



## Integrating Technology for Multimodal Literacy in English Studies

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**Abstract.** Multimodal literacy is being literate in all forms of literacy surrounding learning and representing meaning, including multimedia and digital interactions. It involves the use of diverse communication modes - visual, audio, and spatial, alongside traditional reading and writing in education. The aim of this paper is to investigate how technology aids the development of multimodal literacy in English studies students. Three universities in south-south Nigeria, Edo state, were used as case studies. Qualitative research methods were employed, including semi structured interview, student focus group and classroom observations. The theoretical frameworks of the New London Group, Technological Pedagogical Content Knowledge (TPACK), and Constructivist Learning Theory were applied in this paper. Findings reveal that being technologically literate facilitates multimodal literacy as it enhances knowledge sharing, caters for different learning styles and helps students synthesise information across multiple modes of representation. However, challenges such as digital literacy gaps, financial constraints, resistance to change on the part of instructors, and concerns about curriculum modification, assessment, and academic integrity hinder effective implementation. The paper concludes that integrating technology for multimodal literacy offers significant opportunities for a more dynamic, inclusive, and flexible learning and recommends continuous training for instructors, continued investment in infrastructure, multimodal literacy training, and collaborative curriculum development to fully realise the potential of multimodal literacy. The findings contribute to the growing body of research on the integration of technology for multimodal literacy development.

**Keywords:** Multimodal Literacy, Technology Integration, Higher Education, English Studies

### 1. Introduction

The concept of literacy is multidimensional because it entails literacy in its diverse form. To begin with,

there is traditional literacy which involves the conventional knowledge and skills needed to navigate printed or written language. This is the literacy that dates to the ancient civilization of Egypt, Rome and Greece era where the ability to read and write was a sign of intellectual distinction and was essential for intellectual advancement, administrative functions and religious activities. Humanist ideals that were associated with traditional literacy include the study of classical texts, the development of critical thinking, and the use of rhetoric which are the same ideals that stood out in the education system of the time.

English studies courses reflect these humanist ideals because they centre on understanding human experiences, values, and societies. The course prioritises articulateness whether in the writing of essays or in oral presentations, which resonate with traditional literacy and its key elements of reading, writing, and textual analysis as well as in-depth knowledge of language and its contextual applications. Today's world is technologically advanced, brimming with interactive digital experiences.

Technology has transformed the way we communicate and learn, reshaping traditional literacy into digital literacy; the ability to read and interpret online texts, websites, blogs, and social media. Critical reading and speaking skills traditionally used for analysing written and spoken texts are now being employed to evaluate digital content. Multimodal communication, which integrates images, videos, text, graphics, charts in one communicative event has become a dominant form of expressing ideas in online platforms like WhatsApp, Instagram, TikTok, YouTube among others. These platforms require a new understanding and skills on how to convey meaning effectively and to navigate a media-saturated environment.

With the access to limitless information granted by search engines, databases, and online repositories,

the skill has shifted from simply locating data to curating and filtering the overwhelming content available. The paper argues that although traditional literacy skills are as invaluable today, they should be adapted and expanded to meet the demands of a digital, information-driven world. It is for this reason this paper advocates for the integration of technology into English studies than what presently obtains in order to develop multimodal literacy skills in the students. In response to the growing demands for multimodal engagement in the digital age and its dynamic integration of visual, auditory, and textual elements, the shift toward more dynamic, technology-driven pedagogies becomes even more desirable. The concept of multimodal literacy, which involves the ability to decode and produce meaning across different media formats, is integral to developing proficiency in English in the 21st century (Cope & Kalantzis, 2009). English studies students must acquire skills that encompass both traditional literacy and digital fluency because of the nature of the course (Kress, 2003).

The integration of technology into ESL teaching has been a growing concern especially in multilingual and multicultural societies like Nigeria. In many developing countries, including those in sub-Saharan Africa and Southeast Asia, ESL instruction faces significant challenges due to limited resources and technological access (Zhao & Lai, 2020). However, studies in these regions, including the work by Okeke & Akinmoladun (2019) in Nigerian higher education institutions, show that the integration of mobile technologies and online platforms into ESL teaching has proven effective in promoting language learning. This corroborated by Akinmoladun, 2018 who asserts that there are opportunities to enhance language learning experiences using technology, particularly through mobile-assisted language learning (MALL) and online collaborative platforms despite the challenges some institutions face, such as unreliable internet access and infrastructural limitations.

Despite these promising developments, the full potential of technology in fostering multimodal literacy remains underexplored. According to Olaniran & Oloyede (2020), while ESL teaching has incorporated digital texts and videos, there is still insufficient attention given to how these tools can be strategically used to develop students' multimodal literacy, particularly in writing and speaking tasks. This paper seeks to bridge the gap between theoretical frameworks on multimodal literacy and practical implementations examining the challenges, successes, and future possibilities of integrating technology to enhance English Studies instruction in Nigerian universities. The literature review which comes next, offers further understanding of these

concepts, the research problem, and the impact of the paper.

## 2. Literature Review

The New London Group (1996) foundational paper introduces the concept of multimodal literacy, emphasising the need for an expanded definition of literacy that includes various modes of communication such as visual, audio, and spatial modes in addition to traditional reading and writing. Extending this view, Cope and Kalantzis (2000) in explaining a range of modes, from spoken and written language to visual and digital media, argue that education must reflect the changing nature of communication in the 21st century. Kress and van Leeuwen (2001) expanded the conversation by exploring how meaning is created through the interaction of these different modes described by the New London Group (visual, verbal, gestural). They provide a theoretical framework for understanding multimodal communication in both print and digital media. In the same light, Jewitt (2008), Bezemer and Kress (2008) highlight the importance of multimodal literacy in education offering insights into how different modes of communication (visual, aural, written) contribute to learning and meaning-making in classrooms.

Broadening the conversation into the role of technology in supporting pedagogical practices, Laurillard (2012) examines how technology can be effectively integrated into education to enhance student learning. Similarly, Means, Bakia, and Murphy (2014) review the impact of digital learning tools and technologies in education, stating that technology integration can improve educational outcomes. Bates (2015) presented a comprehensive guide on integrating technology into higher education by revealing the various digital tools and strategies that enhance teaching and learning, with a focus on online and blended learning environments. The literature review thus far has shown that multimodal literacy can be achieved through the integration of technology into educational practices. The essence of the second half is to give a review of the relationship between digital literacy and multimodal literacy.

Hague and Payton (2010), Selber (2004) provide insights into how technology integration in the classroom can foster students' multimodal literacy skills, shedding light on the evolving nature of literacy in the educational landscape. In the same vein, Leu, Kinzer, Coiro, and Henry (2013) explore the changing nature of literacy in the digital age and how both technology integration and multimodal literacy shape students' ability to create and understand meaning in multiple forms while Littlejohn and Margaryan (2014), emphasise the

need for teachers to develop digital competencies to effectively integrate technology into their teaching practices. Their work highlights the gap between teachers' current skills and the skills needed to fully utilise digital tools in the classroom.

Along the same lines, Pegrum (2011) reiterated the role of digital technologies in transforming literacy practices, suggesting that educators must be adaptable and continuously update their skills to keep pace with technological advancements. This aligns with Merchant (2007), who examines how digital tools and multimodal texts can be used to support literacy development in ESL learners, providing practical insights and strategies for educators. All these scholars provide a necessary foundation for understanding the intersection between technology integration in education and multimodal literacy on the one hand and the involvement of instructors and students in acquiring the needed skills to be multimodally literate.

In the context of English studies, the crucial role of multimodal approaches in Nigerian literature has been addressed by Nwoko (2018). He emphasised the necessity to integrate audio, visual, and digital media into literature in order to enhance literary creativity and communication. He posits that this integration is essential for reflecting the diverse and evolving modes of communication prevalent in contemporary Nigerian society. Similarly, Tsaai (2013) explores the transformative potential of digital technologies on Nigerian oral poetry calling attention to how the traditional oral forms can be preserved and innovated through multimodal texts. This offers a bridge between the past and the present. His insights underscore the importance of digitising literary traditions to ensure their survival and relevance in the modern age.

In a related note, Ajayi (2015) investigates how Nigerian female students use multimodal literacy to critique texts and challenge social structures. Ajayi's research highlights the empowering potential of multimodal literacy in giving voice to marginalised groups and fostering critical thinking skills. His study underscores the need for incorporating multimodal literacy practices into the Nigerian educational curriculum to promote equity and social justice. Emakpe, & Adegoke (2024) paper demonstrate the richness and diversity of the Nigerian literary tradition through their paper that examines how Nigerian writers utilise English in various forms to narrate personal and communal experiences. Their paper emphasises the role of multimodal literacy in capturing and conveying the multifaceted nature of Nigerian society thus contributing to the understanding of English language usage in Nigerian literature.

Although the use of technology in Nigerian universities is on the rise, there remains a gap in how these technologies support the development of multimodal literacy in the classroom, with particular attention to English studies. While existing studies provide valuable insights into the integration of multimodal literacy in broader educational and societal contexts, there are insufficient empirical research focused on ESL learners in Africa and Nigeria in particular, highlighting a need for studies that address the unique challenges and opportunities faced by Nigerian ESL students. Conducting empirical research in this area can offer tailored strategies to enhance the learning experiences and outcomes of Nigerian ESL learners, ensuring that educational practices are environmentally relevant and effective. The next section gives an overview of the theoretical frameworks adopted in this paper.

### 3. Theoretical Framework

For this paper, a combination of the following theoretical perspectives was adopted. First is the multiliteracies theory (New London Group) which emphasises that literacy is not just about reading and writing in traditional ways but also includes new modes of communication (visual, digital). The concept of multimodality is central here because of its focus on how students engage with various modes of communication (text, image, video, and interactive media) facilitated by technology, in the classroom. The second is the Technological Pedagogical Content Knowledge (TPACK) (Mishra & Koehler, 2006), which focuses on the intersection of technology, pedagogy, and content knowledge. This theory is particularly useful for understanding how teachers, in this case English studies teachers in Nigerian higher institutions blend technology with language teaching to foster multimodal literacy while balancing content knowledge and pedagogical approaches. TPACK allows for an exploration of the types of technology being used, how teachers adapt their pedagogy to incorporate these tools, and how the content of English studies teaching is transformed through digital means.

The third is the Constructivist Learning Theory by Bruner (1991). This theory suggests that learners actively construct knowledge through experiences, problem-solving, and critical thinking. In the context of multimodal literacy, learners use various resources (digital tools, multimedia) to construct and interpret meaning. This theory, therefore, guides the analysis of how technology enables active learning while enhancing multimodal literacy. In the exploration of how multimodal resources (texts, images, videos, aural, sounds, kinetics, interactive digital media) are used to facilitate learning in the English language classroom, these theories are relevant as they help explain how students construct

meaning and develop literacy skills through interactions in technologically enhanced classrooms.

#### 4. Research Methodology

This paper adopted qualitative methodology involving the use of semi structured interview, classroom observation and focus group to get deeper insights from both instructors and students in three universities (one private, one federal and the other state) used as population for this paper. For data collection, the researcher personally visited the selected institutions to interview both instructors and students to ensure a 100% response rate allowing for clarifications where necessary.

The essence was to capture their perspectives and experiences with integrating technology in the teaching of English studies courses. The interview questions examined the current state of the use of technological tools for teaching and learning in English and how the tools enhance multimodal literacy. Observational notes were taken on the use and the extent to which instructors integrate technology in their teaching and how they enhance multimodal literacy in terms of the integration of text, audio, video, interactive elements. Student engagement and reactions as well as challenges faced were also part of the things observed. For the focus group, the discussion with students was based on topics such as, the impact of technology on their learning of language skills (speaking, listening, reading, writing), their preferences for specific types of technology, tools and how they help their learning practices.

A total of nine lecturers, three from each university (Two language option and one literature option from each university) engaged with the researcher through a semi structured interview. The students were four each purposively selected across levels. The interview was in two parts. The first part captured respondents' demographics while the second part had ten semi structured questions. Some questions were structured on a four-point Likert scale, and responses were rated as – Strongly Agree (4 points), Agree (3 points), Disagree (2 points), and Strongly Disagree (1 point) and some others as (Always, Often, Occasionally, Rarely). There were also questions with provided options and respondents had to make selections out of the choices made available. The responses were thematically analysed. The Focus Group responses were categorised under preferences, benefits and challenges. The results were analysed and discussed.

#### 5. Result of Findings

The first interview question was on the types of technology used in the teaching of language or literature courses. The options were given as: Interactive whiteboards, Learning management systems (LMS) (Canva, Moodle, Blackboard), Educational apps (Duolingo, Kahoot), Video-based learning (YouTube, WhatsApp, Capcut), Online collaboration tools (Google Docs, Zoom), Podcasts and audio tools (WhatsApp), digital storytelling, and Others, which respondents were to specify). Results showed that all three universities use WhatsApp as first choice followed by LMS, Online collaboration tools such as Zoom and Canva. In terms of other types of technology or tools used, the private university instructors answered that they use language software for the teaching of phonetics and phonology in the digital laboratory. Although, other language courses such as Grammar courses and even literature courses could be taught in a digital laboratory, this was usually not the case. The digital laboratories are only available in the private university while there are language laboratories in the public universities used only for the teaching of Phonetics and phonology. This shows the difference between a language laboratory and a digital laboratory.

The instructors also specified other tools or types of technology used, such as YouTube videos. Cambridge English Pronunciation App is part of the technological tool used also in the private University. It is a mobile application that helps students with English pronunciation using phonetic transcription and voice recognition. The second interview question analysis examined the frequency of the use of technological tools in the teaching of English studies courses. The instructors were to answer by choosing the appropriate response from options ranging from: (Always, Often, Occasionally, Rarely). Those in the Private university responded that they do so often while those in the public university answered that it was occasionally.

The third interview question bordered on the effectiveness of the technological tools for the achievement of multimodal literacy. The instructors were asked to rate the effectiveness on options of (very effective, somewhat effective, neutral, ineffective) the response was unanimous as they all said, “very effective” but some reservations were expressed which are highlighted in the discussion section. The fourth question bordered on their primary motivation for using technological tools in teaching and they were to respond by rating their responses from the main motivation to the least. The options given were: 1) to enhance knowledge sharing and student engagement, 2) to promote multimodal literacy, 3) to provide access to

resources outside of the classroom, 4) to cater for different learning styles, and then 5) to specify any other motivation. The instructors rated the options in the order in which they appeared which were to enhance student engagement as number one, to promote multimodal literacy as number two, till the fifth. Under any other motivation, those in the private university pointed out that it was part of the course requirement.

The fifth interview question interrogated the technological tool the instructors felt were most effective in helping students develop multimodal literacy skills? The instructors were to select all that applied out of the list read out to them which consisted of – interactive whiteboards, video tools (e.g., YouTube, WhatsApp), podcasts and audio resources, LMS (Moodle, Blackboard), Collaborative platforms Canvas, Google Docs, Zoom, Padlet). Any other was to be specified by the instructors. Their responses had video tools (YouTube, WhatsApp) as number one followed by Podcasts and audio resources, and the third was (LMS).

In the area of challenges, the instructors were asked to identify challenges they have faced while integrating technology into their teaching. They were to select all that applied, ranging from: lack of resources or equipment, limited digital literacy among students, technical issues (e.g., internet connection, software malfunctions, lack of operational knowledge of some gadgets and facilities, lack of training or professional development in using technology and resistance to using technology from teacher/students. Their responses bordered on firstly, the need for periodic training or professional development in using technology and secondly on technical issues such as internet connection and software malfunctions. However, under any other challenge, the responses especially for those in the public institutions were the need for prompt repairs of dysfunctional laboratory facilities, accessibility of technological devices for all students, limited financial support and institutional indifference.

Under student section, the students were interrogated in the area of learning preferences. They were asked to identify which technological tool they preferred for the learning of English. They were given the following options (videos, podcasts, interactive games, online quizzes, discussion forums) and the unanimous response was videos, followed by interactive games and podcasts. 30% chose online quizzes as a third choice while 29% chose discussion forums as a third choice. 12% chose podcasts while 29% had no other choice outside videos and interactive games. According to the students, their biggest challenge is lack of

equipment followed by interrupted internet access and power outages especially for those in the state university whose institution was not in the capital city. In terms of benefits, the students were also asked if using technology promoted knowledge-sharing and made for a more engaged class? They were to respond on a Likert scale of strongly agree, agree, disagree, strongly disagree. Their response was unanimous in agreeing strongly that technology made more engaged with what was taught.

## 6. Discussion of findings

The findings align with previous studies emphasising the role of technology in promoting multimodal literacy in higher level education and the results suggest that technology tools positively influence knowledge-sharing among students. When the instructors were asked what their primary motivation was in teaching technology, their number one response was to enhance knowledge sharing and student engagement, and to promote multimodal literacy, respectively. Multimodal learning, which incorporates videos, podcasts, animations, and interactive media that aid assignments, has been shown to captivate students' attention more effectively than traditional text-based materials. In English Studies classrooms, where topics can sometimes be abstract or distant, incorporating visual and auditory elements help make the material more relatable and interesting. Many students have reported feeling more motivated to participate in lessons that involve technology, as these tools allow them to express themselves in new and creative ways.

The integration of technology fosters collaborative learning, allowing students to engage in discussions, share resources, and work on group projects. Technology tools enhance knowledge-sharing by reducing barriers such as geographical limitations and time constraints. This peer learning is particularly important in English Studies, where discussions and debates are essential for understanding diverse interpretations of texts and literary theories. This finding aligns with the assertion of Trust et al., 2021, who emphasises that the use of technological tools facilitates asynchronous and real-time communication among learners, allowing them to exchange ideas beyond traditional school settings. Secondly, technology enables better collaboration on multimodal projects among students. Such as when creating short films on literary works or producing a podcast series on language usage and trends. This can lead to a deeper understanding of literature, language, and writing, as students become more adept at navigating the complexities of multimodal communication. Such collaborations promote teamwork, encourage critical thinking and help students synthesise

information across multiple modes of representation, thereby enhancing their communication skills.

Still on the same question of providing access to resources outside of the classroom and to cater for different learning styles were rated as the third and fourth options respectively as their primary motivation for using technological tools in teaching. Technology allows students and educators access to a wide range of resources beyond the traditional classroom. E-books, online journals, multimedia lectures, and global discussions on platforms like YouTube and academic blogs give students more opportunities to engage with resources outside of the classroom. This expanded access to resources enriches the English Studies curriculum by allowing students to explore topics in more depth from diverse perspectives. For example, students can watch videos on the production of speech sounds, morphology and syntax or simply explore online literary archives, they could also listen to interviews with renowned authors or watch a documentary on language development, all of which contribute to a richer learning experience outside the traditional classroom. Additionally, the multimedia nature of the content allows students to engage with the material in ways that suit their individual learning styles.

However, the results from the interview reveal that there are challenges. The problem is not just that there are no adequate technological tools for the development of multimodal literacy skills, the problem is also effective utilization of these tools to bring about the needed skills. It is true that students and educators have access to mobile phones and basic computer skills for personalised training but there still exist functional skill gaps, inadequate training, and resistance to technological change as significant barriers (Mishra & Koehler, 2020). Challenges such as the lack of comprehensive digital literacy remain a significant barrier.

Under learning preferences, the students unanimously indicated videos followed by interactive games and podcasts as their preferred technological learning tools out of the five options they were given. The challenge which persists is that many students are not familiar with the advanced functionalities of multimodal tools such as video editing software, podcasting platforms, and interactive presentation tools for charts and infographics. Similarly, some lecturers have not been adequately trained in the use of these technologies, which creates a divide between their teaching methods and the digital tools available. This skills gap limits the ability of both students and instructors to fully exploit the potential of multimodal literacy.

A significant challenge in the integration of technology in English studies found in the three universities used as case study is the lack of adequate infrastructure. The first biggest challenge the students mentioned in response to the open-ended question about what their biggest challenges were in using technology in learning was lack of equipment. There are issues such as insufficient computers or tablets for students. In many parts of the country, these issues disrupt the use of e-learning platforms like Zoom, Canva, Google Classroom and Moodle which are used by lecturers for delivering lectures. This hinders the seamless integration of multimodal tools into the English Studies curriculum. Another significant concern for many lecturers is the accessibility of technology-based learning for all students. In Nigerian higher education, Without access to stable and modern technological devices (computers, laptops, smartphones) especially in rural areas, inequitable learning environment results. For lecturers in English Studies, who often rely on student engagement and participation in discussions, these barriers can derail planned lessons or assessments, hindering effective teaching and student involvement in multimodal projects.

The second response of the students to the open-ended question on what their biggest challenges were in using technology in learning was unreliable internet connectivity, and inadequate power supply especially for those in the state university whose institution was somewhat rural. Unpredictable internet connectivity and power outages can prevent students from accessing materials, participating in discussions, or completing assignments on time. For lecturers, this creates a stressful teaching environment, as technology failures can derail planned lessons or assessments. Technical issues sometimes lead to frustration and contribute to students and instructors being limited in their ability to fully embrace the benefits of multimodal learning, and a lack of confidence in the effectiveness of technology-based learning in the long run.

Closely linked to the above point is limited financial institutional support. Financial limitation is a major challenge faced by many Nigerian institutions. Many universities struggle to secure funding for the purchase of technological equipment, the development of e-learning platforms, and the maintenance of these resources. Even when institutions attempt to implement technology for multimodal literacy, they may be unable to invest in the necessary infrastructure to support widespread use and maintenance. This challenge is exacerbated by the economic conditions of many Nigerian families, which limit students' ability to afford personal digital devices or access data plans for online learning. Additionally, this can also lead to time constraints where lecturers and students are

mindful of the length of time in terms of use of personal data or in terms of feeling when they consider how boring it seems to just sit and listen while staring endlessly at a gadget in audio format alone.

When instructors were asked to state any other challenge outside the options they were given, some of them stated technical issues having to do with software malfunctions and secondly, the lack of prompt repairs of dysfunctional laboratories or tools in the laboratories because of limited financial support and institutional indifference. Resistance to technological change also remains a significant barrier (Mishra & Koehler, 2020). Some instructors resist changing established teaching methods and find new methods, particularly those involving complex and unfamiliar technology annoying. English Studies strongly identifies with traditional literacy skills such as reading, writing, and analysis. Some instructors fear that students might become disengaged or distracted when learning through digital platforms without direct personal interaction, potentially undermining the depth of learning. Additionally, the absence of non-verbal cues such as body language and facial expressions in online environment makes it harder to gauge students understanding and participation.

Adopting digital tools for assignments or classroom interactions requires a new set of competencies which some lecturers are unwilling to undertake. This reluctance stems from lack of knowledge and training in how these tools function or how they can complement traditional pedagogical methods which they believe have worked for years. Some senior lecturers exhibit overt reluctance to modify their well-established pedagogical approach, feeling that their tried-and-tested methods are being undermined.

The teaching strategies and assessment methods in multimodal learning require educators to rethink their present strategies and methods of assessment. Curriculum development in this regard demands teamwork from all stakeholders intra and inter disciplinarily in order to create content that integrates digital tools effectively while enhancing students' multimodal literacy. Technological assessments of students' performance are not without challenges. English Studies assessment relies much on written essays, oral presentations, and group discussions which may pose difficulties handled online. Secondly, there are questions of academic integrity – when assessing creative or nuanced student contributions in online environments, issues bordering on plagiarism or copying from online sources may leave much to be desired in terms of assessing the true extent of their understanding or analytical skills. These challenges

should be addressed to maximise the impact of technologically driven knowledge-sharing. Recommendations in this regard follow next.

## 7. Recommendations

The following are the recommendations based on the findings and discussion in this paper. To begin with, it is recommended that lecturers in both public and private universities undergo continuous training on the integration of technology into teaching methods and practices to enhance their ability to utilise technology-driven tools effectively. The virtual institute for capacity building for higher education (VICBHE) by Peter A. Okebukola in collaboration with the National Universities Commission has been carrying out such training since 2021. Workshops, seminars, and professional development programmes should focus on building multimodal literacy and technical skills in instructors and students. Specifically, training for English studies on the integration of specific language technological tools for the teaching and learning of English. This will ensure that instructors refine their instructional strategies to facilitate the seamless adoption of technology thereby boosting their confidence. Integrating innovative teaching methodologies in the classroom will encourage self-paced learning for learners and foster interactive and immersive learning environments.

Moreover, governments and educational stakeholders should increase investment in digital education resources by investing in robust digital infrastructure, including internet connectivity and uninterrupted power supply. Education policymakers should invest in comprehensive policy interventions, develop and implement clear guidelines on technology integration to ensure standardisation, accessibility, and ethical use of technology for educational purposes. Schools should create enabling platforms for instructors and students to engage in peer collaboration, knowledge-sharing, and mentorship programmes that allow experienced lecturers to guide less experienced ones while older students with adequate technological knowledge can also mentor younger students, using technology-driven resources. Special provisions should be made to ensure equitable access to technology and tools, through the provision of necessary resources, funding, and technical support.

## 8. Conclusion

The paper provides empirical evidence on the role of technology in multimodal literacy development. The results indicate that despite the series of obstacles integrating technology for multimodal literacy may face, successes abound. However, challenges such as digital literacy gaps, inadequate infrastructure,

and poor response by management to repairs of faulty facilities were identified among the barriers hindering the successful actualisation and development of multimodal literacy skill for students in English. The challenges are consistent with findings by UNESCO (2022), which emphasise the need for institutional support, policy reforms, and digital literacy training to optimise technology and enrich the educational experience for both students and teachers. These findings align with existing literature, underscoring the benefits of technology and multimodal tools in educational advancement (Schmid et al., 2021; Zhao & Watterson, 2020).

The findings also contribute to the growing body of research advocating for the strategic integration of technology in education while suggesting directions and ways to mitigate associated challenges. The paper affirms that integrating technology in students' academic development can significantly enhance teaching quality and overall learning outcomes if given the attention it deserves. Policymakers and educational administrators should prioritise the integration of technology-based training programmes to ensure that teachers and students remain equipped with the necessary skills to navigate the evolving educational landscape.

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