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Using Artificial Intelligence in the Improvement of Reading Comprehension

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A B S T R A C T
The advent of artificial intelligence (AI) has transformed various facets of daily life, including how individuals approach reading and comprehension. Yet despite coming across the word AI frequently, people do not have full understanding of what actually it is .This paper presents general information about the origins and functions of AI and its effectiveness in the enhancement of university students' reading comprehension .The study focused on reading and comprehension in English language , and involved an experimental group of students ,some of whom used artificial intelligence while some of whom did not know how it works .By conducting a questionnaire and analyzing sample test results, this paper provides a practical and reliable guide of integrating AI technology into student' daily learning.

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Introduction

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 (Wiyasa,2024). In this century,in which people from different countries should connect ,and be in touch with each other ,the importance of learning international languages , especially, English has become a crucial part of life. There are over 750 million worldwide who people speak English as a foreign language (EFL). English as a second language accounts for roughly 375 million English language learners according to the British Council.

Reading and comprehending text is a critical skill central to academic success and lifelong learning (National Reading Panel, 2000), thus should be developed well in each student. Students who struggle with reading comprehension face numerous challenges, including limited access to information, reduced academic opportunities, and lower lifetime earning potential (Kirsch et al., 2011). Reading comprehension occurs when words on a page are not just mere words but thoughts and ideas. Comprehension makes reading enjoyable, fun, and informative. Moreover, comprehending text better makes it easier for learners to understand the deep meanings and summarize information.

In recent years, advances in artificial intelligence (AI) and natural language processing (NLP) have led to the development of personalized learning platforms that can adapt to the needs and abilities of each student (Muhammad.T.H.2024).

AI is a system that is capable of doing complex tasks that were usually done only by humans. Over past few years, the functions and abilities of artificial intelligence have advanced.

AI technology, like many others skills, is influencing as well as reshaping the way students get educational training to enhance their reading comprehension by enabling personalized learning experiences, where AI-driven systems analyze individual reading patterns and adapt content to suit the learner's needs and preferences (Luckin et al., 2016). Integrating AI into reading education offers a unique

opportunity to improve reading proficiency among students, enabling them to access and comprehend increasingly complex texts, improve academic performance, and broaden their knowledge and intellectual horizons (Muhammad.T.H.2024) . By giving real-time feedback and providing specialized guideline, artificial intelligence offers wide range of opportunities for its users.

Overall, this paper presents an overview of AI development and the role of AI based personalized technology in the improvement of foreign language learners reading literacy. In this paper potential benefits and some notable drawbacks of the integration of AI and personalized learning platforms into everyday life will be scrutinized.

Methods

Participants

This study investigated the significance of AI based personalized tools on reading comprehension among University students in Samarkand. It involved 17 students from diverse backgrounds , who answered a questionnaire , and were given a sample test to compare results with their questionnaire answers. First , five questions which needed to be responded with Yes or No answers were distributed for each student . Then the persantage of positive and negatives responses were calculated . Conducted in a small group of institute in a natural setting, the study involved an assessment using standardized tests. By analyzing all gained data together with clear statistics, we tried to provide confidential and reliable information, to ensure participants motivation as well as engagement.

Procedure

AI is the study of how human brain think, learn, decide, and work, when it tries to solve problems. It was discovered because of the historic philosophy, imaginations, and demonstrations by some of the leading scientists, researchers of old times. (Bhbosale,S. 2020). Artificial Intelligence is a very broad interdisciplinary field which has roots in and intersects with many domains, not only all the computing disciplines, but also mathematics, linguistics, psychology, neuroscience, mechanical engineering, statistics, economics, control theory and cybernetics, philosophy, and many others. (Gheorghe.T. 2012)

There is widespread recognition that AI can and will play a significant role in education at large (Venkat.S, Hemavathi .M. 2021). AI systems can adapt content to accommodate different learning styles and paces, ensuring a more individualized approach to education (Johnson, 2018). Students who utilize AI-driven programs and platforms for learning and completing tasks are less likely to experience boredom, as AI can dynamically tailor content to align precisely with each student's proficiency level. Beyond simply offering personalized tools, artificial intelligence introduces an interactive and engaging dimension to education, allowing learners to explore materials in innovative ways that enhance enjoyment and retention. By integrating AI, students are not only kept motivated but are also empowered to engage in a more stimulating, adaptive learning environment.

This study conducted a questionnaire aimed at assessing students' understanding of AI’s functionality and gathering their perspectives on its significance in enhancing reading comprehension. The questionnaire comprises five questions, addressing the aforementioned aspects: the nature of AI, its value in learning, potential drawbacks, and whether students have incorporated AI tools in their own educational experiences.

In addition to the questionnaire, participants completed a sample test, after which their test results were analyzed in relation to their survey responses. The test materials were sourced from IELTS Buddy (https://www.ieltsbuddy.com/), a platform designed to help students prepare for the IELTS exam by familiarizing them with question formats and effective answering strategies. This site offers various question types, among which true/false/not given questions were specifically chosen for this study, as this format demands a high level of reading comprehension skill to achieve success.

Instrument

To assess the comprehension of students, True/False/not given questions were used since they are valuable for enhancing reading comprehension by requiring students to engage in close reading, develop critical thinking, and carefully interpret the text. To answer correctly, students must distinguish between

explicitly stated information, implied ideas, and information that is absent from the text. This process encourages them to identify main ideas, recognize nuances, and differentiate between factual content and assumptions. As a result, this question format helps students improve their ability to read analytically, which is essential for a deeper understanding of complex texts.

Analysis

Regarding the data analysis, table description to demonstrate the questionnaire results with percentage and statistics in a pie chart were used.

In terms of ethical considerations, the survey was conducted under the instruction of professional teachers of the institution and in a natural settling . The study also received approval from voluntary participants themselves and their professors. Any potential risks associated with participation in the study were minimised, and participants were provided with support and resources as needed

Results

This section presents the findings from the administered questionnaire and the experimental students' reading outcomes. The first table outlines five questions posed to the participants, along with the percentage of affirmative and negative responses. The results reveal that all respondents unanimously acknowledged the importance of reading skills; however, approximately 47% expressed concerns about their comprehension abilities, indicating they did not perceive them as sufficiently developed.

Moreover, over one-third of the participants reported utilizing AI-based programs or platforms as part of their learning experience, while simultaneously recognizing the potential drawbacks associated with artificial intelligence. When asked to identify specific disadvantages, the most frequently mentioned issues included over-reliance on technology, concerns over data privacy, the dissemination of inaccurate or unreliable information, and a potential decline in mental and cognitive development. Additionally, some participants noted frustration with receiving excessively lengthy responses to relatively simple queries.

1st table .

Item no	Questionnaire Item.	Percentage Responces of (%)	
		yes	no
1.	Do you think reading skills are important ?	100	0
2.	Is your reading comprehension developed well ?	53	47
3.	Have you ever used AI based learning programs to enhance your reading skills ?	36	64
4.	Do you think using AI have drawbacks too ,while it provides several benefits ? write some of the most crucial ones .	88	12
5.	Do you have enough information about AI and AI based programs ?	41	59

The second table shows the results of sample reading test with the comparison of questionnaire item. As we can see from the outcome, AI user, unlike other candidates, did better in reading by finding 4 correct answers out of 5 questions. While students who had no enough information of AI and had not used for developing reading understanding were able to find mostly 2 correct answers.

2nd table

No:	Participants	Average correct answers out of 5.
1.	Students who consider their reading skills well-developed	3 or 4
2.	Students who are aware of AI platforms and used in education	4
3.	Non-AI users among participants	Mostly 2
4.	Average result of all students in the group	2.5 / 50 **%**

Discussion

In recent years the importance and effectives of artificial intelligence have become the subject of researches. Reading, a fundamental skill for personal and professional development, is being reshaped by AI technologies that offer new strategies for comprehension, engagement, and personalization. (Ademola.O.E .2024) Studies have shown that personalized learning, including personalized reading platforms, can improve student learning outcomes (Cavanaugh et al., 2019). Moreover, by offering up-to-date information and diverse tools for learners, AI has the potential to transform how students enhance their comprehension skills.

In addition to this, AI provides significant advantages due to its access to an extensive range of online resources and data, enabling it to supply ample materials for practice and learning strategies.

Moreover, this study, by doing some research and conduct an experiment, also has proved that students with more usage of AI can perform better than ones who don't use such platforms.

However, several noteworthy challenges associated with integrating AI into education must be addressed, including privacy of data, possibility of relying on more, should be mentioned. Future research could investigate these factors and their potential impact on the effectiveness of the AI-based platforms. Overall, this study showed the effective use of AI and provided statistics gained through conducting questionnaire and sample testing.

Conclusions

In conclusion, based on the survey conducted among University students in a natural way, this study proved the effectiveness of artificial intelligence in the improvement of comprehension while reading texts.

Research has shown that personalized learning platforms can be highly effective in improving student outcomes in reading comprehension. The result indicates that students who have understanding of AI and students who don't have it would achieve different results," These interactive elements create a dynamic learning environment that goes beyond traditional reading practices, fostering deeper engagement with the material ", - said Ademola.O.E.

While this study provides a solid initial foundation for using AI-based personalized reading platforms, further research is needed to analyze its long-term impact. Future studies could investigate how artificial intelligence could affect student learning in a long-term, its advantages and, if it has, disadvantages.

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