase children's technological literacy and promote increased effective and inclusive educational practices.

3.1 School and Parental Involvement in Nurturing Artificial Intelligence (AI) Literacy among Children in Multicultural Classrooms

Recent initiatives such as the AI4K12 project in the United States aim to develop AI literacy standards and resources for K-12 education, emphasizing the collaborative role of schools, parents, and communities in promoting AI literacy (Guzdial et al., 2020). Furthermore, research highlights the potential of AI-based educational technologies, such as intelligent tutoring systems and educational chatbots, in enhancing AI literacy among students from diverse cultural backgrounds (Wang et al., 2021).

In Africa, where access to technology and educational resources may be limited, nurturing AI literacy presents unique challenges and opportunities. Additionally, recent studies underscore the importance of integrating AI education into the curriculum to prepare African students for the digital economy (Ajala et al., 2021; Bin & Mpolomoka, 2023). However, research also highlights disparities in access to AI education, particularly in rural and underserved communities (Ezema et al., 2020).

Locally, the community-based organizations and NGOs in Zambia are collaborating with schools and parents to promote AI literacy through initiatives such as coding clubs and digital skills training workshops (Chipungu et al., 2021). Moreover, recent research highlights the potential of mobile learning platforms and educational apps in expanding access to AI education in Zambia (Chibwe et al., 2021).

3.2 Models and Activities Undertaken by Parents and Schools to Enhance Children's Understanding and Engagement with Artificial Intelligence

At the global perspective, numerous models and activities have been developed to promote children's understanding and engagement with AI. Research by Ponte and Strobel (2018) highlights the importance of project-based learning and hands-on activities in AI education, enabling students to develop critical thinking and problem-solving skills. Initiatives such as AI literacy workshops, coding competitions, and maker spaces provide opportunities for children to explore AI concepts in engaging and interactive ways (Barr & Selinger, 2020).

Moreover, parents in African communities often play integral roles in children's education, leveraging informal learning opportunities to enhance AI literacy. Research suggests that storytelling, role-playing, and experiential learning activities can effectively convey AI concepts to children within African cultural contexts (Ngalim et al., 2019). Moreover, partnerships between schools, parents, and local organizations are essential for expanding access to AI education in underserved communities (Fossi et al., 2020).

In context of Zambia, recent initiatives have been launched to enhance children's understanding and engagement with AI through collaborative efforts between schools, parents, and stakeholders. For example, the Zambian government's National Policy on Science, Technology, and Innovation emphasizes the integration of AI education into the curriculum (Republic of Zambia, 2019). The schools are implementing innovative pedagogies, such as project-based learning and inquiry-based approaches, to foster children's curiosity and exploration of AI concepts (Mulenga et al., 2021).

3.3 Challenges and Successes Parents and Schools Face in Nurturing Children's Understanding and Engagement with Artificial Intelligence

According to Whittlestone et al., (2019), the concerns about privacy, ethics, and bias in AI systems pose challenges for educators and parents in navigating discussions about AI with children. However, successes in fostering AI literacy include the development of innovative pedagogical approaches, such as project-based learning and hands-on activities, which engage children in exploring AI concepts (Yu, Qi & Yang, 2024; Jabali & Ayyoub, 2024). In all that, some collaborative efforts between schools, parents, and communities can lead to the successful implementation of AI education initiatives (Kafai et al., 2019).

However, the study conducted by (Ngalim et al., 2019), they postulates that successes in fostering AI literacy in Africa include community-based initiatives that leverage indigenous knowledge systems and local resources to engage children in AI learning. Similarly, partnerships between schools, parents, and local organizations can also contribute to the successful implementation of AI education programs (Fossi et al., 2020). The enthusiasm and curiosity of African children towards technology present opportunities for nurturing their understanding and engagement with AI (Adams et al., 2020).

In Zambia, challenges and successes in nurturing children's understanding and engagement with AI reflect broader African contexts. Challenges include limited access to technology and digital literacy among both educators and parents (Mulenga & Zulu, 2021; Chanda & Zohaib, 2024). Moreover, there may be a lack of awareness and understanding of AI concepts among stakeholders, hindering efforts to integrate AI education into the curriculum (Chipungu et al., 2021).

The literature from various scholars has given a comparative aspect on the current study as well as children's understanding and engagement with AI. Addressing the rapid pace of technological advancement and ethical concerns surrounding AI were key challenges. Moreover, stakeholders can effectively nurture children's understanding and engagement with AI, preparing them for the opportunities and challenges of the digital age of today.

4. METHODOLOGY

A case study design was used for the study. A case study was used to gather information on nurturing parental involvement in AI literacy among children in multicultural classrooms. The case study method seeks to describe a unit in detail, in context and holistically (Holstein & Gubrium, 2011; Creswell, & Plano Clark, 2011; Banda, et al., 2017).

The population of this study comprised parents, teachers and pupils in the selected schools under study. According to Kasonde-Ng'andu (2013), a population is a group of individuals, objects or items from which samples are taken for measurement. A total sample of 30 participants was used (15 parents, 5 teachers and 15 pupils).

Purposive sampling technique was used in the study. Parents, teachers and pupils were selected with a purpose in mind based on the skill and judgement on their experience in digital technology.

The interview guide and Focus Group Discussion guide were mainly used to collect data. The main task in interviewing the respondents was to understand the meanings of the interviewees or participants say about the topic under study and sought to cover both factual and meaningful levels of the themes under the study nurturing parental involvement in AI literacy among children in multicultural classrooms. The interview guide was used because it was particularly useful for getting the story behind a participant's experiences.

5. RESULTS AND DISCUSSION

The study's findings in AI in literacy in primary schools among children in multicultural classrooms are presented here by means of the three objectives forming themes hence the thematic approach to the presentation of research findings as:

(1) to describe school and parental involvement in nurturing Artificial Intelligence (AI) literacy among children in multicultural classrooms;
(2) to determine models and activities undertaken by parents and schools to enhance children's understanding and engagement with artificial intelligence and
(3) to establish challenges and successes parents and schools face in nurturing children's understanding and engagement with artificial intelligence.

Teachers (of grades 1-4 learners) and parents (parents with children) in the selected primary schools in Kabwe

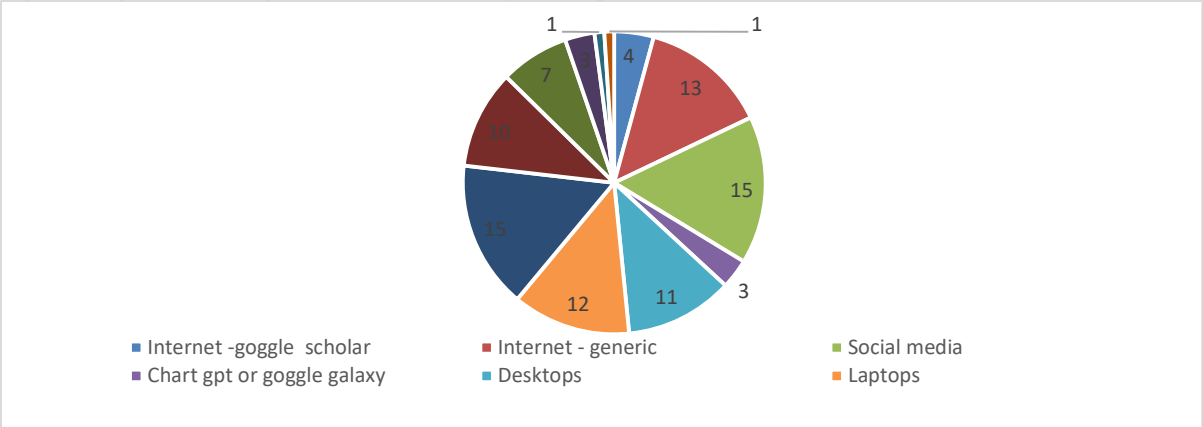
were asked to state the forms of technologies they access and use. The responses were as follows: out of fifteen (15) parents, four (4) representing 27% used internet - goggle scholar, thirteen (13) representing 87% used the internet in its generic way, all fifteen (15) representing 100% used various forms of social media, eleven (11) representing 73% used desktop computers, only three (3) representing 20% used ChartGPT or goggle galaxy, twelve (12) representing 80% had laptops, all fifteen (15) parents representing 100% used phones for texting and making calls, Video calling ten (10) parents representing 67% used phones for video calling and You tube seven (7) at 47%, only three (3) representing 20% had tablets and only one (1) parent representing 6%, in each case, had experienced the use of Egra and Egma (the parent was found to be a primary school teacher) (Egra used technology to analyse early graders in reading and writing skills while Egma used technology to analyse the early graders' mathematical or numeracy skills . Table 1 and figure 1 illustrate the findings.

Table 1: Digital Technologies accessed and used by the 15 parents

Digital technology	Score	%
Internet -goggle scholar	4	27
Internet – generic	13	87
Social media	15	100
Chart GPT or goggle galaxy	3	20
Desktops	11	73
Laptops	12	80
Texting and calls	15	100
Video calling	10	67
You tube	7	47
Tablets	3	20
Egra	1	6
Egma	1	6

Source: Field data, 2024

Figure 1 Digital Technologies accessed and used by the 15 parents



Source: Field data, 2024

The findings in Table 1 and Figure 1 above, revealed several interesting insights into the forms of technologies accessed and used by parents of children in multicultural classrooms, as well as the level of AI literacy among them. Discussing each aspect in detail makes this component a fully organised scholarly study. On the issue of internet usage, 87% of parents used the internet in its generic way, while only 27% specifically use Google Scholar. This indicates a high level of general internet usage among parents, but a relatively lower utilization of scholarly resources like Google Scholar. This also suggests that parents are generally comfortable with using digital platforms for communication and information retrieval. Research by Salehi et al. (2021) emphasizes the increasing reliance on the internet for accessing information. However, the lower usage of scholarly resources like Google Scholar might suggest a potential area for improvement in terms of accessing reliable and academic information by way of targeted training and resources. The usage of advanced AI technologies like Chart GPT or Google Galaxy is relatively low at 20%, indicating that parents may not be familiar with or do not have access to these tools. This illustrates a possible area for improving AI literacy among parents.

For social media usage, all parents (100%) reported using various forms of social media as shown above. For

instance, this high level of usage indicates the widespread adoption and influence of social media platforms. In comparison, studies have highlighted the pervasive influence of social media on individuals' daily lives (Kwon et al., 2013). The findings align with the global trend of increased social media usage (Chanda, Mubemba & Chitondo, 2023).

The research by Pew Research Center (2021) indicates a global trend towards increased smartphone usage for various purposes, including communication and accessing online content. In the current study, parents predominantly use desktop computers (73%) and laptops (80%), while only 20% use tablets. Additionally, smartphones are extensively used for texting, calling, video calling, and accessing YouTube. As a result, the higher usage of desktops and laptops among parents might suggest a preference for these devices for certain tasks, while smartphones are preferred for communication and media consumption.

Continuing with the discussions, only a minority of parents (20%) reported using Chart GPT or Google Galaxy, indicating limited exposure to advanced AI technologies. In giving an emphasis, even the studies such as those by Guzdial et al. (2020) emphasize the importance of AI literacy and the integration of AI technologies into education. The low usage of advanced AI technologies among parents suggests a potential gap in AI literacy that could be addressed through education and awareness initiatives.

Moreover, the findings were that only one parent (6%) reported experiencing the use of Egra and Egma, which are likely AI-based tools. This suggests a limited familiarity with advanced AI applications among parents. While specific studies on Egra and Egma might not be available, the findings were similar with broader research highlighting the need for increased awareness and understanding of AI technologies among educators and parents (Barr & Selinger, 2020). Efforts to enhance awareness, provide training, and facilitate access to AI technologies in Kabwe district, can empower parents to support their children's AI education in an effective manner.

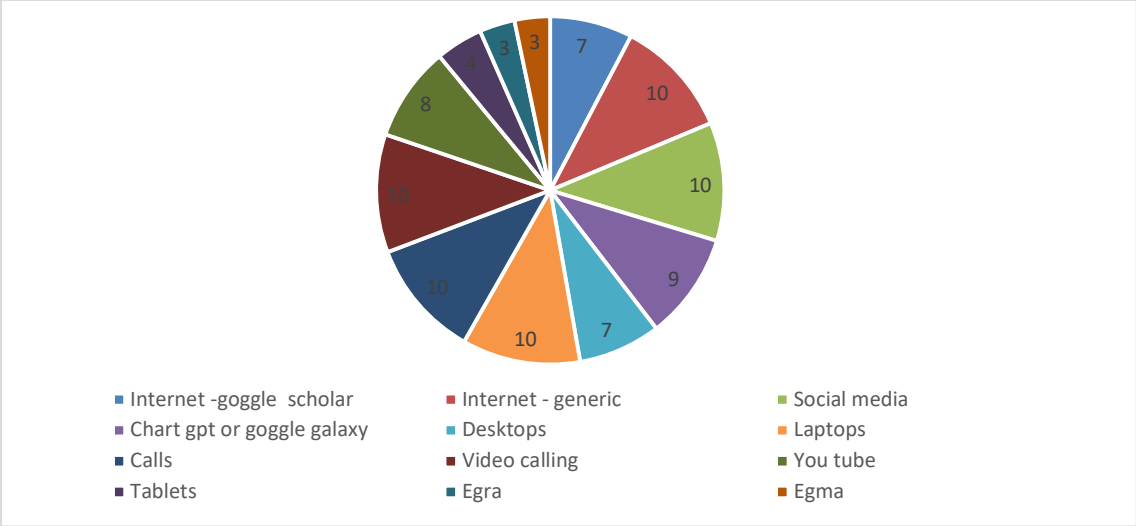
When it came to the teachers, table 2 and figure 2, provide a summary of their responses.

Table 2: Digital Technology accessed and used by 10 teachers

Digital technology	score	%
Internet -goggle scholar	7	70
Internet – generic	10	100
Social media	10	100
Chart GPT or goggle galaxy	9	90
Desktops	7	70
Laptops	10	100
Calls	10	100
Video calling	10	100
You tube	8	80
Tablets	4	40
Egra	3	30
Egma	3	30

Source: Field data, 2024

Figure 2: Digital Technology accessed and used by 10 teachers



Source: Field data, 2024

The findings presented in both Table 2 and Figure 2, provided insights into the digital technologies accessed and used by teachers in the selected primary schools. All teachers (100%) reported using the internet in its generic way, indicating universal access to online resources and dependency on these platforms for professional and personal use. Additionally, a high percentage (70%) specifically mentioned using Google Scholar, suggesting a strong emphasis on accessing scholarly materials and dedication to academic and AI literacy. Fortunately, the high usage of the internet among teachers aligns with global trends of increased reliance on online resources for teaching and professional development (Trust et al., 2020). The utilization of Google Scholar reflects a commitment to accessing academic literature, which is essential for evidence-based teaching practices.

All teachers (100%) reported using social media, highlighting its widespread adoption as a communication and networking tool among educators. The studies have shown that social media platforms play a significant role in professional development and collaboration among teachers (Hammond et al., 2020). In comparison, the findings align with broader research indicating the integration of social media into educators' professional lives.

Moreover, a high percentage of teachers reported using advanced AI technologies such as Chart GPT or Google Galaxy (90%), indicating a relatively high level of exposure to AI applications. While specific studies on AI usage among teachers might be limited, research by Guzdial et al. (2020) emphasizes the importance of promoting AI literacy among educators. The findings suggest that these teachers have embraced AI technologies, which could potentially enhance their teaching practices and students' learning experiences.

On the device usage, laptops were reported to be the most commonly used devices among teachers (100%), followed by desktops (70%). However, tablets are less commonly used (40%). The preference for laptops and desktops among teachers might be attributed to the need for larger screens and more processing power for tasks such as lesson planning and content creation (Johnson et al., 2017). Additionally, the lower usage of tablets could reflect their limited functionality compared to laptops and desktops. A notable majority of teachers indicated a liking for these devices for professional tasks. On the other hand, the lower use of tablets (40%) implies a prospective area for developing device usage.

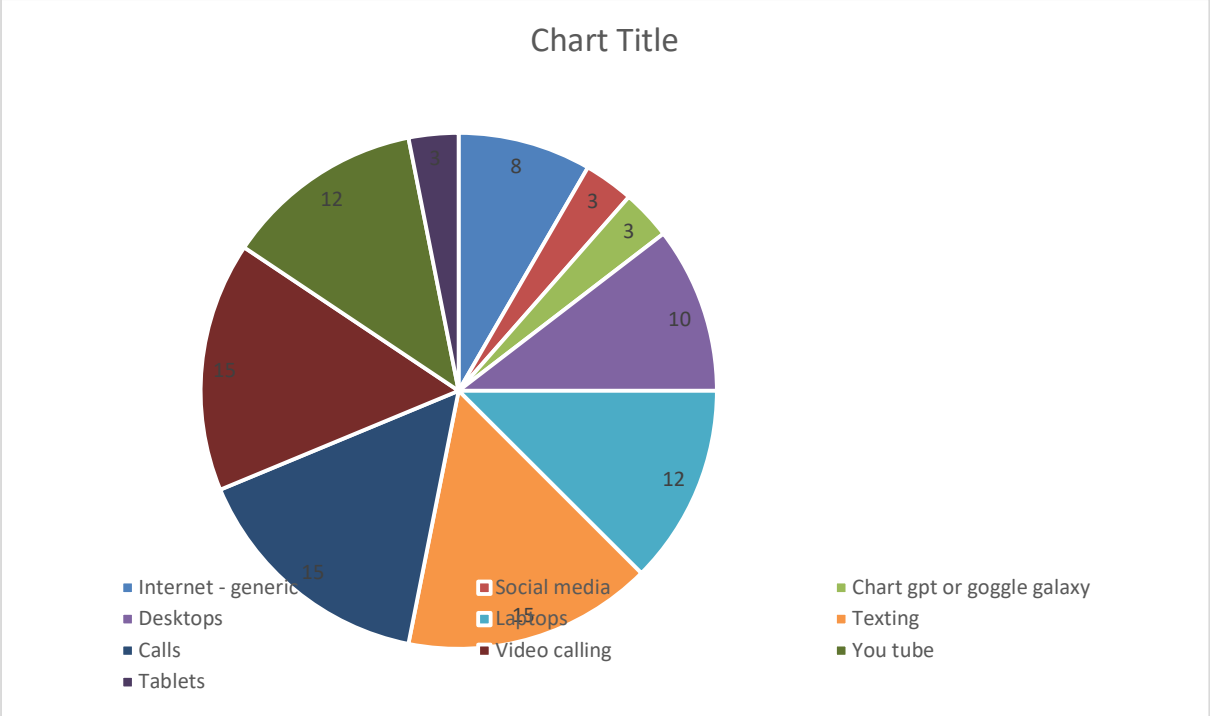
A minority of teachers reported experiencing the use of Egra and Egma and stood at (30%), indicating limited familiarity with these AI-based tools. While specific studies on Egra and Egma might not be available, the findings suggest that these AI applications are not widely used among teachers. This highlights a potential area for further research and professional development in AI literacy. In similar findings, Chikopela, Ndhlovu, Mandyata, Mpolomoka & Kasonde-Ng'andu (2022) carried out a study on enhancing teaching and learning of open and distance learning (ODL) students with disabilities using digital technologies at university in Zambia. They found that youtube was another technology that was used by students with disabilities to learn and participants confirmed of it being easy to follow instructions. Hence, this shows that AL devices do not segregate persons and it adds the potential of technologies in education. Pupils were also asked to mention the technologies they had access to and used, their responses were as tabulated in table 3.

Table 3: Digital Technology accessed and used by 15 pupils

Digital technology	score	%
Internet – generic	8	53
Social media	3	20
Chart GPT or goggle galaxy	3	20
Desktops	10	67
Laptops	12	80
Texting	15	100
Calls	15	100
Video calling	15	100
You tube	12	80
Tablets	3	20

Source: Field data, 2024

Figure 3: Digital Technology accessed and used by 15 pupils



Source: Field data, 2024

Both table 3 and Figure 3, presented and provide insights into the digital technologies accessed and used by pupils in the selected primary schools. Furthering the discussion of the presented findings gave a thorough interpretation. On internet and social media usage, about 53% of pupils reported using the internet in its generic way, while only 20% mentioned using social media. This indicates a moderate level of internet usage among pupils, with a lower emphasis on social media compared to other digital activities. Research on children's internet and social media usage varies widely, but studies generally suggest that children are increasingly accessing the internet for educational and recreational purposes (Livingstone et al., 2020). The lower usage of social media among pupils might reflect parental restrictions or school policies aimed at protecting children from online risks.

In other findings, a majority of pupils reported using laptops (80%) and desktops (67%), while tablets were less commonly used (20%). This indicates a preference for traditional computing devices over mobile devices among pupils. Studies on children's device usage patterns suggest that laptops and desktops are commonly used for educational activities, while tablets are often used for entertainment purposes (Ofcom, 2020). The findings align with broader trends in device preferences among children.

Concerning the AI technology usage, only 20% of pupils reported using advanced AI technologies such as Chart

GPT or Google Galaxy. This suggests limited exposure to AI applications among pupils. Studies on children's engagement with AI technologies are relatively limited, but research by Guzdial et al. (2020) emphasizes the importance of promoting AI literacy among students. The findings suggest a potential gap in AI education that could be addressed through curriculum integration and teacher training.

The communication tools as indicated in the presented information, all pupils reported using texting, calls, and video calling, indicating universal access to communication technologies. Research on children's communication habits highlights the widespread use of texting and video calling among young people (Ofcom, 2020). While internet and device usage are widespread, there may be opportunities to enhance AI literacy and promote safe and responsible online behaviour among students. Notably, the findings suggest that digital communication tools play a significant role in children's daily lives.

6. CONCLUSION

The study established that generally, the internet has revolutionised education and specifically the teaching and learning of any form of literacy. This can be seen in the government's commitment to ensuring country-wide increase to the national power grid connectedness, connectedness to various communication and internet providers. These aspects have supported the teaching of ICT from ECE to tertiary levels of education. A lot of successes have been scored but challenges still exist among them others schools not connected to the national grid of power, shortage of teaching and learning resources including computers, smart phones, laptops and their accessories, shortage of relevant and quality training of teachers to teach and assess learners using new forms of technologies. The critical role of AI literacy in critical thinking, problem-solving, digital literacy skills in preparing learners to lived experiences with technology early and in preparing them for future real life in the 1st Century.

In today's education, most learners learn well with exposure to and use of technology. Recently, technology has evolved to what is popularly referred to Artificial Intelligence (AI). This technology and its application have come to be used daily in families from conversations with a voice assistant to mobile navigation searches. There is an escalation of the application AI in school and home environments.

7. RECOMMENDATION

Schools, families and communities should make AI literacy a journey and not a destiny through creating a culture of educators and leaners continuous learning and interacting with AI literacy in classroom practices. This will make the teaching of literacy evolve and permeate all aspects of lives, equipping all in AI early in life.

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