'KNOWLEDGE AND UNDERSTANDING OF ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION STUDIES'

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ABSTRACT

Artificial Intelligence (AI) is transforming higher education by enhancing student learning experience, improving academic performances and increasing efficiency. Technologies are making the ICT devices solve cognitive tasks as ahuman would have done by using real-time data. Such a giant leap in digital technologies haschanged the way people learn. In the study, knowledge and understanding of Artificial Intelligencein education were explored to a class of learners in higher education institution. The studyemployed a survey questionnaire in data collection to gather data of the students, which wasanalysed used descriptive statistics. The data collected and analysed as part of an action studyprocess to allow deployment of AI toll for learning in the classroom. The findings show thatstudents have access to smart devices capable of AI technology integration, however, they are notusing them for learning purposes. In addition, thefindings reveal that students assert the importance of having Artificial Intelligence in educationand ready to use it in learning and teaching process, however, they have trust inArtificial intelligence being used assess their academic performance.

Keywords: Artificial Intelligence, Active Learning, Higher Education

INTRODUCTION

Artificial Intelligence (AI) technologies have changed the way learners are interacting withinstructional activities in various educational settings. Learning has been shifted from instructor-led to the interaction of AI-powered devices and learners are no longer bound to traditionalclassrooms (Chassignol, et al. 2018).

AI has managed to remove the one size fits all education by personalizing the curriculum contentto the individual student after analysing the strength and weaknesses and make the contentadaptive. AI technologies in learning provide immediate constructive feedback on how a learnercan close the gap of knowledge from what the learner knows to where is supposed to be (Klutka,et al., 2018; W. Lynch, 2017; Martin, 2018). A good example is the Pearson (2019) productMyLab that is making learning easy by highlighting mistakes of learners, assess them and providesuggestion and personalize activities based on the performance level.

LITERATURE REVIEW

Integration of emerging technologies has improved our education with technological revolutionhappening every century. Education has been embracing the revolutions that have improvedpedagogy (Machanick, 2014), from the use of slate boards, a chalkboard to radio and television tooverhead projectors (Maribe&Twum-Darko, 2015; William, 2015). That shows how over timeeducation has been adopted technologies that facilitate and improve the process of learning, andnow AI provides the affordance that was not available before by personalizing the learning to theindividual learner and providing smart content (Haran, 2015;

Rouhiainen, 2019). Further,Sharkova (2014) emphasises that using technologies like AI in higher education ensure inclusivityand support various learning style.

AI has several definitions, Murphy (2019, p. 2) has defined Artificial Intelligence (AI) is definedas the "application of software algorithms and techniques that allow computers and machines tosimulate human perception and decision-making processes to complete tasks", in that case, AIoperates using the instructions that are coded using the certain algorithm and provided desiredoutputs. (Castelluccia et al., 2019) added that the various instructions that are coded can becombined to create a more complex system that can handle a huge amount of data.

AI provided learning personalization by taking individual abilities and focus the goal that needs tobe reached by accelerating the learning using the cognitive level of the learner (Uchehukwu, 2018),for instance, Pluralsight is using the data from learners to customize and personalize the learningand provide the learning path for every individual learner. In the 21st century, AI is relevant in oureducation as it cannot only provide the personalization of learning to individuals but also insightsto admins and teachers that can be used to make improvements of programs and educationaldecisions (Aldowah, et al. 2017; Holmes, et al.2019; Paul, 2017).

METHODOLOGY

Data in this study were collected using a survey that aimed to answer the questions raised in the study. Participants were provided with a survey to fill that had questions on knowledge of AI. Moreover, ninety six (96) survey questionnaires was provided to the institution and fifty-eight (78) students returned the filled survey. The following table describes the stream the students are.

Table 1: Demographic characteristics of the students who participated in the study

Stream	Male	Female	Total
Science	8	12	20
Commerce	9	9	18
Humanities	10	11	21
Social Sciences	9	11	19

The sample selected was year II students which provided enough reflection on the knowledge ofAI in higher education as learners have already spent one year at an institution and exposed tovarious technologies that are used for learning and teaching.

The questionnaire was distributed to the students to fill out at their own time, then returned to theresearcher after filling them. The students' questionnaire comprised of 15 questions from 8 itemsof which intended to get the students prior experience to ICT usage in learning activities, understanding of students' knowledge on AI and general perception on the role and abilities of AItechnology in teaching in learning. The data collected were analysed by descriptive statistics using to get the frequencies (Cohen, et al., 2018). The analysis of data collected usedto generalizes the results to other institutions of higher learning.

FINDINGS AND ANALYSIS

In the study, the data revealed that basic ICT technology was used in the classroom in the processof teaching and learning. However, most of the technology that was used was based on the deliveryfrom the teacher to the learners such as projectors to display presentations and

computers for lessonpreparation. Further, there was no evidence of using any Artificial intelligence tool in the class.The survey collected information about ownership of devices that AI technology has beenintegrated and the overall knowledge of students, as detailed below.

Students' ownership of the smart deviceTo integrate AI in teaching and learning, smart devices are one of the necessities of students tohave, the student was seemingly using a collective of smart devices. The ownership of smartdevices suggested that knowingly or unknowingly they have once interacted with smart devicesduring their studies when using the devices. The class was using smart devices in large number,the collection of statistics of smart devices usage, it showed that more than eighty per cent of theclass is having a smartphone and nearly twenty per cent are having laptops as reflected in the tablebelow.

Table 2: Students owned smart devices (n = 78)

Ownership	Frequency	Percent
Smartphone	69	88%
Laptop	15	19%
Tablet	9	12%

Despite the class owning smart devices (smartphone by 88% and personal computers by 19%), they were not used in teaching and learning activities. However, the Tanzania ICT policy hasallowed the use of ICT in learning and teaching, smart devices are not utilised in higher education.Further, the curriculum for teachers' colleges, does not explicitly say about how ICT must be usedduring teaching and learning and ICT as the subject has been given more weight than using ICTin teaching and learning. Therefore, using smart devices (smartphones or computers) in teachingand learning in class is the tutors own initiative.

During the study, students were asked if they are aware of how smart devices operates and whetherthey have knowledge of artificial intelligence. The question aimed to get the overall understandingof the students' knowledge and their experiences interacting with the devices that are supposedlyhaving artificial intelligent apps.

Table 3: Awareness of student teachers on how smart device operates and prior knowledge of what AI is (n=78)

Response	Frequency (%)
Awareness of AI and how it operates	78%
Prior knowledge of what AI is	25%

The table indicates that students have been interacting with smart devices in their normal routines (from the data that more than 85% have a smartphone and use applications that have artificialintelligence capabilities). Interaction with smart devices gave them the awareness of knowing howAI operates. However, the response suggests that the learners are using devices with AIapplications but not conscious that it was AI and how it works and its integration in education.

The students who participated in this study perceive that having AI in education as an importantstep in improving education. The students in large per cent believe that the results that are providedwith AI technologies can improve the learning and teaching process in the

classroom. When askedabout the importance, nearly seventy per cent of the class assert that will be ready to trust thedecision making that is made by AI on their learning progress.

Table 4: Students view on the importance of AI, trust, and acceptance of using AI in academic settings (n=78)

Response	Strongly agree	Agree	Disagree	Strongly Disagree
Importance	58 %	42 %	-	-
Trust	33%	49%	16%	2 %
Acceptance	31%	47%	15 %	7 %

The result shows that implementing AI technologies in education will help students and they arewelcoming the technology and can interact with it in learning. However, when implementing theintegration of AI technologies in learning and teaching to keep in consideration the cost ofconnectivity to the internet and how learners can access it around the school environment. Further,the students are interested in being assessed with AI technologies in their learning though theysee it as important in their learning.

CONCLUSION

The students in higher education are having access to smart devices that allow the AI technologies to be integrated for learning and teaching. The possession of devices is supported by the ICT policy (2016) that states what crucial role ICT can play to improve education and usage of emerging technologies. However, no AI technology was used for teaching and learning assessment of learners. The infrastructure for internet connectivity and the cost of the internet (Cable, 2018) are the challenges that in large part hindered the full integration of Ai in teaching and learning.

REFERENCES

1. Aldowah, H., UlRehman, S., Ghazal, S., &Naufal Umar, I. (2017). Internet of Things in Higher

2. Education: A Study on Future Learning. Journal of Physics: Conference Series, 892, 012017.

3. Holmes, W., Bialik, M., &Fadel, C. (2019). Artificial Intelligence in Education: Promise and Implications for Teaching and Learning.CCR.

4. Klutka, J., Ackerly, N., & Magda, A. (2018). Artificial Intelligence in Higher Education: CurrentUses and Future Applications.Wiley.

5. Murphy, R. F. (2019). Artificial Intelligence Applications to Support K-12 Teachers and Teaching:A Review of Promising Applications, Opportunities, and Challenges. 20.

6. Rouhiainen, L. (2019). How AI and Data Could Personalize Higher Education. Retrieved November 20, 2019, from https://hbr.org/2019/10/how-ai-and-data-could-personalize- higher-education.