

**PERSPECTIVES ON ARTIFICIAL INTELLIGENCE AMONG  
TEACHERS AND STUDENTS AT BUKOOLI COLLEGE BUGIRI.**

**BY**

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# STATEMENT OF DECLARATION.

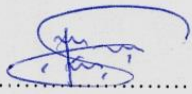
I **MUTESI MWAMINI** declare that this research proposal is my original work and is submitted for the award of the degree of bachelor of education of language and literature at Busitema University.

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This research report has been prepared under my supervision upon appointment by Busitema University.

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## **SUMMARY**

Artificial intelligence (AI) is rapidly transforming various aspects of society including education. Artificial intelligence technologies became increasingly integrated into educational environment. Understanding how they are perceived by key stakeholders is essential for effective implementation and utilization. The research employed qualitative research methods specifically in-depth interviews and focus groups to gather teachers and students' opinions regarding the integration of artificial intelligence in language education focusing on the level of awareness, attitudes and concerns related to artificial intelligence in education. The study revealed a generally positive outlook towards artificial intelligence among teachers and students with limited exposure to artificial intelligence environment, lack of infrastructure and concerned about the ethical considerations. However, the integration in language education was welcomed

# Table of Contents

|                                                                                                   |                               |
|---------------------------------------------------------------------------------------------------|-------------------------------|
| STATEMENT OF DECLARATION.....                                                                     | Error! Bookmark not defined.  |
| ENDORSEMENT BY THE SUPERVISOR.....                                                                | iii                           |
| ABSTRACT.....                                                                                     | Error! Bookmark not defined.v |
| CHAPTER ONE .....                                                                                 | 1                             |
| 1.1 Artificial intelligence (AI).....                                                             | 1                             |
| 1.2 Problem statement. ....                                                                       | 1                             |
| 1.3 Purpose of the study.....                                                                     | 2                             |
| 1.4 Aim of the study. ....                                                                        | 2                             |
| 1.5 Objectives of the study.....                                                                  | 2                             |
| 1.6 Research questions.....                                                                       | 2                             |
| 1.7 The significance of the study. ....                                                           | 2                             |
| CHAPTER TWO .....                                                                                 | 3                             |
| 2.0 Introduction.....                                                                             | 3                             |
| 2.1 Artificial Intelligence. ....                                                                 | 3                             |
| 2.2 AI in language learning and teaching. ....                                                    | 4                             |
| 2.3 Advantages and disadvantages of artificial intelligence in language learning and teaching. .. | 9                             |
| 2.4 Perspectives among teachers and learners on AI.....                                           | 10                            |
| CHAPTER THREE:.....                                                                               | 13                            |
| 3.0 Introduction.....                                                                             | 13                            |
| 3.1 Research methods. ....                                                                        | 13                            |
| 3.2 Area of study. ....                                                                           | 14                            |
| 3.3 Study population. ....                                                                        | 14                            |
| 3.4 Sampling criteria.....                                                                        | 14                            |
| 3.5 Research tools and instruments.....                                                           | 14                            |
| 3.6 Validity and reliability of the method .....                                                  | 14                            |
| 3.7 Data analysis procedures.....                                                                 | 14                            |
| 3.8 Data collection procedures. ....                                                              | 15                            |
| 3.9 Ethical considerations.....                                                                   | 15                            |
| 3.10 Limitations of the study.....                                                                | 15                            |
| CHAPTER FOUR.....                                                                                 | 16                            |
| DATA PRESENTATION.....                                                                            | 16                            |
| Table 1.1 Teacher's presentation.....                                                             | 16                            |

|                                                                                                   |           |
|---------------------------------------------------------------------------------------------------|-----------|
| <b>4.1 Familiarity with Artificial intelligence.....</b>                                          | <b>16</b> |
| <b>4.1.2 Effectiveness of AI in Language Education.....</b>                                       | <b>17</b> |
| <b>4.1.3 Benefits of artificial intelligence.....</b>                                             | <b>17</b> |
| <b>Graph 1.1 Perceived benefits Artificial intelligence by teachers. ....</b>                     | <b>17</b> |
| <b>Graph 1.1 Other related benefits.....</b>                                                      | <b>18</b> |
| <b>4.1.4 challenges associated with artificial intelligence. ....</b>                             | <b>18</b> |
| <b>4.1.5 Training on how to integrate AI in language education.....</b>                           | <b>19</b> |
| <b>Table 1.2 Students presentation.....</b>                                                       | <b>19</b> |
| <b>4.2 Familiarity with artificial intelligence.....</b>                                          | <b>19</b> |
| <b>Table 1.3 Questionnaire responses. ....</b>                                                    | <b>19</b> |
| <b>4.2.1 STUDENTS ATTITUDE TOWARDS ARTIFICIAL INTELLIGENCE. ....</b>                              | <b>20</b> |
| <b>Table 1.4 Students responses regarding their attitude towards artificial intelligence.....</b> | <b>20</b> |
| <b>4.3 How do you expect to interact with artificial intelligence. ....</b>                       | <b>21</b> |
| <b>CHAPTER FIVE .....</b>                                                                         | <b>22</b> |
| <b>SUMMARY, CONCLUSION AND RECOMMENDATION .....</b>                                               | <b>22</b> |
| <b>5.1 Summary.....</b>                                                                           | <b>22</b> |
| <b>5.2 Conclusion .....</b>                                                                       | <b>22</b> |
| <b>5.3 Recommendation.....</b>                                                                    | <b>23</b> |
| <b>References.....</b>                                                                            | <b>24</b> |

## **CHAPTER ONE**

### **1.1 Artificial intelligence (AI)**

This is the ability of computer systems to perform tasks that normally require human intelligence. From a technical perspective, AI is a computer technology that enables computer system to simulate human intelligence [Lang et al 2021, Pokrivcakova 2019]. The rapid advancement of artificial intelligence (AI) has permeated various sectors, fundamentally transforming how tasks are performed, decisions are made, and interactions are facilitated. One of the most impactful areas of this transformation is education, where AI has the potential to revolutionize teaching and learning processes. This research delves into the perspectives on artificial intelligence among two critical stakeholders in the educational ecosystem: teachers and students. Understanding these perspectives is crucial for several reasons. Firstly, teachers are the primary facilitators of learning, responsible for designing and implementing curricula that incorporate AI tools. Their attitudes towards AI can significantly influence its integration into the classroom. Teachers' perspectives can range from enthusiasm about AI's potential to enhance personalized learning and administrative efficiency to concerns about job displacement, the ethical implications of AI, and the adequacy of professional development for AI integration. Secondly, students are the direct beneficiaries of educational advancements, and their perspectives on AI are equally important. Students' acceptance and adaptability towards AI can affect their engagement and learning outcomes. While some students may embrace AI for its ability to provide personalized learning experiences and immediate feedback, others may express concerns about data privacy, the impersonal nature of AI-driven interactions, and the potential reduction in human touch in education. This research aims to explore these diverse perspectives through a comprehensive analysis that includes qualitative and quantitative methodologies. Surveys, interviews, and case studies will be employed to gather data from a representative sample of teachers and students across various educational levels and geographical regions. The findings will offer valuable insights into how these stakeholders perceive AI's role in education, their expectations, and their reservations. By identifying the key trends in teachers' and students' attitudes towards AI, this study will contribute to a deeper understanding of the challenges and opportunities associated with AI in education.

### **1.2 Problem statement.**

The integration of artificial intelligence (AI) in education presents both unprecedented opportunities and significant challenges. While AI technologies have the potential to enhance personalized learning, streamline administrative tasks, and provide innovative educational tools, their successful implementation largely depends on the perceptions and attitudes of the key stakeholders in the educational process: teachers and students. Despite the growing presence of AI in educational settings, there is a lack of comprehensive understanding of how these stakeholders perceive its role, benefits, and risks. Teachers, who are central to the

adoption and integration of AI in classrooms, may have varying levels of knowledge, acceptance, and readiness to utilize these technologies. Concerns about job security, ethical implications, and the adequacy of training and resources can influence their willingness to embrace AI. Conversely, students, who are the primary users of AI-driven educational tools, might have different perspectives based on their experiences, expectations, and concerns regarding data privacy, the impersonal nature of AI interactions, and the potential shift in teacher-student dynamics. Teaching, there's a lack of comprehensive understanding of the current status, benefits, challenges and opportunities of AI adoption in the language teaching and learning.

### **1.3 Purpose of the study.**

The purpose of this study is to provide knowledge on artificial intelligence in language learning and teaching, check on that teachers and learners opinions regarding AI in the classroom.

### **1.4 Aim of the study.**

The aim of this study is to examine teacher's opinions concerning the application of AI in language learning and teaching with a focus on assessing it's effectiveness in improving learner engagement, personalized instruction and language proficiency.

### **1.5 Objectives of the study.**

To explore the prevailing attitude and teachers perception towards artificial intelligence in language education.

To explore students perspective on artificial intelligence in language education.

To examine how teachers and students expect to interact with artificial intelligence in language education.

### **1.6 Research questions.**

What are the perceptions of teachers towards the integration of artificial intelligence in language education?

What are the perspectives of learners regarding the application of artificial intelligence in the English language teaching?

How do teachers expect to interact with artificial intelligence in their classrooms?

### **1.7 The significance of the study.**

The significance of this study lies in its potential to shed light on innovative approaches in language education, leveraging artificial intelligence understanding the effectiveness of AI in language teaching and learning can inform educators, policymakers and technologist, facilitating the development of more effective and accessible language learning solutions for diverse leaders globally.

## CHAPTER TWO

### 2.0 Introduction.

#### 2.1 Artificial Intelligence.

The origin of Artificial Intelligence (AI) can be traced to John McCarthy's research in 1955. Various scholars have defined the concept of Artificial Intelligence (AI). According to Wang (2018), AI refers to devices' or systems' ability to think as human beings, having the power and skills to learn, perceive, and decide rationally and intelligently. Benhamou and Janin (2018), AI involves a collection of technologies that enable machines to act with a very high level of intelligence similar to humans. Tredinnick (2017) describes AI as a cluster of technologies, and various computing science approaches to make flexible rational decisions that align with unpredictable environmental conditions. However, this trend can be linked to process automation, the Internet of things, data processing, tangible robotic, conversational interactions and decision support.

IBA Global Employment Institute (2017) classify AI into two types which are weak artificial intelligence and strong artificial intelligence. Weak artificial intelligence describes the process whereby the computer is merely an instrument for investigating cognitive processes (IBA Global Employment Institute, 2017). This implies that the computer simulates intelligence. On the other hand, strong artificial intelligence describes the processes whereby the computers are intellectual, self-learning processes. This implies that the computer has the natural human capacities to perform tasks just like a man. The Institute goes further to categorize the various economic uses of AI in the libraries into five which are deep learning, robotization, dematerialization, and autonomous driving. The term artificial intelligence was constructed the first in 1956 by John McCarthy (McCarthy et al., 2006). "At that time, the researchers came together to clarify and develop the concepts around thinking machines which up to this point had been quite divergent. McCarthy is said to have picked the name artificial intelligence for its neutrality; to avoid highlighting one of the tracks being pursued at the time for the field of thinking machines that included cybernetics, automata theory and complex information processing. The proposal for the conference said, "The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it." (as cited in Marr, 2018, para. 2). AI refers to a broad field of science encompassing computer science, psychology, philosophy, linguistics, mathematics, and others. It becomes evident that there are many points of view on AI, and many definitions exist. Dictionary definitions focus on AI "is a sub-field of computer science and how machines can imitate human intelligence: a branch of computer science dealing with the simulation of intelligent behavior in computers; the capability of a machine to imitate

intelligent human behavior” (as cited in Merriam-Webster). “Definitions of artificial intelligence begin to shift based on the goals that are trying to be achieved with an AI system. Generally, people invest in AI development for one of these three objectives: build systems that think exactly like humans do (strong AI), just get systems to work without figuring out how human reasoning works (weak AI), and Use human reasoning as a model but not necessarily the end goal” (as cited in Marr, 2018, para. 7).

Amazon defines AI as the field of computer science dedicated to solving cognitive problems commonly associated with human intelligence, such as learning, problem-solving, and pattern recognition. Machine learning is so important to Amazon, they stated, Without ML, Amazon.com could not grow its business, improve its customer experience and selection, and optimize its logistic speed and quality (as cited in Marr, 2018, para. 10). Machine and deep learning are the priority for Google AI and its tools to create smarter, more useful technology and help as many people as possible from translations to healthcare to make our smartphones even smarter. Facebook AI Research is committed to advancing the field of machine intelligence and is creating new technologies to give people better ways to communicate. IBM’s three areas of focus include AI Engineering, building scalable AI models and tools; AI Tech, where the core capabilities of AI such as natural language processing, speech and image recognition, and reasoning are explored and AI Science, where expanding the frontiers of AI is the focus” (as cited in Marr, 2018, para. 12).

## **2.2 AI in language learning and teaching.**

Entering the 21st century has been accompanied by many radical changes in the educational system as far as learning inputs, processes, and outcomes are concerned. Intelligent machines as applications of AI contribute to changing the roles played by schools, teachers, and learners. They will also change the traditional and virtual patterns of interaction in the educational milieu. Teachers and learners will be dealing with interactive machines to share educational experience, and achieve the required objectives. These machines will offer interactive educational platforms that conduct discussions with the students and respond to their questions and reactions. They will solve traditional classroom problems such as paying attention and motivation, caring for individual differences among learners, and supporting those with special needs. With feedback, improving the levels of student achievement, and developing positive attitudes towards teaching/learning, they will also provide solutions to the problem of interaction in large classrooms. These aspects will be directly and positively affected by employing AI applications in the teaching/learning process (Dickson, 2017).

Al-Gayyar, (2013) indicates that AI applications vary, and intelligent systems of online electronic learning are among the most essential intelligent educational systems. These are the most significant applications of AI use in Education. They are the outcome of

merging many systems and applications in the field of AI such, as Intelligent Tutoring Systems, Activating the Internet, activating hypermedia, and Activating distance E-education (pp. 503-504). Muhammad,(2014)describes various applications of AI, “which include electronic neural networks, developed hybrid systems, applications of developmental algorithms, electronic auto-copying, adaptive electronic platforms, bio-robots, Nano-technology, chemical and organic systems, and advanced controlling systems”(p. 18).

Borge, (2016) analyzes the importance of AI applications in the results of student evaluation processes at the university and pre-university stages. AI makes it easy for instructors to measure their students’ level precisely, which is something often difficult to achieve. It enables university teaching staff to assess the status of the educational processors and determine deficiencies in the lectures, scientific content, and the educational material introduced to students. AI helps meet the needs of each student according to their abilities and needs by submitting home assignments and monitoring the scores obtained by each student because it has intelligent programs that identify common mistakes. It gives the instructors hints as to what the problems are, and introduces instant feedback in a file designed separately for each student. Furthermore, AI tools and programs can cope with classroom density (pp. 1011).

Nowadays, studies refer to the diversification of AI education applications, including programmed learning and other open-source hightechnology. The importance of AI applications is determined by the ability: -to suit the needs andskills of the learners; -to work according to their educational preferences; and to monitor the progress rate of each learner. These applications contain tracks that suit all learners despite differences among their levels, boost their learning motivation, and cope with students’ low levels of attention. They provide feedback that indicates student achievement levels and points of weakness and strength in the scientific content. They ensure that the curriculum subjects are integrated parts of each subject, and that the learner has mastered one section before moving on to a more advanced one. The scientific content can be introduced in the form of problems, which the students work out according to their self-study streams. Instructors monitor this process and provide guidance and feedback. AI tutoring systems can replace instructors as they have programs that provide advice automatically and enable learners to use self-study skills (Kamuka, 2015).

Teaching English as a foreign language is regarded as developing communicative competence, which is achieved through knowing how to use language elements and vocabulary to develop the skills of listening, speaking, reading, and writing. It also includes using language to produce texts, and how to use it to understand reading passages. The process of language development is based on communication as a goal and as a process. Therefore, using traditional and digital communication strategies in the teaching/learning processes and activities is necessary. It is required to use AI

applications such as simulation and communication programs as they simulate real-life communication situations in English, introduce practical training in language skills, and educational games based on language. Communication tools based on AI help design situations for practicing the accurate pronunciation of letters and words through sound drills and visual media. Such devices provide exercises for describing and interpreting images and everyday situations, for listening, and for practicing guided pronunciation. They also allow learners to practice language skills and provide feedback for guidance. Some programs have language drills that give training in communication through using language skills to guarantee that learners reach proficiency levels (Barnes-Hawkins, 2016).

Radwan, (2017) indicates that AI can be used to overcome many of the difficulties of teaching/learning English: using Information Retrieval techniques to build the ability to comprehend reading passages; employing Machine Translation to develop students' translation skills; using Automatic Speech Recognition techniques to learn correct pronunciation, using Text-to-Speech techniques for blind and visually impaired students; using open digital language dictionaries to enrich the vocabulary of the student; using intelligent programs to augment speaking skills for English learners; implying a writing evaluation technique to teach paragraph and essay writing.

New demands and challenges have been brought about by technological advancements for both teachers and students. We need to be prepared to advance with AI even if we haven't even finished talking about how Internet and communication technology (ICT) is affecting our classrooms. (Sumakul et al, 2022).

In general, AI is intended to execute and facilitate human tasks virtually. This concept can benefit both teachers and students in the teaching and learning process when it is used in a learning environment. (Rusell et al., 2004).

That's the reason why Junaidi et al. (2020), conducted a quasi-experimental study to evaluate the efficacy of AI applications in EFL classrooms. In this research, the Lyra Virtual Assistant (LVA) was used. This program is an intelligent personal assistant that responds to queries from users on a variety of subjects, offers suggestions, and manages the user's device using natural language. (Budzinski et al., 2019). The goal was to enhance the speaking abilities of seventh graders, whose English proficiency was considered weak. This grade has a rule allowing students to bring cell phones into the classrooms. A sample of 33 and 32 students, respectively, from the experimental and control groups, participated in the study. Each group has equal English-speaking skills. Both the pre-test and the post-test utilized an oral test. The content from the syllabus used for the pre-test involved students speaking with inappropriate tone and pronunciation. After that, researchers started imparting knowledge to the experimental and control groups. Researchers used chosen lesson materials and vocabulary pronunciation in the

control group. The same content was taught to the experimental group, but the students used the Lyra Virtual Assistant app to practice their pronunciation. Two sessions of forty minutes were held over four weeks. Then they conducted a posttest. The results demonstrated that speaking teaching using Lyra Virtual Assistant produced better results for the experimental group than for the control group. Therefore, Lyra helps students perform better when speaking English.

Ma (2021) carried out experimental research to examine a college English immersive context teaching approach based on virtual reality (VR) technology and machine learning. Because VR technology places a high value on students' practical skills (Shelly et al., 2020). The sample for this research was freshmen from economics in a university, 34 students in class 1 and 33 students in class 2. Average English score differences were minimal. Class 1 was an experimental class that used constructivism and VR technology in conjunction with English immersion education for one semester. Class 2 worked as a control group, employing traditional teaching strategies and educating like PPT presentations, a whiteboard, and videos. The same teacher taught both courses, and the teaching methodology was consistent with the lesson material. Every class met three times per week. The two classes took the identical English test that included listening, speaking, grammar, reading, comprehension, and writing at the end of a semester. The results demonstrated that the experimental class's speaking and listening scores were significantly higher than those of the control group. Additionally, the experimental class's writing score is somewhat higher than the control class's. This indicates that virtual reality immersion may enhance general performance. Talking about another important English skill, like writing, it can mention that there are many AI tools that play an essential role in English language teaching and learning, such as Grammarly. It is an award-winning online grammar-checking tool available for free and the most widely used in the world. In this sense, Vo et al., (2023) researched the use of Grammarly as a proofreader and the improvement in students' writing skills.

The Grammarly tool was used by the researchers in this experimental investigation in English writing classes at a college of economic and social relations. Two writing classes served as the sample for this study. 17 students were in the experimental group and 20 were in the control group. Both classes covered the same subject, including cause and effect essays as well as narrative, comparison and contrast, and descriptive essays. After three months, students in both classes were required to submit a brief essay on the assigned topic in 45 minutes. Students in the experimental group were encouraged to use Grammarly's free version to double-check their manuscripts before submission, while the control group's submissions were not checked by any tools. According to the findings, students who applied Grammarly in class tended to perform better than those who did not. This improvement can be attributed to Grammarly's technique of self-correction.

Grammarly's feedback, which shows right away after students complete their work, is more comprehensive for students when they are still aware of their goals and ideas than the teachers' corrective input, which was received a week after submission. Students may immediately identify the errors they regularly committed thanks to Grammarly's awareness and replacement alternatives, and they will be careful to avoid making the same errors in their future work. However, in terms of assessing content and organization of the writing, the presence of teachers is highly required.

AI was used by Suryana et al., (2020) to improve yet a further essential skill. Their study looked into how students felt about using mobile AI applications to enhance their listening comprehension of English. It was qualitative research conducted via a WhatsApp online interview. Five students made up the sample, including two male and three female psychology majors. They looked at how participants felt about various artificial intelligence mobile applications, including TuneInNFL Radio, Free Music, Sports& Podcasts, Netflix, Joox Music, and VOA Learning English Listening every day, that can be used to develop listening abilities. The study's findings revealed that many students believed Netflix to be the most useful and effective artificial intelligence mobile application for enhancing their English listening abilities.

Arini et al., (2022) worked on the same line two years later with a mobile learning application that is being developed to ensure that all learners have the opportunity to be autonomous and to advance collaborative learning. It was a quasi-experimental study examining whether the use of artificial intelligence based in the form of NovoLearning can elevate EFL students' competence. NovoLearning is an artificial intelligence-based mobile application available in the Play Store and App Store which assists the English as a Foreign Language teaching and learning process. The sample was 200 tertiary students in the first semester. 100 students were chosen as a control group and 100 students were selected as the experimental group. Both of the groups are not significantly different in English competence. All of the participants were given a pretest. Then, after the groups have divided into control and experimental randomly, all the learning material and assignments were prepared, which is similar to both groups. The control group was given a Blended English course that consists of face-to-face interaction and using E-learning during the teaching and learning process. Meanwhile, the experimental group was given NovoLearning as their learning tool in English courses. Before conducting the research, the experimental group was given training on using and operating AI-based mobile learning.

Novo Learning consists of three different levels in general English; levels 1 to 3. All the students in the experimental group are required to finish all the levels to complete the program. The materials in the English course and NovoLearning are similar. The research was conducted in one semester. The posttest was administered to both control and experimental groups at the end of the semester. The data analysis findings showed that

the control and experimental groups both have significantly different results on the learners' English competence. The difference in the students' competence in this study can be attributed to two factors of learning to use artificial intelligence-based mobile learning: supporting the learning environment and reducing anxiety. In addition, it is also feasible to conduct autonomous learning.

### **2.3 Advantages and disadvantages of artificial intelligence in language learning and teaching.**

Artificial Intelligence (AI) offers several advantages in language learning and teaching, including Personalized Learning where AI can tailor language lessons based on individual learner's strengths, weaknesses, and progress, providing a customized learning experience. Immediate Feedback. AI enables real-time assessment and feedback, helping learners' correct mistakes promptly and reinforcing language skills effectively. Adaptive Learning Paths. AI algorithms can adjust the difficulty of exercises and content to match the learner's proficiency level, ensuring a challenging yet manageable learning path. Language Understanding and Generation. AI-powered language models can understand and generate human-like text, enhancing natural language processing capabilities for language learners. Speech Recognition. AI technologies can analyze pronunciation and offer feedback, aiding learners in improving their oral communication skills. Interactive Learning Tools. AI can create engaging and interactive learning materials, such as chatbots and language games, making the learning process more enjoyable and effective. Data Analytics for Progress Tracking. AI allows educators to analyze data on students' performance, identifying patterns and areas for improvement to optimize teaching strategies. Language Translation. AI-powered translation tools facilitate understanding of different languages, making learning materials more accessible to a global audience.

Radwan (2017, p. 2) indicates that AI can be used to overcome many of the difficulties of teaching/learning English:

- Using Information Retrieval techniques to build the ability to comprehend reading passages.
- Employing Machine Translation to develop students' translation skills.
- Using Automatic Speech Recognition techniques to learn correct pronunciation.
- Using Text-to-Speech techniques for blind and visually impaired students.
- Using open digital language dictionaries to enrich the student's vocabulary.
- Using intelligent programs to augment speaking skills for English learners.
- Employing a writing evaluation technique to teach paragraph and essay writing.

In terms of roles that can be explored by AI in language learning and teaching, one of it is it enables learners to speed up their learning of a particular language (Kite -powell 2017). Learners are able to learn a language based on repetition phrase patterns that show the relationships between words. The disadvantages of using Artificial Intelligence in language learning and teaching include the decrease in human interactions: with such poor personal connection, students don't learn and practice social skills. Teacher unemployment: if more schools use AI to teach and students learn on their own,

there will be no more jobs for teachers. However, this is highly unlikely, as teachers will be needed in other capacities. Lack of emotional intelligence: unlike technology, teachers can teach students social skills like empathy, as well as communication skills that will help make them well-rounded adults.

Dependence on technology: students rely on technology too much instead of learning how to do things for themselves. Elevated costs: AI technology is expensive to set up and maintain. Risk of hacking the students' data: if the system is hacked, personal information can be misused.

#### **2.4 Perspectives among teachers and learners on AI.**

Today, the elements of AI are a reality that future teachers must understand and appropriately integrate into their teaching practices to ensure the efficiency and effectiveness of the educational process. Research by Kim, Soyata and Behnagh (2018) shows how AI can provide teachers with realtime feedback during presentations, analysing audio and visual elements of the presenter to determine the quality of the presentation and improve the audience experience. A similar approach is found in Woolf et al. (2013) who appreciate that AI can help improve education in the long term by personalising learning, improving student experiences by evaluating datasets of teaching behaviour, motivation, and social interaction. However, there are also negative aspects of AI, identified by Păvăloaia and Necula (2023), such as the high costs of integrating technology, the fact that it can lead to job losses and higher electricity consumption. It should also be considered that prolonged virtual time can cause dependency, lack of empathy, and communication deficiencies; moreover, there is concern about the security of the data used by AI, in case the data have vulnerabilities, can be compromised or stolen (Pisica et al., 2023).

Although most stakeholders understand the benefits and progress brought about by AI, its implementation is not as clear and there are many challenges and pressures on educational institutions to set guidelines and standards in the use of AI (Bonsu and Baffour Koduah, 2023). Moorhouse and Kohnke (2023) showed that AI tools will generate substantial changes in curriculum and that teacher educators need support to develop the necessary skills to use AI appropriately. Integrating AI in education is a complex process, which requires from the outset to establish the correct working coordinates, so that teachers and students alike perceive the benefits of AI, the safe and constructive ways of using technology in their work.

Designing the right way to integrate AI into educational institutions requires first a clear understanding of the knowledge, skills, and perceptions of teachers and students alike. Numerous scientific papers explore the knowledge and preconceptions of teachers related

to technologies, robots, or elements that generate artificial intelligence (GAI). KaplanRakowski et al. (2023) show that the more teachers have a better outlook on GAI, the more often they use it. Based on this finding, the present research will analyse the extent to which future teachers in Romania perceive more advantages or disadvantages in using AI. The benefits of AI for teachers do not seem to be confined to generating content, Chounta et al. (2022) highlight that, despite their limited knowledge of this type of technology, Estonian teachers use AI as a tool to facilitate the access and use of multilingual content. Unfortunately, there is still no consensus on methods and techniques to use AI in teaching and research. Fahrman et al. (2020) explain this situation by the constantly changing skills of teachers and the fact that “researching, exploring and understanding this knowledge and skills is also complex”. Teachers’ technical skills, knowledge, and perceptions greatly influence student knowledge; therefore, this research will assess the extent to which prospective teachers used AI and will consider that they have sufficient knowledge of it.

The differences in perceiving AI can also be explained by age; Chan and Lee (2023) show that Gen Z (born 1990-2000) students are optimistic about the potential of AI technologies, while Gen X (born 1960-1980) and Gen Y (born 1980-1990) teachers acknowledge its benefits, but also express concerns about overreliance on, ethical and pedagogical implications of this technology. From this point of view, this research will examine teachers’ perceptions of students’ requirements to use AI and, respectively, the appreciation of students for teachers who use this technology. Therefore, AI Ed is at the same time a challenge in respecting the authenticity of computer-generated content, which can lead to the “sacrifice of uniqueness and creativity” of the human mind, so it is imperative to adopt standards for responsible and ethical behaviour in the use of this technology (Dalalah and Dalalah, 2023). Holmes et al. (2022) point out that the low interest in the ethics of using AI in education may lead to an underdevelopment of this field, limiting the impact of AI and the usefulness of this technology.

A second broad category of scientific papers investigates the perception and interaction of students with AI. Chao et al. (2021) observe that attitudes toward AI among students tend to be predominantly positive. However, as Ravi Kumar and Raman (2022) note, students consider that AI can be used in teaching and learning activities or other administration processes, but do not trust its use in the assessment processes such as admissions or examinations. Doumat et al. (2022) complement this finding by pointing out that, although more than 57% of students believe that “assessment by AI is more objective”, only 26% of them “want to be assessed by AI”.

As with teachers, students understand the potential of technology, but see its implementation and use in their future careers as a distant and long process. Sit et al. (2020) confirm this with the example of medical students who feel unprepared but understand the growing importance of AI in their future work and therefore would like to

learn more about it. Advances in artificial intelligence (AI) have also revealed problems with the accuracy of computer-generated data. Research by Dalalah and Dalalah (2023) shows that the use of AI in various professions, such as medicine, can be harmful by providing erroneous positive or negative test results, leading to delays in caring for health problems or the suggestion of unnecessary procedures or therapies. Such errors can also occur in the use of AI in student assessment. This may explain the opinion of students that “AI cannot replace the teacher”, but at the same time they want more AI resources to help them achieve their educational goals (Zou et al., 2020). The difference between different types of AI resources stems from the perceived usefulness and simplicity of communication, as Kim et al. (2020) show, and the use of AI can work especially when face-to-face interaction is not possible.

Artificial intelligence (AI) is increasingly being integrated into educational settings, prompting a need to understand Teachers' views on this technological advancement (Karakose et al, 2023). Integrating AI into classrooms is reshaping teachers' roles and attitudes towards technology. Several studies have examined how educators perceive AI and the implications of AI technologies for their profession (Athanasopoulos et al 2023). Polak et al (2022) employed the will, skill, Tool model to guide their study to facilitate AI integration in language education. They identified the need for an AI-supportive online Educational platform through focus groups and surveys. Results depicted that teachers had a positive attitude and strong motivation for AI education (will factor). While they possessed basic digital skills, their AI-related skills were limited (skill factor). Resource availability was generally not an issue but further research on tool readiness was recommended.

The study of Chounta et al (2022) aimed to explore how Estonian k-12 teachers perceive AI and its relevance within the fairness, Accountability, Transparency and Ethics (FATE) framework. Through a survey of 140 teachers, they found out that although educators have limited knowledge about AI, they see it as a valuable opportunity for education. The study highlighted the need for AI support to improve teachers' productivity. Moreover, teachers see AI as a tool to help them access and use multilingual content. Kim and Kim (2022) investigated teachers' perceptions on an AI-enhanced scaffolding system for STEM education. Most STEM teachers viewed AI positively for enhancing scaffolding support. However, concerns were raised about changes in the teacher's role in the classroom and the need for transparency in AI decision-making. The studies on teachers' views on AI in language education have made valuable contributions but there are still several gaps. This research aimed to investigate teachers' and students' Perspectives regarding artificial intelligence at Bukooli college Bugiri in Bugiri district.

## **CHAPTER THREE:**

### **3.0 Introduction.**

This chapter described the methods that the researcher used while carrying out research. The chapter also dealt with the methods of data analysis, methods of data collection and instruments used to collect data. It also highlighted the various problems that were encountered during the research and how they were overcome.

### **3.1 Research methods.**

This refers to the behavior and instruments used in selecting and constructing the research technique, Interviews:

Interviews involve presentation of oral-verbal stimuli and reply in terms of oral-verbal responses. The researcher employed personal interview, structured in particular. They involve direct interaction between the researcher and the participant(s), allowing for in-depth exploration of their perspectives, experiences, and opinions. Interviews can be structured (with predetermined questions) or unstructured (allowing for more open-ended discussions). They can be conducted face-to-face, over the phone, or through video conferencing. Interviews provide rich data that can capture nuances and contextual information. This was applied for both students and teachers, I interviewed them and found out how artificial intelligence can be used to teach language for learners and by them for the case of teachers.

Focus Groups: Focus groups involve bringing together a small group of participants (usually 6-10) to discuss a specific topic or issue under the guidance of a moderator. The group dynamic allows for interactions and exchanges among participants, generating diverse perspectives and insights. Focus groups are particularly useful for exploring shared experiences, group norms, and collective opinions. They can be conducted in person or online. For this case I grouped learners in groups of five students each.

Document analysis is a method used in qualitative research to examine and interpret various types of documents, such as written texts, photographs, videos, audio recordings, and other forms of media. It involves a systematic and rigorous examination of these documents to gain insights and understanding about a particular research topic. For this case, I looked at the lesson plans of the teachers.

Questionnaire. This refers to a range of questions including both closed and open-ended questions. The questions are usually typed, can be distributed online, use of a phone and physically t sample. I distributed the questionnaire to both the teachers and students to find out how familiar they were with Artificial intelligence.

### **3.2 Area of study.**

The area of study in focus was to secondary school in Bugiri district, Busoga region. with Bukooli college Bugiri as the case study.

### **3.3 Study population.**

The study population consisted of the students and teachers, male and females in secondary school in Bugiri district particularly senior two students and teachers of language of Bukooli College Bugiri in Bugiri district.

### **3.4 Sampling criteria.**

The study will use the simple random sampling. The study will be done in multiple places using simple random sampling method as every one may have the chance to give in their views because many understand differently. Simple random sampling technique is used because it gives every member of the population a chance of being included in the study and thus eliminating bias.

### **3.5 Research tools and instruments.**

Research tools and instruments refers to the measurement tools designed to obtain data from the target population. Sample interview guides and questionnaires were used to get the data from the target population. The researcher used interview guide when collecting data, a recorder to record some folktales and the comments made by some of the respondents. A pen and notebook to note down important information gathered.

### **3.6 Validity and reliability of the method**

The term validity refers to the extent to which differences found with a measuring instrument reflect true differences among those being tested while on the other hand reliability is the degree to which an assessment tool produces stable and consistent results. In other words, with reliability different researchers should be able to obtain the same results under the same conditions of the assessment tools. According to the methods that were used by the researcher, both validity and reliability were meant by these methods.

### **3.7 Data analysis procedures.**

Bickle and bogdan (1992) maintain that data analysis is a systematic process which involves working with data, organizing and breaking them into manageable units, synthesizing them, searching for patterns, discovering what is important and what is learnt and deciding what to tell others. The researcher used content and document analysis.

### **3.8 Data collection procedures.**

The tools used to collect data were questionnaire guide because many respondents can be reached, and interview guide to obtain teachers and students opinions.

### **3.9 Ethical considerations.**

The research considerations were observed as follows; Research topic was approved by the department administration and the proposal by the research supervisor. An introductory letter from the university was obtained introducing the researcher to the administrators of Bukooli college Bugiri secondary school for approval and introduced the researcher to the clients. Confidentiality, privacy and informed consent were ensured in the course of the study. Respondent's names were not required (forms filled in anonymity) The researcher ensured that the participants were protected from any harm, which could be physical or emotional. The participant was treated with respect, as they were capable of making decisions and must feel free to volunteer.

### **3.10 Limitations of the study.**

The following limitations are likely to be met during the study; The respondents were reluctant to give the true information on artificial intelligence in language learning and teaching. However, this was solved by constantly making the respondents to be aware of the importance of the study. Refusal of the participants to participate in the study due to denial and fear and this was solved by thorough explanation to allay anxiety. The research exercise was quite costly in terms of time and monetary aspects. The researcher overcame this by carefully using the limited time and finances within an affordable cost, that enabled her to produce the research within the accepted time.

## CHAPTER FOUR

### DATA PRESENTATION

This deals with data presentation, discussion and analysis of the captured data from in depth interviews, questionnaires and observation as extracted from the respective respondents. The study employed Bukooli College and focused on senior two class and all the teachers of English language in the school.

**Table 1.1 Teacher's presentation.**

| Gender | Number of participants | Age range | Number of participants | Years of service | Number of participants | Graduation status | Number of participants |
|--------|------------------------|-----------|------------------------|------------------|------------------------|-------------------|------------------------|
| Female | 4                      | 25-30     | 1                      | 4-6              | 1                      | Undergraduate     | 2                      |
| Male   | 2                      | 30-35     | 2                      | 6-8              | 3                      | Diploma holders   | 6                      |
|        |                        | 35-40     | 2                      | 8-10             | 2                      |                   |                        |
|        |                        | 40-45     | 2                      | 10-12            | 1                      |                   |                        |
|        |                        | 45-50     | 1                      | 12-14            | 1                      |                   |                        |

This study involved eight teachers, four females and 2 males. This was simple because female beings tend to be keen with aspects of language thus taking on language education courses more than males. These were interviewed through in-depth interviews to gather their varying perspectives on the role and impact of AI in language education. The questionnaire aimed to uncover their thoughts on the benefits, challenges and future potential of AI in their teaching practices. The key areas of focus included the effectiveness of AI tools, integration challenges, student engagement and ethical considerations.

#### **4.1 Familiarity with Artificial intelligence.**

The age, gender, graduation status and years of experience did not affect teacher's familiarity with artificial intelligence. From in-depth interviews, majority of teachers had a basic understanding of artificial intelligence but didn't have much experience with AI tools specifically for language teaching and learning. However female 1 was quite familiar with artificial intelligence in general, she understood how AI analyze data and make decisions in the context of language education. Male 1 had used few AI-powered grammar and spelling checkers but hadn't explored more advanced applications. Female 2's knowledge of artificial intelligence was limited, she knew AI is used in various technologies but hadn't had much exposure to it. She said " in our

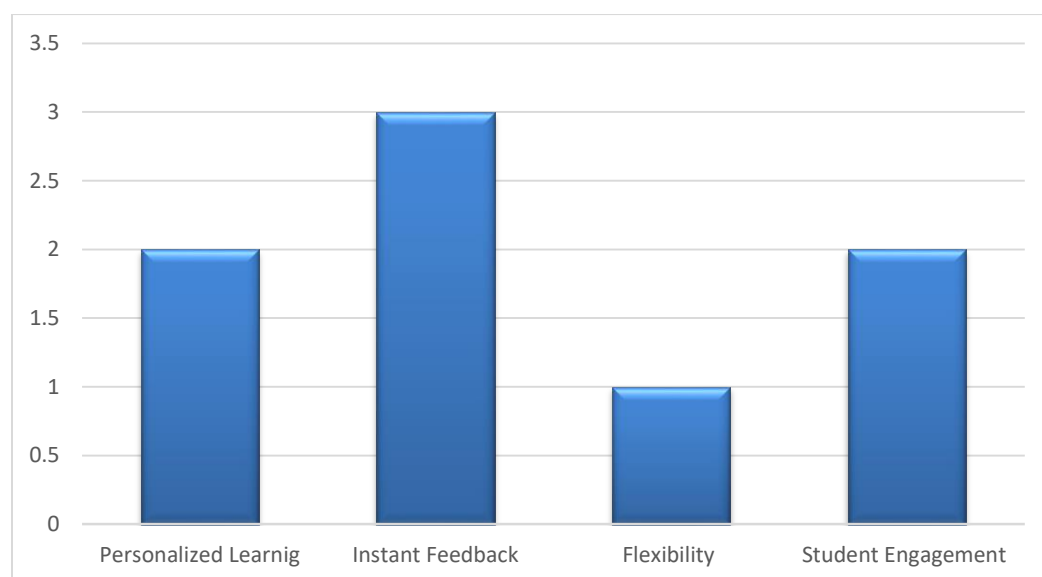
school, we mostly use traditional teaching methods, so I haven't seen much AI integration in our language classes". Male 2 had a good grasp of artificial intelligence and its potentials but hadn't used it extensively in his classroom but sees potential benefits. Female 4 was interested in learning more about how artificial intelligence can be applied to language education.

#### **4.1.2 Effectiveness of AI in Language Education.**

All the teachers agreed they hadn't used AI tools in their classrooms so they couldn't speak to their effectiveness. However, they were interested in exploring how they could be used to enhance language learning and support their teaching objectives. Female 3 had a belief AI would be very effective for example AI-driven platforms that provide personalized learning experience could help address the diverse needs of students, ensuring that each one gets the appropriate level of challenge and support. Male 2 couldn't comment on the effectiveness of AI tools from personal experience since he hadn't used them, however, based on what he read online, they seem to offer significant benefits such as personalized learning and immediate feedback.

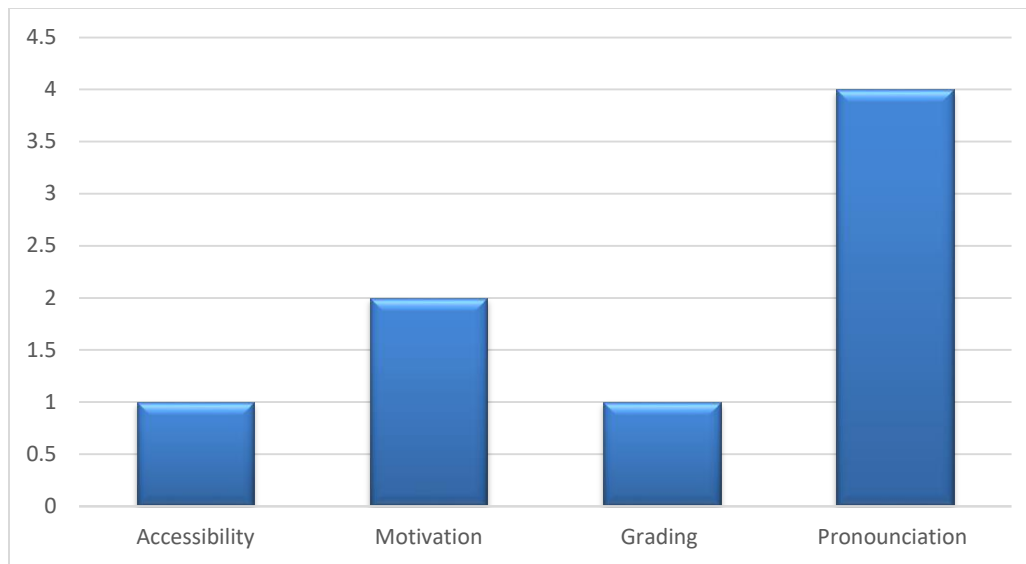
#### **4.1.3 Benefits of artificial intelligence.**

**Graph 1.1 Perceived benefits Artificial intelligence by teachers.**



The Questionnaire aimed at identifying perceived benefits of artificial intelligence by teachers which included personalized learning, instant feedback, students engagement and flexibility. From the graph, 2 teachers perceived personalized learning is the biggest benefit of artificial intelligence. 3 teachers indicated that instant feedback is the major benefit of artificial intelligence and one teacher believed flexibility is one of the benefits of artificial intelligence in language education. Two teachers indicated that student engagement is also among the benefits of Artificial intelligence in language learning and teaching.

**Graph 1.2 Other related benefits.**



Other related benefits included accessibility, motivation, grading and pronunciation. One teacher indicated accessibility was one of the benefits of AI, 2 teachers believed in motivation as the benefit and 1 teacher perceived grading as the benefit of artificial intelligence in language education. However, 4 teachers had a strong belief that pronunciation as the benefit.

Although teachers didn't have much exposure to artificial intelligence, all teachers believed personalized learning is one of the biggest benefits of AI in language education. Instant feedback was also identified by three teachers as a benefit of artificial intelligence.

#### **4.1.4 challenges associated with artificial intelligence.**

One of the main challenges is the lack of resources and infrastructure. Many schools in Uganda do not have reliable internet access or enough computers for students to use artificial intelligence tools effectively thus limiting its implementation. Female 4 raised a concern of data privacy and security. AI tools often collect a lot of data on students performance and learning habits. There needs to be assurance that this data is stored securely and used ethically to protect students privacy. For female 2 and male 2 who were not familiar with AI, their biggest challenge was the steep learning curve. Teachers need proper training and support to understand how to integrate AI tools into their teaching effectively. Without adequate training, it can be overwhelming and difficult to use tools properly. Male 1 identified that there is a risk of over reliance on technology, while AI could be a great support, it shouldn't replace the human element of teaching. This is because effective language learning requires interaction, cultural context and empathy which AI cannot fully replicate. Female 3 said that cost is a major challenge associated with artificial intelligence. Many advanced AI tools and applications come with high subscription fee which might not be affordable for all schools. Ensuring that all students have equal access to these resources is a significant concern.

#### 4.1.5 Training on how to integrate AI in language education.

All teachers agreed they hadn't had any formal training on using AI in language education. Female 4 and male 1 tried to learn on their own through online resources but it would be much more beneficial to have structured training sessions provided by experts.

**Table 1.2 Students presentation.**

| Gender | Number of participants | Age range | Number of participants | Level of study | Number of participants |
|--------|------------------------|-----------|------------------------|----------------|------------------------|
| Female | 36                     | 12-14     | 12                     | Advanced       | 22                     |
| Male   | 24                     | 14-16     | 24                     | Ordinary       | 38                     |
|        |                        | 16-18     | 20                     |                |                        |
|        |                        | 18-20     | 4                      |                |                        |

The study employed a sample size of 60 students with 22 learners from advanced level and 38 from the ordinary level. This was due to the implementation of Artificial intelligence practice in ordinary level which encourages teachers to integrate artificial intelligence related tools like computer systems. This was to enable the researcher to find out if teachers were willing to integrate artificial intelligence in their classrooms.

#### 4.2 Familiarity with artificial intelligence.

**Table 1.3 Questionnaire responses.**

| Response          | Number of participants |
|-------------------|------------------------|
| Very familiar     | 0                      |
| Somewhat familiar | 20                     |
| Not very familiar | 30                     |
| Not all familiar  | 10                     |

The sample size of 60 participants provides a reasonable insight into the general population's familiarity with artificial intelligence. The distribution shows that a small number of the participants have at least some level of familiarity with artificial intelligence. This includes the 20 who are somewhat familiar and 30 who are not very familiar with artificial intelligence. There is still a considerable number of participants who have little to no familiarity with artificial

intelligence including 30 who are not familiar and the 10 who are not at all familiar. These findings indicate a need for more educational initiatives to increase awareness and understanding of artificial intelligence.

Through in-depth interviews, some students were somewhat familiar but not familiar with artificial intelligence in their learning process. Some students were not all that familiar with artificial intelligence. One of the students indicated that he had never used Artificial intelligence and did not know how it works. Student 8 said that she had ever heard about artificial intelligence during the ICT practical lessons, their teacher mentioned AI imitate human actions and decision making. When it comes to learning it provides immediate feedback but the teacher cautioned them not to rely on them because they might lose their critical thinking. Student 20 pointed out that she is somewhat familiar with artificial intelligence." Through social media platforms like Tik Tok I have ever watched a video of the first Nigerian robot doing house work anyway helped students with their homework ". The study uncovered that there was no learner who was very familiar with artificial intelligence.

#### **4.2.1 STUDENTS ATTITUDE TOWARDS ARTIFICIAL INTELLIGENCE.**

**Table 1.4 Students responses regarding their attitude towards artificial intelligence.**

| <b>Response</b>   | <b>Number of participants</b> |
|-------------------|-------------------------------|
| Very positive     | 14                            |
| Somewhat positive | 26                            |
| Neutral           | 2                             |
| Somewhat negative | 6                             |
| Very negative     | 2                             |

Students expressed mixed feelings, both positive and negative experiences leading to a neutral stance. Some students felt they did not have enough exposure to artificial intelligence in language education to form a strong opinion. Many students open to learning more about artificial intelligence and potentially seeing its benefits in the future. There was an uncertainty about the long-term impacts of artificial intelligence on language education quality and job prospects. Interestingly, none of the students expressed very negative attitude towards artificial intelligence in language learning and teaching. This suggests a general openness or lack of strong opposition to the integration of artificial intelligence tools in their learning process. Through in-depth interviews and focus groups, students were very excited and curious about how Artificial intelligence can be used during the learning process. They were willing to learn more about Artificial intelligence and the skills they need to be able to use AI in their learning. This revealed a positive attitude towards artificial intelligence in their learning.

### **4.3 How do you expect to interact with artificial intelligence.**

Through in-depth interviews, teachers expressed how they expect to interact with artificial intelligence. Female 1 see Artificial intelligence as a revolutionary tool in language education. She was willing to use AI to personalize learning for each student, identify gaps in their understanding and provide resources. Male 2 was cautious about integrating Artificial Intelligence into his classroom. He said that while it can be helpful for administrative tasks, he is worried about over reliance on technology. He also had a belief that teaching is inherently a human -centered profession thus it might undermine that. Male 2 believed AI holds great promise for special education. He hopes to use Artificial intelligence to create customized learning plans for his students, monitor their progress and adapt teaching strategies in real time thus supporting diverse learning needs. However, female 3 preferred traditional teaching methods. She said that Artificial Intelligence might be beneficial for some aspects like grading, she wasn't keen on using it extensively in her class. She values direct interaction and the personal touch which can be provided by a human teacher only. Female 4 was curious about using artificial intelligence for language teaching. She had a view that Artificial Intelligence should complement not replace human feedback. Teachers were willing to integrate Artificial intelligence in their classrooms with a strong belief that the primary interaction should be still be between teachers and students to build trust and social skills.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

These were reached after thorough analysis of the findings and it is upon this that the researcher came up with the summary, conclusion and recommendations as presented.

#### **5.1 Summary**

The researcher employed questionnaires, in depth interviews and focus group discussions which were intended to extract data from the respondents. The interviews were conducted in a calm and relaxed atmosphere which gave the respondents opportunity to share their mind about AI and the truth on ground. The interviews explicitly showed that there was nothing to do with AI in the school and its application as not felt at any point.

#### **5.2 Conclusion**

This study explored the perspectives of teachers and students on artificial intelligence (AI) at Bukooli college Bugiri secondary school in Uganda, where the presence of AI is minimal. The findings reveal a generally positive outlook toward AI among both groups, despite limited exposure and resources. Teachers expressed a keen interest in integrating AI to enhance teaching methods, streamline administrative tasks, and provide personalized learning experiences. However, they also highlighted significant challenges, including a lack of training, infrastructure, and adequate support systems.

Students showed enthusiasm for AI's potential to make learning more engaging and tailored to individual needs. They were particularly interested in AI tools that could offer interactive and adaptive learning experiences. Nevertheless, concerns were raised about the potential for AI to replace human interaction and the need for balanced implementation that complements traditional teaching methods.

The study underscores the importance of targeted investment in AI education and infrastructure in Ugandan secondary schools. It also highlights the need for professional development programs to equip teachers with the necessary skills to effectively incorporate AI into their teaching practices. Furthermore, there should be a focus on creating policies that ensure equitable access to AI technologies, preventing the exacerbation of existing educational inequalities. In conclusion, while the journey towards AI integration in Ugandan secondary schools presents challenges, the enthusiasm and optimism exhibited by teachers and students provide a strong foundation for future developments. By addressing the identified barriers and fostering a supportive environment for AI adoption, there is significant potential to enhance the educational landscape and prepare students for a technologically advanced future.

### **5.3 Recommendation**

The government of Uganda should demystify the ideological existence of science and technology in Ugandan schools by providing AI supported tools as learning equipment in its schools. This is intended to achieve the great milestone in the science and technology that the government seems to be investing much of its interest. The government should further intervene through the ministry of Education and sports in equipping teachers with skills right from the teacher training institutions in order to empower them apply AI in classes. This is in response to the limited exposure to artificial intelligence exhibited by most teachers in the school. However, all this can be done but there is need to create a connection between the current education systems with the current trends in order to create relevance. This applies to the policy makers who need to supervise most of the drafted policies which seem to be failing. A reflection of the IT policy in schools which most schools have failed to embrace due to failure to raise or receive funds for the sponsorship of the programs.

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