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Instructors' Readiness for Artificial Intelligence Adoption in Instructional Facilitation at the Institute of Adult Education, Coast Region, Tanzania

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Abstract: *This study examined instructors' readiness for Artificial Intelligence adoption in instructional facilitation at the Institute of Adult Education, Coast Region, Tanzania. Specifically, the study assessed the level of instructors' readiness, examined the extent to which Artificial Intelligence is used in instructional facilitation practices. The study was guided by the Technology Acceptance Model developed by Davis (1989). A convergent parallel mixed methods design was employed, whereby quantitative and qualitative data were collected simultaneously, analysed separately, and later integrated during interpretation. The study involved 80 participants, including instructors, adult learners, and academic administrators. Quantitative data were collected using structured questionnaires and analysed through descriptive statistics using SPSS Version 29, while qualitative data were collected through in-depth interviews and analysed using thematic analysis. The findings revealed that instructors demonstrated moderate readiness for Artificial Intelligence adoption despite having positive attitudes towards the technology. The study further established that Artificial Intelligence was widely used in instructional facilitation for lesson preparation, content generation, searching academic materials, and simplifying teaching and learning activities. However, limited technical knowledge, inadequate training, and infrastructural challenges affected effective adoption and integration of Artificial Intelligence in instructional practices. The study concludes that Artificial Intelligence has become an important instructional support tool within adult education institutions. The study recommends investment in ICT infrastructure and continuous professional training to enhance instructors' readiness and effective use of Artificial Intelligence in education*

Keywords: Artificial Intelligence, Instructors, Facilitation, Information Communication Technology, Adult Education

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1. Introduction

Artificial Intelligence (AI) has become a transformative force in global education systems by reshaping instructional facilitation, assessment, learning support, and academic communication processes through generative models and machine learning systems (Kasneci et al., 2023). The rapid expansion of AI technologies in education has introduced new forms of teaching support such as automated content generation, intelligent tutoring systems, and adaptive learning environments that significantly change how instructors facilitate learning processes (Holmes et al., 2022). However, despite these advancements, concerns have emerged regarding ethical use, academic integrity, and the readiness of instructors to effectively integrate AI into instructional practices (Dwivedi et al., 2023).

In the United States, Artificial Intelligence has been widely integrated into higher education institutions where it is used to support instructional design, student assessment, and academic writing facilitation (Rudolph

et al., 2023). Universities have responded to this development by revising assessment frameworks and introducing AI-related academic integrity policies to manage the increasing use of generative tools in student learning (Cotton, Cotton & Shipway, 2023). However, despite these interventions, institutions continue to experience challenges in distinguishing between human-produced and AI-generated academic work, which has created serious concerns about assessment validity and instructional reliability (Bearman et al., 2023). This situation shows that even in highly resourced systems, instructors face difficulty adapting their facilitation practices to the realities of AI-driven education environments.

In the United Kingdom, AI technologies have been embedded into instructional facilitation through intelligent learning systems, automated feedback mechanisms, and digital assessment platforms designed to enhance teaching effectiveness (Holmes et al., 2022). However, instructors face increasing challenges in managing student reliance on AI tools for academic tasks, which undermines independent learning and critical thinking development (Chan & Hu, 2023). Although universities have introduced AI literacy initiatives for educators, implementation remains inconsistent, and instructors are still adjusting their pedagogical approaches to match emerging technological realities (Perkins et al., 2023). This reflects a persistent instructional problem where facilitation practices are not fully aligned with AI-driven learning environments.

In China, AI adoption in education is highly advanced, particularly through smart classrooms, adaptive learning systems, and national digital learning platforms that support instructional facilitation at scale (Zhai et al., 2022). These systems enhance teaching efficiency and provide real-time learning analytics for instructors to support students more effectively (Li et al., 2023). However, despite these technological advancements, instructors face challenges in ensuring academic integrity and maintaining learner independence in AI-rich environments (Guo & Lee, 2023). The widespread availability of AI-generated academic content has made it difficult for instructors to maintain traditional instructional control over originality and authorship in student work (Wang et al., 2023). This indicates that technological advancement alone does not solve instructional challenges without strong pedagogical adaptation.

In Australia, Artificial Intelligence is increasingly used in higher education institutions to support instructional facilitation through automated grading, feedback generation, and personalised learning systems (Selwyn, 2023). These technologies are designed to reduce instructors' workload and enhance teaching efficiency (Van Slyke et al., 2023). However, instructors are concerned about students' overdependence on generative AI tools, which negatively affects writing skills, independent thinking, and deep learning engagement. Despite institutional policies guiding AI use, instructors still struggle to regulate its use effectively in classroom and assessment contexts due to rapid technological evolution (Kelly et al., 2023). This demonstrates an ongoing instructional challenge in balancing innovation with academic control.

In Africa, AI integration in education is still emerging within broader digital transformation processes aimed at improving access and quality of education systems (Mhlanga, 2023). In countries such as South Africa and Kenya, AI tools are gradually being introduced into higher education for teaching and learning support (Nyang'au et al., 2023). However, institutional readiness remains limited due to inadequate ICT infrastructure, lack of trained personnel, and weak policy frameworks guiding AI use in education (Ayanwale et al., 2024). Instructors often lack sufficient training to integrate AI into instructional facilitation practices, leading to inconsistent and informal usage patterns (Tella & Adu, 2023). This creates a situation where AI tools are available but not effectively utilised pedagogically.

In East Africa, countries such as Rwanda and Uganda have made significant progress in digital education reforms aimed at strengthening ICT integration in teaching and learning processes (Mtebe & Raphael, 2024). Rwanda has invested in smart education initiatives that support digital instruction across institutions, while Uganda has expanded ICT-based teaching programmes in higher education (Twinomuhwezi and Namubiru, 2023). However, despite these developments, instructors in the region still face challenges in adapting their facilitation practices to AI-supported learning environments due to limited professional training and inadequate institutional support systems (Ssekakubo et al., 2023). This results in a mismatch between technological availability and instructional readiness.

In Tanzania, the education sector has experienced increasing adoption of digital technologies, including AI-supported tools, particularly in universities and adult education institutions (Mtebe, 2023). These tools are being used for instructional preparation, academic writing support, and learner engagement activities (Kafyulilo and Fisser, 2023). However, this adoption remains largely informal and unstructured due to weak institutional frameworks governing AI use in education (Mfaume and Bhalalusesa, 2024). Additionally, challenges such as unreliable internet connectivity, inadequate ICT infrastructure, and limited digital literacy among instructors continue to affect effective instructional facilitation using AI technologies (Tilya and Mafumiko, 2023).

In the Coast Region of Tanzania, adult education institutions are increasingly experiencing the use of

Artificial Intelligence tools in instructional facilitation by instructors and learners (Institute of Adult Education, 2024). Instructors are gradually using AI tools for lesson preparation, content generation, and instructional support, while learners use AI for assignments, summarisation, and academic assistance (Institute of Adult Education, 2024). However, this adoption is taking place in environments characterised by weak ICT infrastructure, limited institutional training, and absence of structured AI integration policies (Mfaume and Bhalalusesa, 2024). As a result, instructional facilitation is becoming increasingly dependent on individual instructor capacity rather than institutional readiness.

Furthermore, instructors face difficulties in managing learners' increasing dependence on AI-generated content, which often reduces originality and critical engagement in learning activities (Kasneci et al., 2023). This has raised concerns about academic integrity, assessment validity, and the quality of learning outcomes in adult education settings (Cotton et al., 2023). In addition, limited training on AI integration prevents instructors from effectively guiding learners on ethical use of AI tools in academic work (Bearman et al., 2023). Therefore, the central problem is that although Artificial Intelligence is increasingly being used in instructional facilitation in adult education institutions in the Coast Region of Tanzania, instructors' readiness to effectively and ethically adopt these technologies remains insufficient within a context of limited institutional and infrastructural support.

1.1 Statement of the Problem

In Tanzania, adult education institutions are increasingly adopting digital tools, including AI applications, in teaching and learning processes. Instructors are gradually using AI for lesson preparation, content development, and instructional support. Despite this development, many instructors still lack adequate training, structured institutional guidance, and sufficient digital literacy skills to effectively use AI in instructional facilitation.

In the Coast Region, adult education institutions are experiencing growing exposure to AI tools among instructors and learners. However, the integration of AI remains informal and inconsistent due to limited ICT infrastructure, inadequate institutional support, and absence of clear policies guiding AI use in education. Instructors also face challenges in managing learners' increasing dependence on AI-generated content, which affects academic integrity and the quality of learning outcomes. This situation reflects a mismatch between the increasing availability of Artificial Intelligence technologies and instructors' readiness to adopt and integrate them effectively in instructional facilitation. Therefore, this study seeks to assess instructors' readiness for Artificial Intelligence adoption in instructional facilitation at the Institute of Adult Education in the Coast Region of Tanzania. Hence the study guided by three objectives such as to determine the level of instructors' readiness for Artificial Intelligence adoption in instructional facilitation, to examine the extent to which Artificial Intelligence is used in instructional facilitation practices and to explore challenges affecting instructors' effective and ethical adoption of Artificial Intelligence in instructional facilitation.

2. Literature Review

2.1 Theoretical Framework

This study was guided by the Technology Acceptance Model developed by Fred Davis in 1989. The model explains the factors that influence individuals to accept and use a particular technology in their daily activities or work environments. Davis (1989) explained that technology adoption is mainly determined by two major perceptions: perceived usefulness and perceived ease of use. Perceived usefulness refers to an individual's belief that using a certain technology can improve work performance, while perceived ease of use refers to the extent to which the technology is considered simple and effortless to operate (Davis, 1989). According to the model, these perceptions shape users' attitudes and willingness to adopt new technologies.

In relation to this study, the Technology Acceptance Model is important because it helps explain instructors' readiness to adopt Artificial Intelligence in instructional facilitation. Instructors are more likely to integrate AI technologies into teaching activities when they believe that such technologies can improve instructional effectiveness, assist in lesson preparation, support learner engagement, and reduce teaching workload. Likewise, instructors may be willing to use AI tools when they perceive them as user-friendly and manageable within instructional practices. The model also helps to explain how institutional and technological conditions can influence instructors' readiness to use AI in educational settings. Factors such as ICT infrastructure, institutional support, training opportunities, and digital literacy may shape instructors' perceptions regarding the usefulness and ease of using AI technologies. Therefore, the Technology Acceptance Model provides an appropriate theoretical foundation for understanding instructors' readiness and adoption of Artificial Intelligence in instructional facilitation at the Institute of Adult Education in the Coast Region of Tanzania.

Level of Instructors' Readiness for Artificial Intelligence Adoption

A study done by Chan and Hu (2023) in the United Kingdom on instructors' readiness for Artificial Intelligence adoption in higher education used a

qualitative case study design. The study collected data through interviews and document analysis. The findings revealed that although instructors showed positive attitudes toward AI, their readiness was limited to basic technical use rather than full pedagogical integration due to insufficient AI literacy and ethical uncertainty. The study recommended continuous professional development and institutional capacity building. This highlights the need for the current study to examine whether instructors in Tanzanian adult education institutions have similar readiness limitations.

Ayanwale et al. (2024) in Nigeria on instructors' readiness for AI adoption in higher education used a mixed-methods explanatory design. Data were collected using questionnaires and interviews. The findings showed low readiness among instructors due to inadequate ICT infrastructure, limited digital literacy, and insufficient training opportunities. The study recommended investment in ICT facilities and structured capacity-building programmes. This creates a need for the current study to investigate whether similar institutional and skill-related challenges affect instructors in Tanzania.

A study done by Mtebe (2023) in Tanzania on digital transformation and AI use in education used a qualitative exploratory design. Data were collected through interviews and document review. The findings revealed that instructors had increasing exposure to AI tools but lacked formal training and institutional guidance, leading to informal and inconsistent use. The study recommended development of structured training and institutional frameworks. This necessitates the current study to assess the actual readiness level of instructors in adult education settings where support systems remain weak.

The extent of the Use of Artificial Intelligence in Instructional Facilitation

A study done by Holmes et al. (2022) in Europe on AI integration in instructional facilitation used a mixed-methods approach. The study collected data from educators through surveys and interviews. The findings revealed that AI tools improved instructional efficiency by supporting content generation, personalised learning, and automated feedback. The study recommended strengthening AI integration frameworks in education systems. This creates a need for the current study to examine whether such structured use of AI exists among instructors in Tanzanian adult education institutions. Similarly,

Dwivedi et al. (2023) in global education contexts on AI adoption in teaching used a systematic review approach. The findings indicated that AI use in instructional facilitation is often unstructured and individually driven due to weak institutional policies. The study recommended development of clear governance frameworks for AI use in education. This justifies the current study to explore how AI is being used in instructional facilitation within Tanzanian adult education institutions.

A study done by Mfaume and Bhalalusesa (2024) in Tanzania on AI use in adult education institutions used a qualitative case study design. Data were collected through interviews with instructors and administrators. The findings showed that instructors mainly used AI for simple tasks such as summarising content and preparing notes rather than full instructional integration due to limited training and weak institutional support. The study recommended strengthening ICT training and policy frameworks. This creates a need for the current study to assess the extent and nature of AI use in instructional facilitation practices.

Research Gap

Although several studies have been conducted, particularly in developed countries, findings indicate that Artificial Intelligence (AI) technologies have been widely accepted and effectively utilized by instructors in instructional facilitation, despite various challenges. In Tanzania, as in other contexts, efforts have been made to formalize and integrate AI technologies into the education system. However, empirical studies remain limited, especially in the Coast Region, where the level of instructors' preparedness to effectively use Artificial Intelligence in instructional facilitation is not clearly established. Most existing studies emphasize the benefits of AI in education, while paying limited attention to instructors' readiness and the contextual challenges that influence effective adoption. In the Tanzanian context, issues such as inadequate ICT infrastructure, limited digital literacy, and weak institutional investment continue to affect effective integration of AI in teaching and learning processes. These challenges often create uncertainty and confusion among instructors regarding how best to integrate AI tools into their instructional practices, thereby making it difficult to clearly determine their level of readiness.

3. Methodology

3.1 Research Design

The convergent parallel mixed methods design was adopted. This is because it allows the researcher to collect both quantitative and qualitative data simultaneously, analyse them separately, and then merge the results for comparison and interpretation (Clark, 2017). According to Creswell and Clark (2018), this design is appropriate when a researcher seeks to obtain a comprehensive understanding of a research problem by integrating numerical trends with in-depth qualitative

insights. This design is particularly suitable for this study because instructors' readiness for Artificial Intelligence adoption is a complex phenomenon that requires both measurable data .

3.2 Area of Study

The study was conducted at the Institute of Adult Education in the Coast Region of Tanzania, where AI tools are increasingly being introduced into instructional facilitation.

3.3 Population and Sampling

A population is the entire group of individuals, objects, or events that share common characteristics and are the focus of a scientific study (Ahmad, et al, 2023). The study population included instructors, adult learners, and academic administrators. These groups engaged separately in data collection because they are directly involved in the use of Artificial Intelligence in educational activities. They are also the ones most affected by challenges such as inadequate ICT infrastructure, lack of equipment, and limited knowledge on the appropriate use of Artificial Intelligence in academic practices. Therefore, their involvement was provided accurate and relevant information that was adequately answer the research questions and enhance a deeper understanding of the phenomenon under investigation.

3.4 Sample Size

According to Kothari and Garg (2014), a sample size is a selected group derived from a given population for undertaking a study. In this study, 80 respondents out of 101 were selected from the selected Centre of Adult Education. The sample size is based on Krejcie and Morgan's formula, as established in 1970, which is used to determine the sample size as indicated below.

$Sz = P \div [1+ P (d^2)]$

Where:

Sz = Sample size

P = Population

d = Degree of accuracy (0.05)

$Sz = 101 \div [1+101(0.05)^2]$

$101 \div 102 (0\ 05)^2$

$101 \div 1+0.255= 1.2525$

$101 \div 1.2525$

$Sz=80$

From the above expression, the respondents were 80, as summarized in the Table.

Table 1: Composition of Sample Size

Category of population	Per cent (%)	Total
Learners	68.75	55
instructors	30	24
Academic administration	1.25	01
Total	**100**	**80**

3.5 Sampling Procedures

The study used a mixed sampling approach in which both probability and non-probability techniques were applied. For the quantitative strand, simple random (or cluster) sampling was used to select 61 participants from instructors, adult learners, and academic administrators, ensuring that every member of the population had an equal chance of being included and that the sample was representative. For the qualitative strand, purposive sampling was used to select 19 participants (15 instructors and 4 academic administrators, including selected knowledgeable adult learners) who had direct experience with Artificial Intelligence in instructional facilitation. This combination allowed the study to obtain both representative quantitative data and rich qualitative insights, which is appropriate for mixed methods research as it enhances both breadth and depth of understanding (Creswell & Plano Clark, 2018).

3.6 Data Collection Methods

Data were collected using structured questionnaires, in-depth interviews, and focus group discussions. In the case of questionnaires, questions were prepared on paper and administered to respondents, who were required to read and select the most appropriate answers by filling in the provided sections, thereby generating quantitative data for the study. In addition, in-depth interview guides containing both open-ended and probing questions were used to collect detailed qualitative information from selected participants. The interviews allowed respondents to freely express their experiences and views, enabling the researcher to obtain in-depth responses relevant to the study objectives.

3.7 Data Analysis

Data for this study were analysed both qualitatively and quantitatively. As for qualitative data, the data that were collected in the field were analysed through thematic analysis. In this study, the analysis involved the extraction of the relevant data that collected from the field and then compressed, organised and assembled. Finally, conclusion was drawn and verified. Furthermore, the collected data were coded and categorised by the research objectives, and the respondents' arguments were presented through direct verbatim quotations.

On the other hand, the quantitative data from questionnaires were analysed with the help of the Statistical Package for Social Sciences (SPSS), version 29. The collected data were subjected to descriptive analysis with interpretation that was given in terms of frequencies, percentages. Finally, both qualitative and quantitative findings were mixed together during the presentation, analysis and discussion of the findings in order to corroborate the results.

3.8 Research Procedure

This study followed a systematic sequence of steps to ensure proper data collection, analysis, and interpretation in line with the research objectives. First, the researcher obtained ethical clearance from the relevant authorities of the Institute of Adult Education and secured permission from the Coast Centre administration. After approval, the researcher identified the study population, which included instructors, adult learners, and academic administrators. Second, sampling procedures were applied. A cluster sampling technique was used to select the study area and participants for the quantitative phase, while purposive sampling was used to select key informants for the qualitative phase. The selected participants were then informed about the purpose of the study, and informed consent was obtained before data collection began.

Third, data were collected using structured questionnaires, in-depth interviews, and focus group discussions. Questionnaires were administered to respondents to obtain quantitative data, while interviews and discussions were conducted to gather qualitative insights. The researcher ensured that data collection tools were clear, consistent, and aligned with the research objectives. Fourth, after data collection, the researcher checked all instruments for completeness and accuracy. Quantitative data were coded and entered into SPSS Version 29 for analysis, where descriptive statistics such as frequencies and percentages were generated. Qualitative data were transcribed, organized, and analyzed using content analysis to identify key themes. Finally, the results from both quantitative and qualitative analyses were integrated during interpretation and discussion to provide a comprehensive understanding of instructors' readiness for Artificial Intelligence adoption in instructional facilitation.

3.9 Validity and Reliability

Validity and reliability increase transparency and decrease opportunities to insert researcher bias in qualitative research (Singh, 2014). For all secondary data, a detailed assessment of reliability and validity involves an appraisal of methods used to collect data (Saunders et al., 2009). These provide a good relation to interpret scores from psychometric instruments (e.g., symptom scales, questionnaires, education tests, and observer ratings) used in clinical practice, research, education, and administration (Cook & Beckman, 2006). In this study, the validity of the questionnaire was ensured through a double translation and back-translation procedure. In addition, instructors and learners with a strong background in adult education and information technology were consulted to review the instrument and confirm that the items were clear, relevant, and appropriate for measuring the intended variables.

Also, the issue of reliability was considered. The reliability refers to a measurement that supplies consistent results with equal values (Blumberg et al., 2005). It measures the consistency, precision, repeatability, and trustworthiness of research. It indicates the extent to which it is without bias (error-free), and hence ensures consistent measurement across time and the various items in the instruments (the observed scores). In this study, the reliability of the tools was determined by test re-test method. The same questionnaire was administered twice to the same group of instructors, academician and Learners before the real data collection process. After pre-testing, Cronbach's Alpha coefficient was calculated to establish the level of consistency of the items in the questionnaire. The responses indicated that the reliability value was 0.89, which ranged from 0.80 to 0.90, which implied that there was an adequate internal consistency. If Cronbach's Alpha that is higher than 0.70 indicates that the test was strong (Mhando, 2023). Therefore, the internal reliability coefficients of all measures were satisfactory and accepted.

3.10 Ethical Considerations

Ethical clearance for this study was secured from the relevant authorities of the Institute of Adult Education prior to the commencement of data collection. In addition, formal permission was obtained from the Centre Administration in the Coast Region to allow access to participants and facilitate the research process. All participants were approached on a voluntary basis, and the purpose of the study was clearly explained to them before participation. Written or verbal informed consent was obtained from each respondent prior to data

collection. Participants were assured that their identities would remain anonymous and that all information provided would be treated with strict confidentiality and used solely for academic purposes. Furthermore, participants were informed of their right to decline participation or withdraw from the study at any stage without any form of penalty or adverse consequences. Throughout the study, key ethical principles, including respect for persons, privacy, and protection of participant information, were strictly observed.

4. Results and Discussion

The researcher aimed to examine the level of instructors' readiness for Artificial Intelligence adoption in instructional facilitation. Data were analysed using SPSS Version 29, where descriptive statistics were generated in terms of frequencies and percentages and presented using tables and charts for clearer interpretation. The data presented in the table below.

Table 2: Instructors' Readiness for Artificial Intelligence Adoption (n = 61)

Response Category	Frequency (f)	percentage (%)
Strongly Agree	9	15%
Neutral	31	50%
Strongly Disagree	3	5%
Not specified categories	18	30%
Total	**61**	**100%**

Source: field study 2026

The table shows that half of the respondents (50%) were neutral regarding instructors' readiness for Artificial Intelligence adoption, indicating a moderate level of preparedness. A smaller proportion (15%) strongly agreed that instructors were ready to use Artificial Intelligence, reflecting a positive attitude. However, only 5% strongly disagreed, indicating minimal resistance to AI adoption. Overall, the results suggest that instructors generally have a positive but moderate readiness toward Artificial Intelligence integration in instructional facilitation.

On the other hand, the findings from the in-depth interviews substantively corroborated the quantitative results. The majority of participants underscored that instructors possessed a limited conceptual and practical understanding of Artificial Intelligence technologies, a factor that significantly shaped their level of readiness for adoption and integration into instructional practices.

During the interviews, one instructor articulated this perspective as follows:

> I find it quite challenging to effectively use this technology because, to begin with, our level of knowledge and exposure to Artificial Intelligence is still very limited. Due to this lack of adequate understanding and training, my perception of the technology remains uncertain, and my readiness to fully integrate and apply it in instructional activities is relatively low. Consequently, I feel less confident in using it meaningfully within my teaching practice"

This narrative implies that inadequate exposure, insufficient training, and limited technical literacy substantially constrain instructors' willingness and preparedness to meaningfully adopt Artificial Intelligence in their pedagogical practices.

Similarly, an adult learner observed:

> Our instructors are highly inclined to simplify teaching processes through technology; however, their acceptance and familiarity with Artificial Intelligence remains limited, as even guiding us on how to use it is challenging. Nevertheless, I believe that as they continue to use it, they will gradually become more experienced and skilled, eventually enabling them to effectively transfer their knowledge to us.

This assertion suggests that although instructors demonstrate a favourable disposition towards technological integration, their actual readiness remains constrained by limited familiarity, inadequate experiential engagement, and insufficient competence in Artificial Intelligence tools. Nonetheless, there is an optimistic expectation that sustained exposure and practice may progressively enhance their proficiency and pedagogical effectiveness.

The findings of this study reveal that instructors' readiness for Artificial Intelligence adoption is generally moderate, with positive attitudes but limited technical competence. This aligns with the findings of Chan and Hu (2023), who reported that instructors often show willingness to adopt AI technologies but lack sufficient pedagogical and technical readiness for full integration. Similarly, the results correspond with the Technology Acceptance Model developed by Fred Davis (1989), which emphasizes that technology adoption is influenced by perceived usefulness and perceived ease of use. In this study, instructors' positive attitudes reflect perceived usefulness of AI, while their limited readiness reflects low perceived ease of use due to inadequate training and experience. Furthermore, the findings are consistent with Ayanwale et al. (2024), who observed that readiness for emerging technologies in education is often constrained by insufficient ICT infrastructure and limited professional development opportunities.

Extent to Which Artificial Intelligence is Used in Instructional Facilitation Practices

Table 3: Extent to Which Artificial Intelligence is Used in Instructional Facilitation Practices (n = 61)

Response Category	Frequency (f)	Percentage (%)
Strongly Agree	55	90%
Neutral	4	7%
Disagree	1	2%
No Response	1	1%
Total	**61**	**100%**

Source: Field data 2026

The findings presented in Table 2 indicate that the majority of respondents strongly acknowledged the extensive use of Artificial Intelligence technologies in instructional facilitation practices. Specifically, 55 respondents, equivalent to 90%, strongly agreed that Artificial Intelligence was highly utilized in academic and instructional activities within the institution. This suggests that instructors increasingly rely on Artificial Intelligence tools to support teaching, lesson preparation, content generation, assessment, and access to academic materials.

Furthermore, 4 respondents (7%) remained neutral, indicating uncertainty or moderate perception regarding the extent of Artificial Intelligence use in instructional facilitation. In addition, only 1 respondent (2%) disagreed with the statement, while another 1 respondent (1%) did not provide any response.

On the other hand, qualitative findings from in-depth interviews strongly supported the quantitative results. Most participants, particularly instructors and students, reported frequent use of Artificial Intelligence technologies in academic and instructional activities.

During the interviews, one instructor stated: *"I extensively use Artificial Intelligence to simplify many of my academic responsibilities, particularly in preparing lecture notes, generating examination questions, solving complex calculations, and broadening my understanding of different subject matters."*

This response indicates that Artificial Intelligence technologies are increasingly being integrated into instructional preparation and academic problem-solving activities.

Similarly, an academic administrator explained:

"Artificial Intelligence has greatly simplified access to academic materials within our institution. Previously, one could spend large amounts of internet bundles searching for information and still end up with irrelevant materials. However, with AI technologies, one simply enters a question or specific need and immediately obtains the required information efficiently."

This statement suggests that Artificial Intelligence has improved efficiency, accessibility of learning materials, and time management within the institution.

Furthermore, during interviews with students, one participant remarked:

> Artificial Intelligence has become a major support system for us because we use it to search for answers, complete assignments, and sometimes even as a source of emotional and academic guidance whenever we feel stressed by studies. It helps us psychologically by providing strategies and support that reduce academic pressure.

This finding demonstrates that the use of Artificial Intelligence extends beyond academic support into emotional and psychological assistance among learners.

In addition, one instructor concluded by stating: *…" we continue exploring and using it in preparing modules, and teaching guidelines. This has helped save time, reduce operational costs, and provide instructors with greater flexibility to accomplish other institutional responsibilities…".*

The above findings clearly indicate that Artificial Intelligence technologies have become highly beneficial within adult education institutions, particularly in the Coast Region of Tanzania. Their widespread use among instructors and learners has significantly simplified academic activities such as searching for learning materials, preparing instructional content, saving time, enhancing knowledge acquisition, and increasing exposure to modern technological practices.

The findings of this study are consistent with those of Holmes et al. (2022), who found that Artificial Intelligence technologies are increasingly used in instructional facilitation to support lesson preparation, content generation, assessment, and personalized learning. Similarly, the present study demonstrates that instructors use Artificial Intelligence for preparing notes, generating questions, and improving teaching efficiency.

The findings also correspond with Dwivedi et al. (2023), who observed that Artificial Intelligence use in educational settings is often informal and individually driven rather than institutionally coordinated. In the current study, instructors acknowledged extensive use of AI despite limited formal training and inadequate institutional guidance.

Moreover, the findings support the Technology Acceptance Model developed by Fred Davis (1989). According to the model, technology adoption is influenced by perceived usefulness and perceived ease of use. The widespread use of Artificial Intelligence observed in this study suggests that instructors and learners perceive AI technologies as highly useful in simplifying academic tasks, saving time, improving access to information, and enhancing learning experiences. These positive perceptions appear to motivate continued adoption and use of Artificial Intelligence despite existing challenges related to technical knowledge and institutional support. Overall, the findings indicate that Artificial Intelligence technologies are widely utilized in instructional facilitation practices within the Institute of Adult Education, Coast Region. However, the adoption process remains largely experience-based and informal, highlighting the need for structured institutional support, training programmes, and clear policy frameworks to ensure effective and ethical integration of Artificial Intelligence in education.

5. Conclusion and Recommendations

5.1 Conclusion

The study concludes that Artificial Intelligence technologies are increasingly used in instructional facilitation at the Institute of Adult Education, Coast Region. The findings revealed that instructors and learners use Artificial Intelligence in preparing notes, searching for learning materials, generating academic content, solving academic tasks, and simplifying teaching and learning activities. The study further found that most instructors demonstrated positive attitudes towards Artificial Intelligence despite having moderate readiness and limited formal training in its use. The study identified several advantages associated with the use of Artificial Intelligence, including saving time, reducing workload, improving access to academic materials, and simplifying instructional activities.

However, the findings also revealed some limitations affecting effective use of Artificial Intelligence, such as limited knowledge and experience among instructors, inadequate training, and challenges in guiding learners on proper use of the technology. The findings imply that Artificial Intelligence has become an important academic support tool within the institution and that its use is gradually increasing among instructors and learners. The continued use of Artificial Intelligence may help instructors and learners gain more experience and improve their understanding of the technology over time.

5.2 Recommendations

Therefore, the study recommended that the government should invest in modern ICT infrastructure, including adequate computers and reliable internet connectivity, to support effective use of Artificial Intelligence in education. The study also recommends continuous professional training and exposure opportunities for instructors to improve their knowledge and practical skills in Artificial Intelligence adoption. These efforts may enhance instructors' readiness and strengthen effective integration of Artificial Intelligence in instructional facilitation.

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