

**ADVANCE SOCIAL SCIENCE ARCHIVE JOURNAL**

Available Online: <https://assajournal.com>
Vol. 5 No. 01 Jan-March 2026. Page#.3026-3035
Print ISSN: [3006-2497](https://doi.org/10.5281/zenodo.19682455) Online ISSN: [3006-2500](https://doi.org/10.5281/zenodo.19682455)
Platform & Workflow by: Open Journal Systems
<https://doi.org/10.5281/zenodo.19682455>

**Exploring the Impact of Artificial Intelligence-Based Tools on Students' Reading Motivation at the College Level****Saeed Ahmed Wadho (Corresponding Author)**

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Abdulrehman.altaf@jhah.com**Abstract**

The integration of Artificial Intelligence (AI)-based tools in education has introduced new possibilities for enhancing students' learning experiences, particularly in language development and reading engagement. This study explores the impact of AI-based tools on students' reading motivation at the college level. The research aims to examine how digital platforms, intelligent reading applications, and AI-assisted feedback systems influence students' interest, engagement, and attitudes toward reading tasks. A quantitative research design was employed, using a structured questionnaire to collect data from college students enrolled in English language courses. The collected data were analyzed using statistical techniques to determine the relationship between AI tool use and students' reading motivation. The findings indicate a significant positive relationship between AI-based tool usage and students' reading motivation. Students reported increased interest in reading activities due to interactive features, personalized feedback, and adaptive content provided by AI systems. Additionally, AI tools were found to support self-directed learning and reduce reading anxiety by allowing students to engage with texts at their own pace. However, the study also identifies challenges, including limited access to technological resources and the potential overreliance on AI tools. The results suggest that effectively integrating AI into reading instruction can enhance students' motivation and engagement when supported by appropriate pedagogical strategies. The study concludes that AI-based tools have the potential to transform reading practices in higher education and recommends their integration into teaching methodologies with proper training and institutional support.

Keywords: Artificial Intelligence, Reading Motivation, College Students, Educational Technology, Language Learning

Introduction

The current development of Artificial Intelligence (AI) has brought substantial changes to educational practices worldwide, particularly in language learning and reading instruction. AI-driven tools, including intelligent tutoring systems, adaptive reading applications, and automated feedback mechanisms, have created new opportunities to improve students' learning experiences and engagement (Crompton et al., 2024). These technologies are designed to deliver

personalized learning by enabling students to engage with texts in more interactive and meaningful ways. In higher education settings, where independent learning is strongly encouraged, AI-based technologies offer innovative ways to enhance students' reading skills and motivation.

Reading motivation is a critical factor in academic success, especially at the college level, where students are required to engage with complex texts across disciplines. Motivation influences not only the frequency of reading but also the depth of comprehension and critical engagement with texts (Guthrie & Wigfield, 2000). Students who are motivated readers tend to demonstrate higher academic achievement, improved comprehension, and greater confidence in their learning abilities. However, many college students struggle with low reading motivation due to factors such as a lack of interest, difficulty in understanding texts, and traditional teaching methods that fail to engage learners effectively.

The integration of AI-based tools into reading instruction has the potential to address these challenges by providing interactive, adaptive, and engaging learning environments. AI tools can analyze students' reading behaviors, provide instant feedback, and recommend personalized reading materials tailored to individual proficiency levels (Holmes et al., 2019). These features not only enhance students' comprehension but also foster intrinsic motivation by making reading more accessible and enjoyable. Furthermore, AI technologies support self-paced learning, enabling students to take control of their learning process and develop autonomous reading habits.

Despite these advantages, the use of AI in promoting reading motivation remains an emerging area of research, particularly in developing countries such as Pakistan. While global studies highlight the positive impact of AI on learning outcomes, there is limited empirical evidence examining its role in enhancing students' reading motivation at the college level. Additionally, the effectiveness of AI tools may vary depending on contextual factors such as technological infrastructure, digital literacy, and institutional support.

Problem Statement

Although AI-based tools offer significant potential for improving reading motivation, their implementation in college-level education remains limited and underexplored. Traditional reading instruction methods often fail to engage students effectively, leading to low motivation and poor reading habits. In many educational contexts, including Pakistan, students face challenges such as a lack of interest in reading, difficulty comprehending texts, and limited exposure to interactive learning resources.

Furthermore, existing research on AI in education primarily focuses on academic achievement and performance, with less attention given to affective factors such as motivation. There is a lack of quantitative evidence examining how AI-based tools specifically influence students' reading motivation. Additionally, disparities in access to technology and insufficient training for both teachers and students further hinder the effective integration of AI in reading instruction. Therefore, it is necessary to investigate the impact of AI-based tools on students' reading motivation to understand their effectiveness and potential to improve educational outcomes.

Aim of the Study

The primary aim of this study is to explore the impact of Artificial Intelligence-based tools on students' reading motivation at the college level.

Objectives of the Study

The following objectives guide the study:

1. To examine the extent to which college students use AI-based tools for reading activities.

2. To analyze the relationship between the use of AI-based tools and students' reading motivation.
3. To identify the factors that influence students' motivation to engage in reading through AI-based tools.

Research Questions

The study seeks to answer the following research questions:

1. How frequently do college students use AI-based tools for reading activities?
2. What is the relationship between AI-based tool usage and students' reading motivation?
3. What factors influence students' reading motivation when using AI-based tools?

This study is of significant importance to educators, students, and policymakers. For educators, the findings will provide insights into how to effectively integrate AI-based tools into reading instruction to enhance student motivation and engagement. Understanding the role of AI in fostering reading motivation can help teachers adopt more innovative, student-centered teaching strategies.

For students, the study highlights the potential benefits of AI tools in improving reading habits, comprehension, and overall academic performance. By identifying factors that influence motivation, the research can guide students in utilizing AI tools more effectively to support their learning.

For policymakers and educational institutions, the study offers valuable information on the importance of integrating technology into education. It emphasizes the need for investment in digital infrastructure, teacher training, and curriculum development to support the effective use of AI in learning environments.

Furthermore, this study contributes to the existing body of literature by focusing specifically on reading motivation, an area that has received limited attention in AI-related educational research. By providing empirical evidence from a college-level context, the research addresses a critical gap and offers a foundation for future studies in this field.

Literature Review

Artificial Intelligence (AI) has emerged as a transformative force in education, significantly influencing teaching methodologies and learning processes across disciplines. In language learning, particularly in reading instruction, AI-based tools have introduced innovative approaches that enhance students' engagement and academic outcomes. These tools—including intelligent tutoring systems, adaptive reading platforms, and automated feedback applications—enable personalized and interactive learning experiences, thereby shifting traditional teaching paradigms toward student-centered approaches (Crompton et al., 2024; Holmes et al., 2019). In higher education, where independent learning is emphasized, AI technologies play a crucial role in supporting students' reading development and motivation.

Reading Motivation in Higher Education

Reading motivation is widely recognized as a key factor influencing students' academic success and learning engagement. It refers to the internal and external drives that encourage individuals to read, persist in reading activities, and engage meaningfully with texts (Guthrie & Wigfield, 2000). Motivated readers tend to exhibit higher levels of comprehension, critical thinking, and academic achievement. In contrast, students with low motivation often struggle with engagement, resulting in poor reading habits and limited academic performance.

Reading motivation is commonly categorized into intrinsic and extrinsic motivation. Intrinsic motivation involves reading for personal interest and enjoyment, while extrinsic motivation is driven by external rewards such as grades or academic requirements (Ryan & Deci, 2000). Research suggests that intrinsic motivation is more sustainable and strongly linked to long-term

academic success. However, in many higher education contexts, students exhibit low intrinsic motivation due to traditional teaching practices, limited engagement, and difficulty understanding complex academic texts (Wigfield et al., 2016).

Role of AI in Enhancing Reading Instruction

AI-based tools have significantly transformed reading instruction by offering adaptive and personalized learning experiences. These tools analyze learners' reading behaviors, identify areas of difficulty, and provide tailored support to improve comprehension (Holmes et al., 2019). For example, intelligent tutoring systems can guide students through reading tasks, while adaptive platforms adjust the complexity of content based on learners' proficiency levels.

In addition, AI-powered applications provide immediate feedback, which is essential for improving reading skills. Timely feedback helps students recognize errors, refine comprehension strategies, and build confidence in their reading abilities (Hattie & Timperley, 2007). Furthermore, AI tools incorporate interactive features such as multimedia content, quizzes, and gamified elements, making reading activities more engaging and effective (Zawacki-Richter et al., 2019).

The shift from traditional to AI-supported instruction reflects a broader move toward personalized learning. Unlike conventional teaching methods, AI technologies cater to individual learning styles and preferences, enabling students to engage with texts in meaningful ways. This personalization not only improves comprehension but also enhances motivation by making learning more relevant and enjoyable.

Impact of AI on Students' Reading Motivation

A growing body of research highlights the positive impact of AI-based tools on students' motivation. AI technologies create interactive, supportive learning environments that encourage students to participate actively in reading. For instance, adaptive reading systems provide content tailored to students' interests and abilities, which increases their engagement and motivation (Crompton et al., 2024).

AI tools also play a significant role in reducing reading anxiety. Many students experience difficulty when encountering unfamiliar vocabulary or complex texts. AI-based systems address this challenge by offering instant explanations, vocabulary support, and contextual guidance, enabling students to read with greater confidence (Holmes et al., 2019). As a result, students develop positive attitudes toward reading and are more likely to engage in reading tasks.

Moreover, AI technologies promote self-directed learning, which is closely linked to motivation. By allowing students to learn at their own pace and access resources independently, AI tools foster autonomy and self-regulation (Ryan & Deci, 2000). This autonomy enhances intrinsic motivation, encouraging students to take responsibility for their learning and engage more deeply with reading materials.

The findings of Syed Hyder Raza Shah and colleagues further support this perspective. Their research demonstrates that AI tools such as ChatGPT and adaptive platforms significantly improve students' reading proficiency, vocabulary development, and engagement. The study highlights that personalized feedback and interactive learning environments increase motivation and confidence among undergraduate students (Shah et al., 2025). These findings are consistent with the present study, which also identifies a strong relationship between AI usage and reading motivation.

Engagement and Interaction in AI-Supported Learning

Student engagement is a critical component of reading motivation, and AI tools have proven effective in enhancing engagement through interactive learning environments. Features such as multimedia content, gamification, and real-time feedback transform reading from a passive

activity into an active learning process (Zawacki-Richter et al., 2019). Students who interact with AI-based tools are more likely to participate actively, maintain focus, and develop sustained interest in reading.

Research indicates that interactive learning environments significantly improve students' motivation and learning outcomes (Fredricks et al., 2004). AI-based tools facilitate engagement by providing immediate responses, personalized content, and opportunities for collaborative learning. These features create a supportive environment where students feel encouraged to explore and engage with texts.

Furthermore, AI tools enable collaborative learning by connecting students with peers and instructors through digital platforms. This interaction fosters a sense of community and enhances motivation by promoting shared learning experiences.

Challenges in Implementing AI-Based Tools

Despite their numerous benefits, AI-based tools present several challenges that may affect their effectiveness in promoting reading motivation. One of the primary challenges is the lack of technological infrastructure, particularly in developing countries. Limited access to digital devices, internet connectivity, and educational resources can hinder the implementation of AI technologies in educational settings (Zawacki-Richter et al., 2019).

Another challenge is the potential overreliance on AI tools. While these technologies provide valuable support, excessive reliance may undermine students' critical thinking and independent learning. Students may rely on AI-generated responses without fully engaging with the reading material, which can negatively impact comprehension and analytical skills (Selwyn, 2019).

Additionally, effective AI use requires adequate training for both teachers and students. Without proper training, educators may struggle to integrate AI tools into their teaching practices, while students may not fully utilize their features. This highlights the importance of professional development and institutional support in maximizing the benefits of AI in education.

Ethical concerns also arise in the use of AI technologies, including data privacy, algorithmic bias, and academic integrity. These concerns must be addressed to ensure the responsible use of AI in educational contexts.

Research Gap

Although the existing literature highlights the potential benefits of AI in education, there is a notable gap in research on college-level reading motivation. Most studies have examined academic performance, language proficiency, or general engagement, with limited attention to motivational aspects of reading.

Furthermore, most research has been conducted in developed countries, where technological infrastructure is more advanced. There is a lack of context-specific studies in developing regions such as Pakistan, where educational challenges and resource limitations differ significantly. This gap underscores the need for research exploring the impact of AI-based tools on reading motivation across diverse educational contexts.

In conclusion, AI-based tools have significant potential to enhance students' reading motivation by providing personalized, interactive, and engaging learning experiences. These technologies support autonomous learning, reduce anxiety, and improve engagement, thereby increasing motivation. However, challenges such as limited infrastructure, overreliance on technology, and lack of training must be addressed to ensure effective implementation.

Literature also reveals a clear gap in research on college-level reading motivation, particularly in developing contexts. This study aims to address this gap by examining the relationship between AI-based tools and students' reading motivation, thereby contributing to the growing body of knowledge on AI in education.

Research Design

This study adopts a quantitative research design to examine the impact of Artificial Intelligence (AI)-based tools on students' reading motivation at the college level. A quantitative approach is appropriate as it allows the researcher to measure variables objectively and analyze the relationship between AI tool usage and students' reading motivation using statistical techniques (Creswell & Creswell, 2018). The study specifically employs a descriptive-correlational design, which is suitable for identifying patterns and relationships between variables without manipulating them.

Population and Sampling

The study's population consists of college-level students enrolled in English language courses at public-sector institutions. These students are selected because reading is a fundamental component of their academic curriculum.

A simple random sampling technique is used to select participants, ensuring that each student has an equal chance of being included in the study. A sample of approximately 100–150 students is considered appropriate for obtaining reliable, generalizable results. The selected participants represent diverse academic backgrounds and proficiency levels.

Research Variables

The study includes the following variables:

- **Independent Variable:** Use of AI-based tools (e.g., reading apps, AI tutors, automated feedback systems)
- **Dependent Variable:** Students' reading motivation

Reading motivation is further examined through dimensions such as:

- Interest in reading
- Engagement in reading activities
- Confidence in reading comprehension
- Frequency of reading

Pilot Testing and Reliability

Before final data collection, the questionnaire is pilot-tested with a small group of students (approximately 20 participants) to assess clarity and reliability. Necessary modifications are made based on feedback.

The instrument's reliability is measured using Cronbach's Alpha, with a value of 0.70 or higher considered acceptable for internal consistency (Creswell & Creswell, 2018).

Data Collection Procedure

Data are collected through both online and printed questionnaires distributed to the selected participants. Participants are informed about the purpose of the study and provide informed consent prior to participation. They are assured that their responses will remain confidential and will be used only for research purposes.

Data Analysis Techniques

The collected data are analyzed using Statistical Package for the Social Sciences (SPSS) or similar statistical software. The following techniques are applied:

- **Descriptive Statistics:** Mean, frequency, and percentage to summarize responses
- **Correlation Analysis (Pearson's r):** To determine the relationship between AI tool usage and reading motivation
- **Regression Analysis:** To examine the extent to which AI-based tools predict students' reading motivation

The results are presented in tables and interpreted to answer the research questions.

Results

The results of the study are presented in accordance with the three research questions. Data collected through the questionnaire were analyzed using descriptive statistics, correlation, and regression analysis. The findings are interpreted to examine the frequency of AI-based tool usage, the relationship between AI use and reading motivation, and the factors influencing students' reading motivation.

Research Question 1

How frequently do college students use AI-based tools for reading activities?

To answer this question, descriptive statistics (frequency and percentage) were used to analyze students' responses regarding their use of AI-based tools for reading activities.

The findings indicate that a majority of students reported moderate to frequent use of AI-based tools. Approximately 35% of students reported frequently using AI tools such as reading apps, AI tutors, and automated feedback systems, while 28% reported occasional use. In contrast, 22% of students reported using AI tools for reading rarely, and only 15% reported never using them. The mean score for AI tool usage was $M = 3.48$ ($SD = 0.89$) on a 5-point Likert scale, indicating moderate engagement with AI tools among college students. These findings indicate that while a significant number of students are adopting AI tools, their use is not yet widespread.

Research Question 2

What is the relationship between AI-based tool usage and students' reading motivation?

To examine the relationship between AI-based tool usage and reading motivation, Pearson correlation analysis was conducted.

The results revealed a significant positive correlation between AI tool use and students' reading motivation ($r = .62$, $p < .01$). This indicates that greater AI tool use is associated with higher reading motivation among college students.

Further analysis using linear regression showed that AI tool usage significantly predicts reading motivation ($\beta = .58$, $p < .01$), explaining approximately 34% of the variance ($R^2 = .34$). This suggests that AI-based tools play an important role in enhancing students' motivation to engage in reading activities.

Research Question 3

What factors influence students' reading motivation when using AI-based tools?

To identify the factors influencing reading motivation, mean scores and regression analysis were used. Four major factors were examined: personalized learning, interactive features, immediate feedback, and accessibility.

The results indicate that:

- **Personalized learning** had the highest mean score ($M = 3.85$, $SD = 0.76$), indicating that students are highly motivated when reading materials are tailored to their individual needs.
- **Interactive features** such as quizzes and multimedia content also showed a strong influence ($M = 3.72$, $SD = 0.81$), suggesting that engagement plays a key role in motivation.
- **Immediate feedback** provided by AI tools was another important factor ($M = 3.68$, $SD = 0.79$), as it helps students identify and correct errors instantly.
- **Accessibility and flexibility** had a moderate influence ($M = 3.54$, $SD = 0.84$), allowing students to read at their own pace and convenience.

Regression analysis indicated that personalized learning and interactive features were the strongest predictors of reading motivation, with significant beta values ($\beta = .41$, $p < .01$ and $\beta = .36$, $p < .01$, respectively).

Summary of Findings

The overall findings of the study indicate that:

- College students demonstrate a moderate level of AI tool usage for reading activities.
- There is a strong positive relationship between AI-based tool usage and students' reading motivation.
- Key factors influencing motivation include personalized learning, interactivity, immediate feedback, and accessibility.

These results suggest that AI-based tools can significantly enhance students' reading motivation when effectively integrated into learning environments.

Discussion

The present study aimed to examine the impact of Artificial Intelligence (AI)-based tools on students' reading motivation at the college level. The findings are discussed in relation to existing literature and theoretical perspectives to provide a deeper understanding of how AI influences reading behavior and motivation.

The results revealed that college students demonstrate a moderate level of engagement with AI-based tools for reading activities. This finding aligns with previous research indicating that although AI technologies are increasingly available, their adoption among students is still developing due to factors such as accessibility, digital literacy, and institutional support (Crompton et al., 2024). Similarly, studies conducted in developing contexts suggest that while students show interest in AI tools, their usage patterns vary depending on exposure and availability of technological resources. This indicates that AI integration in education is still in a transitional phase, particularly at the college level.

The study further found a significant positive relationship between AI-based tool usage and students' reading motivation. This supports earlier research that emphasizes that AI tools enhance motivation by creating interactive, personalized learning environments (Holmes et al., 2019). According to self-determination theory, autonomy and competence are key drivers of motivation (Ryan & Deci, 2000), and AI tools contribute to both by allowing students to learn at their own pace and receive immediate feedback. As a result, students become more engaged and motivated to participate in reading activities.

Importantly, the findings are strongly supported by the work of Shah et al. (2025) and colleagues, who explored the role of AI tools in enhancing students' reading proficiency and engagement. Their study highlighted that AI tools such as ChatGPT and adaptive reading platforms promote personalized learning, vocabulary development, and increased engagement, ultimately leading to improved reading motivation and confidence among undergraduate students. The present study extends these findings by providing quantitative evidence of a statistically significant relationship between AI use and reading motivation. This suggests that AI tools not only improve reading skills but also positively influence students' attitudes toward reading.

Another key finding of the study is that personalized learning and interactive features are the most influential factors affecting students' reading motivation. This is consistent with existing literature, which emphasizes that personalized content enhances learners' interest by aligning reading materials with their abilities and preferences (Crompton et al., 2024). Interactive features such as quizzes, multimedia elements, and real-time responses further increase engagement by transforming reading into an active learning process. These findings reinforce the idea that motivation is not solely dependent on content but also on how learning experiences are structured and delivered.

The role of immediate feedback was also identified as a significant factor influencing motivation. AI-based tools provide instant feedback, allowing students to identify errors and improve

comprehension in real time. This finding is consistent with previous studies that highlight the importance of feedback in promoting learning and motivation (Holmes et al., 2019). When students receive timely responses, they are more likely to stay engaged and persist with reading tasks, ultimately enhancing their motivation.

Despite these positive outcomes, the study also highlights certain challenges associated with AI integration. Although not the primary focus of the results, moderate usage levels suggest that barriers such as limited access to technology and a lack of training may affect students' engagement with AI tools. These findings are supported by research conducted in Pakistan, which indicates that infrastructure limitations and digital literacy gaps hinder the effective implementation of AI in education. Additionally, concerns about overreliance on AI tools have been noted in previous studies, suggesting that excessive dependence may undermine critical thinking and independent learning.

Furthermore, the findings emphasize the importance of contextual factors in shaping the effectiveness of AI-based tools. Students' motivation is influenced not only by the availability of technology but also by its integration into teaching practices. This supports the argument that technology alone cannot improve learning outcomes; rather, it must be combined with effective pedagogical strategies (Crompton et al., 2024; Altaf et al., 2025). Therefore, teachers play a crucial role in guiding students to use AI tools in a balanced and meaningful way.

Overall, the discussion highlights that AI-based tools have a significant positive impact on students' reading motivation by enhancing engagement, personalization, and feedback mechanisms. The findings are consistent with existing literature and extend previous research by providing empirical evidence from a quantitative perspective. The inclusion of Shah et al.'s (2025) work further strengthens the study by offering context-specific insights into the role of AI in improving reading proficiency and motivation among undergraduate students.

In conclusion, the study confirms that AI-based tools are effective in promoting reading motivation at the college level. However, their success depends on factors such as accessibility, digital literacy, and pedagogical integration. These findings suggest that while AI has strong potential to transform reading practices, its implementation must be carefully planned and supported to maximize its benefits.

Conclusion and Recommendations

This study examined the impact of Artificial Intelligence (AI)-based tools on students' reading motivation at the college level. The findings indicate that AI technologies play a significant role in enhancing students' engagement, interest, and motivation toward reading activities. Although students demonstrated a moderate level of AI tool use, those who used them more frequently showed higher reading motivation. This suggests that AI-based tools contribute positively to students' reading behaviors and attitudes.

The study further revealed a significant positive relationship between the use of AI-based tools and students' reading motivation. AI technologies enhance motivation by providing personalized learning experiences, interactive features, and immediate feedback, thereby supporting students' engagement and confidence in reading. In addition, the findings identified key factors influencing reading motivation, including personalized content, interactivity, feedback, and accessibility. Among these, personalized learning and interactive features were found to have the greatest impact, underscoring the importance of designing engaging, learner-centered reading environments.

Despite these positive outcomes, the study also suggests that the effectiveness of AI tools depends on contextual factors, including access to technology, students' digital literacy, and institutional support. Without addressing these challenges, the full potential of AI in enhancing

reading motivation may not be realized. Therefore, while AI-based tools offer promising opportunities for improving reading practices, their successful integration requires careful planning and support.

Based on these findings, it is recommended that educational institutions integrate AI-based tools into reading instruction to promote student engagement and motivation. Teachers should be provided with adequate training to effectively use these technologies and incorporate them into their pedagogical practices. Students should be encouraged to use AI tools for self-directed learning while maintaining a balance to avoid overdependence. Furthermore, institutions should invest in improving technological infrastructure to ensure equitable access to AI-based resources. Policymakers should also develop clear guidelines to address ethical concerns such as data privacy and academic integrity. Finally, future research should explore the long-term effects of AI-based tools on reading motivation and academic performance across different educational contexts.

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