1 Introduction

Language is crucial to a person's life because it reflects their identity, culture, and surroundings (Barakabitze, et al., 2019). Language is the only medium humans can use to access their abstract reality (De Valoes, 2014). It has been noticeable in the literature that ICT incorporation when teaching languages is paramount as it comes with numerous opportunities. Hung et al. (2018) argue that to respond appropriately to the changes brought about by the digital revolution, both the pace and the intensity of technology utilization must match. Research evidence from existing literature conducted in most Western and Asian countries show that integrating digital tools in classrooms when teaching languages comes with various and vast opportunities, such as enhancement of students' learning experience (Gacs, Goertler, & Spasova, 2020). Consequently, ICT possesses the capacity to function as a catalytic agent for the revolutionisation of the educational landscape, with simultaneous enhancement in the quality of teaching and learning in African languages. Additionally, ICT stands as a pivotal force in the protecting and propagating African languages (Brack, Osborn, Zhang, 2010; Barakabitze et al., 2019; Dang, 2023). Dang (2023) further elucidates that the utilization of digital instruments within tertiary educational establishments substantially enhances African languages quality. While lecturers can employ ICT tools to create tailored educational materials from online digital sources, the situation is different when it comes to lecturers who teach African languages. This distinction is due to the fact that African languages are underrepresented in most ICT online platforms (Dang, 2023). In higher education globally, there has been a remarkable increase in the adoption of digital learning and teaching with little critical analysis and focus on African languages (Bennett, Maton, & Kervin, 2008; Bullen et al., 2009).
The paper’s argument underscores the importance of leveraging technology to enhance education in South African higher learning institutions, particularly concerning African languages. This approach not only has the potential to improve educational outcomes but also contributes to the preservation of cultural and linguistic diversity in the county. This paper’s primary purpose is to investigate various opportunities for integrating digital tools in teaching African languages in South African higher learning institutions. Interventions that explicitly support teaching and promoting African languages will also be highlighted. While South Africa has experienced digitalisation, there is still room for more implementation (Brown & Czerniewicz, 2010). According to Brown and Czerniewicz (2010) only a small group of elite students in South Africa possess the necessary technological skills and characteristics of a "digital native". This lack of technology skills among students and lecturers hinders their adaptation to the Fourth Industrial Revolution (4IR). Developing a rigorous plan for emerging digital practices and learning design expertise is crucial to enabling digital democracy in South African higher education (Brown, & Czerniewicz, 2010; Albelbisi, Yusop, & Salleh, 2018; Xi, Chen, & Wang, 2018).

2 Gamification in African language classrooms

Incorporating technology and gamifying the content can make African language lessons more fun and interesting. Gamification in education involves using game-like elements and web 2.0 tools such as Kahoot, Quizzes, Epic, Jeopardy, Class Dojo, Bamboozle, and Mentimeter to increase student engagement, improve learning outcomes, and deepen their knowledge (Demirbilek et al., 2022). There has been a significant shift in the way technology is used in teaching and learning in the past decade (Brown & Czerniewicz, 2010; Díaz et al., 2020). According to Lubua (2015) this shift is due to the growth of technological innovations. Demirbilek (2022a) supports this idea, stating that technology has transformed traditional teaching and learning methods in higher eduction, including how courses are delivered, assessed, and conducted in the classroom. Introducing digital tools into the classroom can make learning more enjoyable and engaging (Demirbilek et al., 2022). Kahoot, a game-based application, has become one of education’s most commonly used 2.0 tools (Lubua, 2015). It creates a competitive environment among students where they choose the correct answer (Hung et al., 2018). To achieve high scores, students must answer correctly and quickly in Kahoot’s quiz game format, which creates a fun learning environment. Mentimeter is another web 2.0 tool that enables interactive presentations, quizzes, and word clouds (Gokbulut, 2020). According to Demirbilek et al. (2022) gamification is the future of education, transforming classroom and everyday activities into games. Gamification has proven beneficial in e-learning environments and educational settings (Fulton, 2019; Kiryakova et al., 2014). Games encourage ongoing engagement by allowing students to challenge friends or invite others to participate, earning points and rewards, and acquiring more knowledge. Thus, gamification in African language classrooms has the potential to improve students’ enrolment and enhance their academic performance. A study conducted in Tanzania reveals that gamification does contribute to higher student retention and enrolment rates (Lubua, 2015). Technology can additionally contribute to the cultivation of students' aptitude for problem-solving, critical reasoning, and collaborative abilities in an academic context (Ondrashek, 2017). These skills are essential in the 21st century (Díaz & Bajaña-Zajía, 2020). The theory surrounding gamification in education suggests that learners learn best when having fun (Fulton, 2019).

The study by Lubua (2015b), indicates that access to technology and a reliable internet connection can significantly benefit students completing their assessments. In Asian countries like China, students find it easier to complete their tasks outside the classroom because of affordable and reliable gadgets and uninterrupted power and internet connection (Yue, 2016; Loh, & Teo, 2017). In the context of education, gadgets refer to electronic devices that exhibit a diverse array, ranging from compact, portable tools to more
intricate apparatus, such as smartphones, laptops, computers, and tablets (Lie, et al., 2020).
These devices are typically engineered with the objective of simplifying tasks and enhancing the efficiency of educational processes, thus facilitating the teaching and learning experience (Lie et al., 2020). Digital tools should be made more affordable to ensure equal access to technology for all South Africans, especially the younger generation.

3 ICT strategy in teaching and advancing African languages

The emergence of digital technology, which has led to a significant change in how we conceptualize, explain, and anticipate our reality, lies at the heart of the information revolution (Andin et al., 2019). Consequently, the desire for higher education institutions to conduct lectures via and with technological tools is a critical national imperative of the information revolution (Hennessy et al., 2010). The revolution has resulted in the increased necessity of integrating digital devices capable of handling African languages in the classrooms. However, Sife, Lwoga, & Sanga (2007) reveal strong claims that incorporating and utilizing digital tools cannot occur when linguistic impediments exist. Even with the emphasis placed on language as a repository for every aspect of culture, indigenous languages are frequently ignored in all respects (Udoye, 2016). The ex-colonial languages have persisted in elevating themselves above the native languages in many African countries (Lie et al., 2020). This act compels universities to explicitly formulate a technology strategy and language policies that encourage the practice of ICT integration in classrooms to preserve and advance African languages. Hennessy et al. (2010) assert that despite the stalling progress regarding language policy implementation and development in Africa, South Africa is incredibly acquiescent to the indigenous language development and policy as opposed to other African countries. South Africa has established outstanding multiple language planning and implementation bodies such as the Language Plan Task Group (LPTG), The Pan South African Language Board (PSALB), and National Language Services (NLS) (Barakabitze et al., 2015, 2019). Even with all these language bodies in place, the need for more practice of integrating technology when teaching indigenous languages in most South African universities still need to be at the forefront (Hasin & Nasir, 2021). This need calls for a clear strategy for integrating digital tools in classrooms.

4 The value of African linguistics in ICTs

Studies have shown that indigenous African languages are underrated in technology domains (Gudmundsdottir, 2010a). This marginalisation can be attributed to the legacy of colonialism and apartheid, as well as ingrained myths and inadequate language policies (Lie et al., 2020). This paper argues that indigenous African languages must be incorporated in ICTs due to their significant potential. The integration of ICT within African languages classrooms carries the potential to foster an enduring enthusiasm for the advancement and dissemination of African languages in the realm of ICT, particularly among students, who constitute the forthcoming generation of leaders (Ondrashek, 2017). Sadly, Gumbi (2019) has revealed that integrating isiZulu into ICTs in KwaZulu-Natal's higher education sectors is progressing very slowly. While efforts have been made by organizations such as the Organization of African Unity (OAU) and the United Nations (UN) to promote African languages in education and communication, a study by Rahimi & Van Staden (2019) found that only a small number of websites use African languages. Incorporating ICTs in classrooms can improve language development (Gudmundsdottir, 2010b). Thus, embracing this approach can add significant value and have great benefits in preserving and advancing indigenous African languages. It is crucial to facilitate
the transition of lecturers from a state of mere awareness to the practical implementation of ICT within the South African academic context. South African universities should fully embrace digitalisation of African languages for better education. To ensure that indigenous Africans can benefit from the information revolution without adopting foreign languages, new techniques that cater to the unique features of African languages are urgently required. Indigenous Africans refer to Indigenous Africans encompass a heterogeneous array of ethnic and cultural communities who have resided in Africa for numerous generations, often characterized by unique languages, customs, and lifestyles (Gumbi, 2019). They constitute the continent's autochthonous population, pre-dating the advent of colonialism and external influences (Gumbi, 2019).

5 Conceptual framework
5.1 Language Management Theory
The Language Management Theory (LMT), one of the popular framework in the linguistic field, is used to provide the contextual framework for this paper. Language Management Theory (LMT) is a valuable framework for understanding and addressing language-related challenges in the context of integrating digital tools and African languages (Filipović, & Pütz, 2016). This theory was first developed by Jernudd and Neustupný in the late 1980s, and it focuses on the ways in which societies manage and control language use, particularly in multilingual settings (Kassim, 2018). LMT offers insights into how language planning, policy, and practices can be strengthened to deal with linguistic challenges in various contexts. One of the key aspects of language management is standardisation, which involves developing orthographies for African languages and maintaining their consistency (Nekvapil & Sherman, 2015). This initiative facilitates the integration of African languages into digital tools (Kassim, 2018). Hence, it is of high importance for every South African institution of higher learning to develop and execute language policies that advocate for the proper utilization of native languages in the context of digital tools. In the context of integrating ICT with African languages, LMT provides a useful lens to analyse, address and propose the possible solutions to the challenges that may arise. LMT is deemed relevant for this papers since it is associated with well-known scholars such as Jernudd and Neustupný (Nekvapil & Sherman, 2015). Literature indicates that numerous language problems emerge in discourse (Gruber, 2021). In the realm of this paper, LMT is helpful for its ability to provide a clear understanding of the different types of language problems that might arise in integrating digital tools and African languages. LMT provides a framework that facilitates formulating strategies to address such problems (Ezeanya-Esiobu, 2019).

Among these problems, the issues of standardisation, linguistic diversity, limited language resources, low literacy rates, phonological complexities, translation, and localisation are outstanding (Filipović, & Pütz, 2016; Tatham, 2009). However, despite these language challenges, it is crucial to emphasize the importance of allocating a fair amount of attention and resources to African languages in the ICT field, on a level similar to the attention given to Western languages, especially English.
This equal effort distribution is imperative to achieve a complete digital access and effectiveness in African language settings. (Filipović, & Pütz, 2016).

6 Impacts of digitalization on African language education in South African universities
This section presents and discusses the technology integration implications on teaching and advancing African languages in South African higher education sectors. The author presents the literature review results and discusses them in a thematic form.

6.1 Lack of technology skills and inadequate resources
ICT has grown over time to become a vital component of society (Lie et al., 2020). This growth, however, needs to catch up in emerging countries like South Africa (Hasin & Nasir, 2021). A study conducted by Ndebele (2014a) reveals that producing and disseminating local content on the web is virtually only possible with adequate ICT utilisation alongside the local linguistic heritage. Despite facing difficult conditions with limited resources, South African universities have shown signs of investing significantly in ICT infrastructure. This investment has been made using their resources or with the help of grant-giving organisations (Brown & Czemniecisz, 2010). However, it is crucial to better understand how this technology is being utilised for educational purposes rather than just administrative ones. According to Bolton, Goosen & Kritzinger (2023), most higher education institutions are reluctant to the transition in technology due to numerous factors. Among these issues are a need for more technology-savvy instructors and students, inadequate resources, and negligible or non-existent ICT and African language integration policies (Munj & Jita, 2020). The above-highlighted factors justify the growing necessity of implementing intensive and ongoing awareness-raising campaigns about the value of linguistics and language technology and constant workshops to equip lecturers with the necessary technology skills (Nekvapil & Sherman, 2015). To make ICT an essential part of the teaching and learning process in any educational setting, it is of paramount importance to involve lecturers as active participants in any technology-centered approach and planning (Alenezi, 2020). South African higher learning lecturers must embrace new technologies and utilise them for content creation and delivery in their classrooms. Sadly, there is not enough evidence that in most higher-learning sectors lecturers and students are adequately dedicated to technology to improve the quality of education and facilitate learning in their day-to-day activities (James, et al., 2006; Van der Westhuizen, & Van Vuuren, 2007). To achieve effective technology integration within South African universities, it is crucial to underscore the importance of regular foundational technology training, the formulation and execution of comprehensive technology plans involving all relevant faculty stakeholders. In light of the above, according to Adegbol (2009), creating the technology committees, whose primary responsibility will be overseeing technology use on campus and fostering partnerships with different technology stakeholders for obtaining technological services and equipment, is necessary.

6.2 Lack of African language - ICT policies and practice
In South Africa, to improve the lives of future generations and equip students and lecturers with relevant technology skills, progressive ICT policies introducing new technology in the educational system have been launched (Gudmundsdottir, 2010a). However, there needs to be more evidence of language-ICT policies, particularly for African languages, and there is still a considerable challenge to implementing and practicing these policies in higher education institutions. The presence of new ICTs in Africa justifies the increasing necessity of embracing the usage of different
indigenous African languages in ICTs (Osborn & Osborn, 2010). The potential of Africa's indigenous linguistic heritage within the ICT domain should be considered in the classroom setting. The National Language Policy Framework (Department of Arts and Culture, 2016) is a significant document that obligates different government departments to a 'multilingual mode of operation' (Mesthrie, 2006). This policy primarily advocates for the establishment of language policies guided by the Constitution Republic of South Africa and the Language Policy for Higher Education (Department of Education 2003; Ndebele, 2014b). However, Lafon & Consortium (2009) reveal strong claims that ICT, language policy implementation and practice in the education sector in the South African context is still at its infancy. The awareness of language and ICT policies and their successful establishment, alongside the employment of practical initiatives in higher education sectors, will increase technology integration in classrooms, the achievement of African languages preservation and promotion.

7 Conclusion
This paper has demonstrated that although South Africa is determined to embrace digital change in higher learning institutions, most lecturers and students are reluctant to the change due to several factors. It has been discussed how higher learning sectors can integrate digital tools in their classrooms when teaching African languages. Digital tools integration will contribute to the promoting, preserving and enhancing native African languages. It is concluded that all South African universities should prioritise implementing intensive and ongoing awareness-raising campaigns about the value of linguistics and language technology. Language and ICT seniors should be constantly held to equip language lecturers with the necessary technology skills.

8 Recommendations
The following recommendations are made for future research and practice:
- For African languages preservation and enhancement, adequate language and ICT policies for African language development should be formulated and constantly be practiced in South African higher education sectors.
- South African higher education institutions should invest heavily in implementing continuous and intensive awareness-raising seminars about the value of linguistics, language technology, and practice.
- A rigorous plan for emerging digital practices in classrooms should be carefully developed for digital democracy in South African higher education where African language lecturers will be actively involved.
- More empirical studies on incorporating technology in African language classrooms are strongly recommended to emphasise technology’s role in promoting African languages.

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