ჰუმანიტარული და სოციალური მეცნიერებების მიმართულება

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AI AND PERSONALIZED LEARNING IN HIGHER EDUCATION INSTRUCTIONS IN GEORGIA

Abstract

In recent times, there has been a rapid and significant advancement in technology. Computers have gained increased processing power, the internet has been introduced, and researchers have made significant strides in developing AI algorithms. Among these advancements, ChatGPT has emerged as a prominent figure in the realm of artificial intelligence, finding applications in various aspects of life, with education being a notable example. Utilized by millions, this AI chatbot excels in responding to queries, narrating stories, generating web code, and grasping highly intricate concepts.

This technological progress is poised to bring about a substantial transformation in global workforces. Simultaneously, nations are focusing on their education systems to foster high-level proficiency in AI—a crucial requirement not only for survival but for thriving in the midst of the ongoing fifth industrial revolution.

AI can greatly benefit youngsters in education, particularly through the promotion of personalized learning. It places the learner at the core of the education system. This approach goes beyond traditional concepts of differentiation (tailoring teaching to individual learning preferences) and individualization (adjusting teaching pace to different learning needs). It extends to connecting with the learner's interests and experiences, aiming to meet the unique needs, abilities, and interests of each student.

The paper presents the study carried out from May to July 2023, encompassing both private and state higher education institutions in Georgia. The principal aim of this survey was to acquire valuable insights into the application and utilization of artificial intelligence within the educational framework.

Keywords: artificial intelligence, education, personalized learning.

Introduction

In the subsequent decades, technology is the engine that drives human society's growth. The emergence of a new technology, whether it is the steam engine, electrical technology, computer technology, or mobile communication technology, has inevitably driven revolutionary changes in human

existence, work, and learning in the ongoing process of human society. Without a doubt, technological innovation and advancement will eventually result in changes in the educational process and educational ecosystem.

Recently, technological progress has surged exponentially. Computers became more powerful, the internet was introduced, and researchers achieved breakthroughs in AI algorithms. ChatGPT has swiftly become as artificial intelligence's "golden child" in many fields of life and education is one them. The AI chatbot, which is used by millions, can answer queries, tell tales, develop web code, and even conceptualize extremely complex concepts. The AI tool, created by OpenAI, has undergone several alterations since its first release. While there is a free version, there are also premium versions called as ChatGPT Plus and ChatGPT Enterprise.

Global workforces stand at the brink of a substantial transformation. Concurrently, nations are turning to their education systems to cultivate top-tier AI proficiency, essential for not just enduring but flourishing in the midst of the fifth industrial revolution.

Literature Review

UNESCO, which is entrusted to lead and coordinate the Education 2030 Agenda starts its publication on AI and education: guidance for policy-makers with these words, "Artificial Intelligence (AI) has the potential to address some of the biggest challenges in education today, innovate teaching and learning practices, and ultimately accelerate the progress towards SDG 4. However, these rapid technological developments inevitably bring multiple risks and challenges, which have so far outpaced policy debates and regulatory frameworks."[1]

According to Handbook of Education Policy Studies, technological innovation and advancement are altering the working style, which was founded in the Industrial Revolution on the mastery of knowledge and the competency of skills. "Consequently, artificial intelligence has replaced human beings in a range of fields to perform numerous procedural and repetitive tasks, and the future work for human beings will be more complex tasks involving mentoring and managing machines" (Guorui & Popkewitz, 2020).

Artificial intelligence (AI) has been in existence since the inception of computers in the 1950s. The initial visionaries aspired to create 'computer brains' capable of undertaking tasks akin to human cognitive functions, like playing chess or translating languages. However, the anticipation that AI would swiftly attain human-level intelligence was not realized, leading to a decline in enthusiasm for AI.[2]

The unequivocal impact of artificial intelligence on education is undeniable, reshaping the educational landscape in schools and universities, influencing learning and teaching methodologies, as well as administrative systems. Participants in the educational sphere are extensively leveraging artificial intelligence systems, enhancing the efficiency of their endeavors, managing and processing timely data, conducting research, and facilitating an inclusive teaching environment.

While universities are poised to play a pivotal role, they will also engage in collaboration and heightened competition with emerging models like bootcamps and workforce accelerators. These alternatives offer swifter, more cost-effective, and hands-on programs, resembling apprenticeships, often in partnership with employers worldwide. As Ghavifekr and Rosdy (2015) consider youngsters are at ease using technology and learn better in a technology-based environment, the subject of ICT integration in schools, particularly in the classroom, is essential.

[1] https://unesdoc.unesco.org/ark:/48223/pf0000376709?locale=en
[2] https://www.sciencefocus.com/future-technology/artificial-intelligence-ai

More personalized learning

How can AI benefit youngsters in education? One answer can be to use it more to promote personalized learning. According to Leadbetter, "Personalized learning is putting the learner at the heart of the education system" (Leadbetter, 2008). Personalised learning entails extending the educational concepts of differentiation (teaching tailored to the learning preferences of different learners) and individualisation (teaching paced to the learning needs of different learners) to connect to the learner's interests and experiences, as well as meeting the needs, abilities, and interests of each student through tailoring curriculum and learning activities to the individual. A personalized learning environment's ultimate goal is to develop an educational system that reacts directly to the unique requirements of people rather than imposing a 'one size fits all' paradigm on pupils (Bates, 2014; Williams, 2013).

A case in point is the MyEnglishLab platform by Pearson, presently implemented in various private and state higher education institutions for English language instruction in Georgian universities. This platform streamlines the assessment of students' homework, saving significant lecture time. The "Smart Platform" not only evaluates assignments but also offers additional information, such as rules and examples, addressing mistakes and allowing students the opportunity for corrections. This exemplifies how AI is not just a tool but a transformative force in the educational realm.

Research Methods

The paper outlines a study conducted between May and July 2023 across private and state higher education institutions in Georgia. The primary objective of the study was to garner insights into the utilization of artificial intelligence in the educational landscape. Key inquiries included assessing students' proficiency and application of digital skills in the learning process and gauging the extent to which AI contributes to personalized learning, improved academic outcomes, inclusivity, and academic integrity.

A total of 105 students took part in the confidential survey. The research employed a quantitative survey approach utilizing Google Forms. The survey questionnaire was distributed among students from both state and private universities in Georgia.

Table 1
Number of participants according to the Universities

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Akakai Tsereteli State University https://www.atsu.edu.ge/	42
Shota Meskhia Teaching State University of Zugdidi http://www.zssu.ge/zssu2/en	16
New Higher Education Institute - https://newuni.edu.ge/	12
Alte University - https://alte.edu.ge/	13
David Agmashenebeli University of Georgia - https://sdasu.edu.ge/	6
Sulkhan-Saba Orbeliani University - https://www.sabauni.edu.ge/	15

Universities	Number of participants

Among participants 74% were Bachelor degree students and 26% master students.

Table 2
Does artificial intelligence contribute to the personalization of learning (personalized learning/ teaching)?
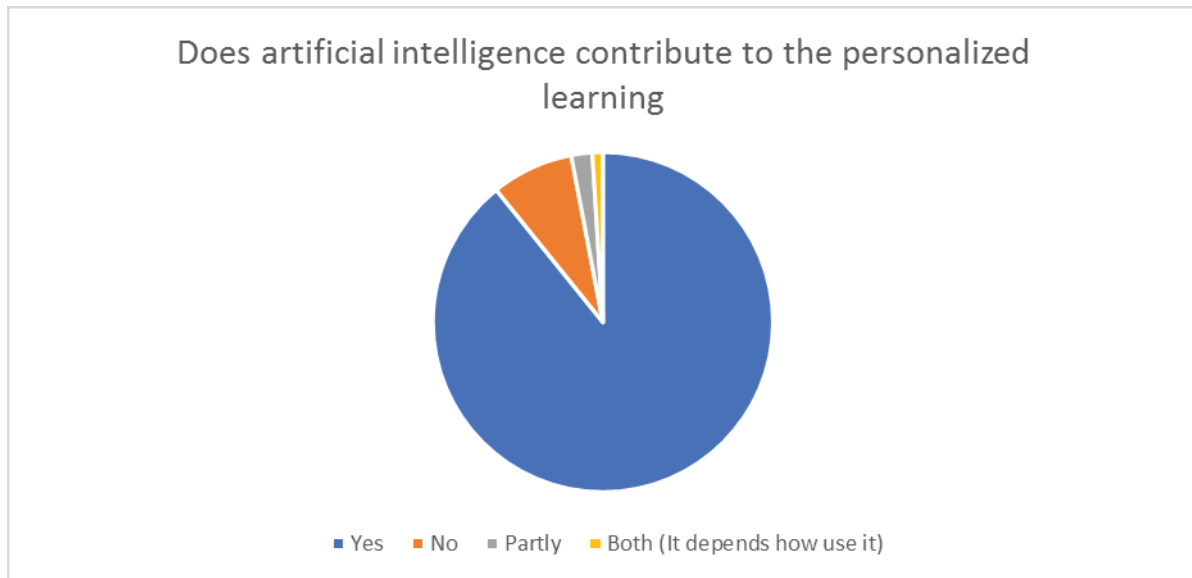
The data presented in the chart unequivocally indicates that a substantial majority of students, exceeding 89%, hold the view that artificial intelligence exerts positive effects on personalized learning. In stark contrast, a mere approximate 8% of respondents express the opinion that AI lacks a direct correlation with personalized learning. This stark divergence in perspectives underscores a consensus among the majority regarding the advantageous impact of artificial intelligence on tailored educational experiences. The discernible consensus suggests a widespread acknowledgment of the discernible benefits associated with integrating artificial intelligence into personalized learning frameworks.

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