


Research Article

The Impact of Artificial Intelligence on the Educational Activities of Bamyán University Students

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Abstract: The present study aims to examine the impact of artificial intelligence (AI) on the educational activities of students at Bamyán University and to analyze the relationship between the use of AI technologies and various dimensions of education. This study is quantitative and applied in nature, and the data were collected through a standardized and structured questionnaire. The statistical population included students from various fields at Bamyán University, and a sample of 363 students was selected using stratified random sampling. The findings revealed that the average age of respondents was 22 years, all were male, and the majority were single with moderate familiarity with AI. The most used AI tools included ChatGPT, Google Translate, and educational software, although overall usage remained moderate and limited. Positive impacts of AI included increased access to educational resources, improved speed and accuracy in completing tasks, enhanced writing and analytical skills, and strengthened independent learning abilities, while its effects on motivation and self-confidence were limited. At the same time, concerns were noted regarding reduced reliance on traditional sources, technology dependence, decreased creativity, and the risk of academic dishonesty. Major barriers to effective utilization included lack of formal training, limited infrastructure, and the absence of ethical guidelines. Overall, the study indicates that AI has high potential to enhance the quality of learning and research, but its full and responsible use requires targeted training, infrastructural support, promotion of a culture of responsible use, and the development of practical policies.

Keywords: artificial intelligence; students; educational activities; learning quality; research

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1. Introduction

In recent decades, artificial intelligence (AI) has emerged as one of the transformative phenomena of the twenty-first century, playing a crucial role in redefining educational, research, and scientific structures worldwide. The integration of this technology into educational systems has provided unprecedented opportunities for interactive learning, easy access to academic resources, and the enhancement of educational quality. Tools such as ChatGPT, Copilot, and educational recommender systems help students play a more active role in the learning process and develop greater critical and analytical independence.

In Afghanistan, particularly in central regions such as Bamyán Province, higher education in recent years has faced multiple challenges, including shortages of educational resources, lack of specialized faculty in some disciplines, and limited access to modern technologies. In this context, the emergence of AI can serve as an effective tool to compensate for educational shortcomings and improve the quality of learning. The use of AI-based technologies can help students at Bamyán University benefit from modern digital learning methods and gain easier access to global knowledge and scientific resources.

However, the use of AI in education presents not only opportunities but also challenges. Existing concerns include students' overreliance on AI tools, decreased critical and analytical skills, as well as ethical and privacy issues. In Afghan university environments where digital infrastructure is still developing, these challenges may have a more profound impact on students' learning methods and academic motivation.

Therefore, examining the effects of AI on the educational activities of students at Bamyán University is both a scientific and practical necessity. This study seeks to analyze

various dimensions of AI use in learning, research, student-faculty interaction, and study methods, and, while identifying its opportunities and threats, aims to provide strategies for the effective and ethical use of this technology in Afghanistan's higher education environment.

Technological advancements in the contemporary era, particularly in the field of AI, have fundamentally transformed traditional methods of education. Intelligent educational tools, academic chatbots, and adaptive learning platforms offer new opportunities to enhance the quality and efficiency of learning. These technologies can make the learning process more student-centered, faster, and more effective, while reinforcing students' active role in knowledge construction (Holmes & Tuomi, 2022).

Globally, the introduction of AI-based tools such as ChatGPT, Copilot, Google Bard, and adaptive learning systems has altered the traditional roles of teachers and students in the teaching and learning process. These tools provide capabilities such as automated text generation, machine translation, real-time feedback, and analysis of educational data, creating a new environment for personalized learning, fostering creativity, and facilitating access to knowledge (Kamali et al., 2024).

Despite these benefits, the use of AI in education also presents multiple challenges. Research indicates that excessive reliance on these technologies may lead to reduced critical thinking, creativity, and independent analytical abilities among students (Dogaru et al., 2025). Moreover, concerns regarding academic misconduct, data accuracy, algorithmic bias, and privacy violations have emerged, necessitating careful policy-making at both university and national levels (Alnsour et al., 2025).

In Afghanistan, the higher education system faces fundamental challenges such as limited resources, a shortage of specialized faculty, unstable digital infrastructure, and unequal access to technology (Sadat, 2023). Bamyán University, as one of the key educational institutions in the central region of the country, despite the high motivation of students to learn, is still in the early stages of adopting modern educational technologies. In this context, AI can represent both an opportunity for transformation and a challenge for maintaining educational quality. For example, AI tools can help compensate for the shortage of educational resources; however, if used without proper training and scientific supervision, they can foster cognitive dependency, reduce the originality of academic work, and alter students' attitudes toward the learning process (Sadat, 2023).

Given the importance of analytical, writing, and critical thinking skills in the humanities, social sciences, and education fields, the central question arises: does AI in the university environment of Bamyán serve as a tool for educational empowerment, or does it foster dependency and weaken students' cognitive skills? Answering this question can influence educational policy-making, the design of digital skills courses, and the development of professional ethics in Afghan higher education.

Therefore, this study seeks to analyze the actual and perceived impacts of AI on the educational activities of students at Bamyán University, including learning, research, completing assignments, and student-teacher interactions. By identifying opportunities, challenges, and educational consequences, the research aims to provide recommendations for the optimal and ethical use of AI technologies in higher education.

In the era of digital transformation and the proliferation of modern technologies, AI has become a fundamental factor in redefining the roles of education, learning, and knowledge production. Universities worldwide are adapting their educational structures to intelligent technologies to make learning more personalized, efficient, and creative. In this context, understanding the actual and perceived effects of AI on students' educational activities is essential – not only to evaluate the effectiveness of these technologies but also to design forward-looking and ethically grounded educational policies. This is particularly critical in countries like Afghanistan, where educational and digital infrastructures are still developing. Research in this area can bridge the knowledge gap between traditional and technology-driven education systems and lay the groundwork for improving learning quality in university settings.

Furthermore, at Bamyán University, one of the key academic centers in central Afghanistan, examining the role and consequences of AI in educational activities is of particular importance. In this environment, students often face challenges such as limited educational resources, poor internet access, and lack of specialized guidance. If AI technologies are properly guided and taught, they can enhance motivation, improve academic performance, and strengthen students' research skills. Conversely, uncritical use may undermine creativity, foster cognitive dependency, and lower the quality of learning. Thus,

this study is crucial not only to understand the educational opportunities and threats of AI at Bamyán University but also to provide a basis for developing responsible and effective educational policies at national and regional levels to utilize AI constructively in Afghanistan's higher education system.

The main objective of this research is to investigate the effects of AI on the educational activities of students at Bamyán University. To achieve this primary goal, several subsidiary objectives have been defined, which include: assessing the level of familiarity and patterns of usage of AI tools among students, evaluating the positive impacts of this technology on the learning process and academic activities, examining its potential negative consequences and effects on education, and finally, identifying the obstacles and challenges students face in effectively utilizing AI in the educational environment.

The main research question of this study is: "How does the use of AI affect the educational activities of students at Bamyán University?" To provide a detailed answer to this query, the following subsidiary questions have been formulated: To what extent do students use various AI tools? What are the most significant positive and negative effects of using AI on student learning? And what are the main obstacles to the effective use of AI in the educational environment of Bamyán University?

2. Literature Review

Nowadays, AI has attracted the attention of scholars and researchers, and the literature relevant to the present study is discussed in two sections: domestic and international.

2.1. Domestic Research Background

In recent years, AI has emerged as one of the modern educational tools, drawing the attention of researchers and higher education institutions worldwide, including Afghanistan. Studies indicate that integrating AI technologies into educational environments can enhance student engagement and learning outcomes, although its effectiveness depends on context, infrastructure, and user readiness.

In Afghanistan, research has shown that students' awareness and use of AI tools are limited. A study at Takhar University revealed that students had minimal familiarity with AI language models, and using these tools did not significantly impact their academic performance (Burhani et al., 2024). Another study at Nangarhar University demonstrated that AI tools could improve learning and academic progress for students in computer science programs (Zirak et al., 2025).

However, the use of AI in education in Afghanistan faces challenges such as limited internet access, inadequate technological infrastructure, and low awareness of these tools. A study at Kabul University indicated that although students were aware of AI in daily life, they encountered obstacles in using it within educational settings (Fazil et al., 2024).

The study titled "E-learning and Artificial Intelligence: A Solution to the Limitations of Educational Infrastructure in Afghanistan" showed that Afghan students increasingly use digital tools for learning but often lack sufficient knowledge of the ethical and scientific principles underlying their use (Sadat, 2023).

Research by Haqbeen et al. (2025) examined the impact of an AI-based conversational robot on student engagement and learning in online sessions in Afghanistan. Findings indicated that the robot's presence as a facilitator in post-class discussions increased active student participation, the number of posts and responses, and students' confidence in understanding course material. However, the control group liked their posts more frequently, suggesting divided attention among experimental group students. The researchers emphasized that conversational robots can enhance meaningful learning but noted limitations, such as small sample size and short intervention duration, and recommended that future studies investigate the robot's effect on student interaction with instructors and content.

Other studies, such as Sadat et al. (2025), demonstrated that AI- and cloud-based communication platforms can boost student engagement in private universities in Afghanistan. These tools create interactive, personalized, and motivating learning environments, but their effectiveness depends on infrastructure quality, faculty readiness, and cultural acceptance. The study also highlighted the importance of supportive educational ecosystems – including reliable infrastructure, professional development, and ethical guidance – for the successful adoption of innovative technologies.

Fazil et al. (2024) focused on Kabul University and found that students were highly

aware of AI in daily life, though its full integration into curricula still requires progress. The research also emphasized ethical considerations in AI use and the necessity of a comprehensive approach to integrating new technologies in education. Findings suggest that students should be technologically competent and ethically capable in interacting with AI tools.

In contrast, Burhani et al. (2024) found at Takhar University that students' familiarity and use of AI language models were limited and had no significant impact on academic performance. The researchers recommended educational programs and awareness campaigns to enhance students' practical skills and knowledge of AI language models, thereby improving academic performance and project efficiency.

Overall, existing evidence suggests that AI can enhance student engagement and learning, but its effectiveness depends on contextual factors such as infrastructure, readiness of students and instructors, and ethical considerations (Fazil et al., 2024; Haqbeen et al., 2025; Sadat et al., 2025; Burhani et al., 2024). These studies also indicate that in resource-limited environments, like Afghan universities, successful AI integration requires a comprehensive, ecosystem-based approach covering training, skill development, and technological infrastructure.

2.2. International Research Background

The emergence of AI tools, particularly large language models such as ChatGPT, has brought remarkable changes to student learning and education. Globally, AI adoption in higher education is rapidly increasing. According to a survey by the Digital Education Council (2024), about 86% of students use AI tools in their studies, and 54% use these technologies weekly. This growing trend provides opportunities to improve learning quality, facilitate content interaction, and enhance educational experiences.

However, using AI in education also presents challenges. Some studies have shown that overreliance on these tools can reduce critical and creative thinking. For example, Spirlet (2025) warned that excessive use of ChatGPT may prevent students from engaging in deep cognitive processes and encourage reliance on machines for intellectual tasks.

Conversely, some research emphasizes the positive effects of ChatGPT. Yadav and Yadav (2024) demonstrated that ChatGPT can enhance critical thinking and academic performance by providing quick access to information, personalized learning, and facilitating collaboration between students and instructors. Additionally, the tool improves learning experiences through immediate feedback and interactive educational resources (Youssef et al. 2024).

In Jordan, Alnsour et al. (2025) found that a lack of institutional training and clear guidelines for using ChatGPT raised concerns among instructors about declining learning quality and increased academic misconduct. Their findings suggest that in societies without clear AI policies, unsupervised use of this technology can have negative educational consequences.

Other studies examined ChatGPT's role in enhancing learning. Aktay et al. (2023) reported that students found using ChatGPT enjoyable and believed it improved their academic performance. Similarly, Zhai (2022) utilized ChatGPT for writing articles in education and AI, identifying it as an effective tool for producing coherent and structured papers. Alshater (2022) highlighted ChatGPT's potential in advancing academic research, particularly in economics and finance, while noting limitations such as low generalizability, data quality concerns, and ethical challenges.

Meanwhile, Karakoç Keskin (2023) warned that ChatGPT's ability to generate realistic text with minimal input could threaten the integrity of online exams. Rudolph et al. (2023) showed that common plagiarism detection software cannot reliably identify ChatGPT-generated texts, highlighting the need for more advanced tools to maintain originality. Pavlik (2023), focusing on journalism education, emphasized ChatGPT's capability to produce relevant content while also noting risks such as reduced creativity and critical thinking.

Despite these concerns, many researchers emphasize ChatGPT's educational advantages. Castell (2023) argued that AI can foster critical thinking skills and encourage learning beyond traditional methods. Professor George Siemens from the University of South Australia suggests that teachers can interact with chatbots for lesson planning, idea generation, and time management (Castell, 2023).

Ethically, studies stress the importance of responsible ChatGPT use. Farhi et al. (2023) raised concerns about over-dependence, reduced creative and writing skills, and threats to academic integrity, emphasizing the need for educational policies supporting ethical and

effective AI use (Sullivan et al., 2023).

Furthermore, Rahman and Watanobe (2023) found that ChatGPT can improve learning processes and motivation by providing flexible learning opportunities, virtual training, and skill practice (Youssef et al., 2024). Nevertheless, limitations such as data bias, difficulty in complex reasoning, and inability to process visual information necessitate careful and informed use, while maintaining the instructor's role in meaningful learning (Yadav & Yadav, 2024).

Montenegro-Rueda et al. (2023) regard ChatGPT's emergence in 2022 as a milestone in education, enhancing interaction between teachers and students. From a motivational perspective, it encourages students to embrace new technologies and improves academic performance.

Empirical studies, such as Hakiki et al. (2023) at Muhammadiyah Muara Bungo University, show that ChatGPT increases student engagement and improves learning outcomes. Castillo et al. (2023) confirm these results, reporting increased assignment completion and digital learning, although dependency and laziness may also occur.

Additionally, ChatGPT affects learning motivation. Siregar et al. (2023) found that the tool boosts motivation through immediate feedback and personalized learning. However, other studies, including Castillo et al. (2023), caution that improper use may reduce individual effort, highlighting the importance of training instructors and students for conscious use (Montenegro-Rueda et al., 2023).

In summary, evidence shows that ChatGPT, as an innovative educational technology, can enhance teaching and learning processes, increase student motivation and engagement, and improve academic outcomes, though long-term effects and ethical challenges remain to be studied (Hakiki et al., 2023; Siregar et al., 2023; Castillo et al., 2023).

Recent developments indicate that AI adoption in higher education has positively influenced student attitudes toward technology and improved learning and research processes (Ngo, 2023; Sok & Heng, 2023; Zhao et al., 2023). Various studies confirm that ChatGPT supports personalized learning by providing quick answers, summarizing texts, designing research, and assisting educational activities (Ahmadi & Tekemen, 2024; Opara et al., 2023). Moreover, it can enhance creativity and research skills (Adeshola & Adepoju, 2024).

However, studies indicate that misuse or overuse of ChatGPT may reduce academic motivation, foster technology dependence, and weaken critical thinking skills (El-Seoud et al. 2023; Sok & Heng, 2023; Zhao et al., 2023). Some students also struggle with evaluating sources and proper referencing (Ngo, 2023). Therefore, educating users on ethical and scientific AI usage is essential.

Researchers recommend that ChatGPT be used as a complementary learning tool rather than a substitute for human thinking and analysis (El-Seoud et al., 2023; Ahmadi & Tekemen, 2024). Ultimately, evidence suggests that conscious use of ChatGPT can improve learning, research, and educational experiences, provided ethical and pedagogical principles are followed (Adeshola & Adepoju, 2024; Ahmadi & Tekemen, 2024).

Considering this literature, the present study aims to examine the impact of AI on the educational activities of students at Bamyan University. This research can help identify opportunities and challenges of AI usage in higher education in Afghanistan and provide a foundation for developing effective educational policies for optimal use of modern technologies.

3. Materials and Methods

This study is quantitative in nature and, in terms of purpose, applied. Its main objective is to examine the impact of AI on the educational activities of students at Bamyan University and to analyze the relationship between variables related to the extent of AI usage and various dimensions of educational activities. Since this study aims to explain the relationships between variables through numerical data and statistical analysis, a quantitative approach is considered the most suitable. To collect data, a survey method will be employed, and a standardized and structured questionnaire has been designed to ensure the results are generalizable to the target population.

The statistical population of the study includes all students of Bamyan University in the academic year 1404 (corresponding to the 2025 calendar year) across eight faculties (Agriculture, Social Sciences, Economics, Sharia, Natural Sciences, Education, Geology, and Veterinary) and from various departments. According to data provided by the Student Affairs Vice-Chancellor of Bamyan University, the total number of students in the spring semester

of 1404 is approximately 3,888. To determine the required sample size, Cochran’s formula – one of the best methods – was used, with a 95% confidence level and a 5% margin of error (Ahmadi, 2025; Ahmadi, 2024). Based on this formula, a sample size of 349.6 students was suggested; however, to increase the precision of the study, the sample size was increased to 363 respondents.

Sampling was carried out using stratified random sampling to ensure a balanced representation of different fields of study, academic years, and genders in the sample.

The main data collection instrument is a researcher-made questionnaire based on theoretical and empirical studies. It consists of two sections: demographic characteristics and content-related questions regarding various dimensions of AI’s impact. The content section includes items on the extent of AI tools usage in education and research, its impact on learning and academic performance, its effects on analytical skills, critical thinking, and creativity, ethical challenges and concerns, and students’ overall attitudes toward the application of AI in higher education. All questions are designed using a 5-point Likert scale.

The reliability of a questionnaire can be measured using Cronbach’s alpha, a common method for assessing the internal consistency of research instruments (table 1). This coefficient ranges from zero to one, where zero indicates no internal consistency and one indicates the highest level of internal consistency. Typically, a value of 0.7 is considered the minimum acceptable level of reliability (Yagoubi & Ahmadi, 2025; Ahmadi & Akbari, 2024). In the present study, the calculated Cronbach’s alpha is 0.817, indicating good reliability.

Table 1. Cronbach’s alpha.

Reliability statistics	
Cronbach’s Alpha	N of Items
.817	34

After finalizing the questionnaire and conducting a pilot test on a small group of students, the final version was distributed among the main sample. The collected data were coded and entered into the statistical software SPSS for analysis. The data analysis included descriptive statistics to calculate frequencies, means, modes, medians, and percentages of the variables.

Throughout all stages of the research, the principles of research ethics were strictly observed. Participation in the study was voluntary, respondents’ information was kept confidential, and the research results were used solely for scientific purposes. No data were published without the participants’ consent.

4. Results

In this section, the demographic and general characteristics of the respondents are examined to provide an overall picture of the study sample. Understanding respondents’ characteristics, including age, gender, marital status, faculty, year of study, and their familiarity with AI, lays the groundwork for a more detailed analysis of the findings. The main data were analyzed and interpreted descriptively.

4.1. Demographic and General Characteristics of Respondents

4.1.1. Age of Respondents

According to the results (table 2), the mean age of the respondents was 22.15 years, the median was 22, and the mode was also 22. The minimum age reported was 17, and the maximum was 35 years. These data indicate that the majority of participants fall within the young age group and consist mainly of students and youth. Therefore, the findings of this study largely reflect the perspectives of the younger generation.

Table 2. Age of respondents.

N	363	363
	0	0
Mean		22.15
Median		22.00
Mode		22
Minimum		17
Maximum		35

4.1.2. Gender of Respondents

The data show that all 363 respondents were male. According to the policies of the ruling political system in Afghanistan, education for girls and women at the university level has been suspended, and only men are allowed to pursue higher education. This situation may reflect gender inequality in access to higher education or participation in academic activities within the studied environment. Table 3 shows gender profiles of respondents.

Table 3. Gender of respondents.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	363	100.0	100.0	100.0
Total	363	100.0		

4.1.3. Marital Status of Respondents

The findings indicate that 313 respondents (86.2%) were single, while 50 respondents (13.8%) were married (table 4). This ratio suggests that most respondents are in their youth and are still pursuing their studies, and therefore have not yet married. This status aligns with the age structure of the sample and its student nature.

Table 4. Marital status of respondents.

	Frequency	Percent	Cumulative percent
Valid Single	313	86.2	86.2
Valid Married	50	13.8	100.0
Total	363	100.0	

4.1.4. Respondents by Faculty

The distribution of respondents by faculty (table 5) shows that the highest number of participants came from the Faculties of Education (22%), Agriculture (16.3%), and Economics (15.2%), respectively. In contrast, the lowest proportion was from the Faculty of Veterinary (2.2%). This distribution indicates that students from the humanities and applied sciences participated the most in the study, which may be related to the nature of the research topic or easier access to them.

Table 5. Respondents by faculty.

	Frequency	Valid Percent	Cumulative Percent	Frequency
Valid Agriculture	59	16.3	16.3	59
Valid Education	80	22.0	38.3	80
Valid Economics	55	15.2	53.4	55
Valid Social Sciences	48	13.2	66.7	48
Valid Natural Sciences	39	10.7	77.4	39
Valid Islamic Studies	25	6.9	84.3	25
Valid Geology	49	13.5	97.8	49
Valid Veterinary	8	2.2	100.0	8
Total	363	100.0		363

4.1.5. Respondents' Academic Year

The findings (table 6) indicate that the majority of respondents are in their second year (39.2%) and fourth year (36.5%) of study, while first-year students constitute only 1.4% of the total sample. This suggests that students in higher years, due to greater familiarity with research topics and higher academic preparedness, participated more actively in the study.

Table 6. Respondents' academic year.

	Frequency	Valid percent	Cumulative percent
Valid First year	5	1.4	1.4
Valid Second year	142	39.2	40.6
Valid Third year	84	22.9	63.5
Valid Fourth year	132	36.5	100.0
Total	363	100.0	

4.1.6. Level of Familiarity with AI

The average level of familiarity of respondents with AI was calculated as 3.09 out of 5. Both the median and mode were 3, and the range of variation was from 1 to 5. These results indicate that the respondents' familiarity with AI concepts is at a moderate level. Therefore, it can be concluded that although most students have a basic understanding of AI, there is a noticeable need for supplementary training and awareness programs in this area. Table 7 present students' level of familiarity with AI.

Table 7. Students' level of familiarity with AI.

N	Valid	363
	Missing	0
	Mean	3.09
	Median	3.00
	Mode	3
	Minimum	1
	Maximum	5

4.2. Usage of AI Tools

The results of the table 8 indicate that the average use of various AI tools among students is relatively low to moderate. The highest level of use is related to ChatGPT and similar chatbots, with a mean of 2.74 and a median of 3, suggesting that a significant number of students use these tools occasionally. This is followed by AI-based language learning tools, with a mean of 2.70, and Google Translate, with a mean of 2.69. The lowest level of use is associated with Grammarly or writing correction tools, with a mean of 2.55. Overall, the results indicate that the use of AI tools among students is at a moderately low level and has not yet reached widespread and daily application. This may be due to technical or language limitations or in-sufficient awareness of the capabilities of these tools.

Table 8. Usage of AI tools.

Item	Mean	Median	Mode	Minimum	Maximum
ChatGPT or similar chatbots	2.74	3.00	3	1	5
Google Translate	2.69	3.00	3	1	5
Grammarly or writing correction tools	2.55	2.00	1	1	5
Tools for slide creation and text summarization	2.66	3.00	3	1	5
AI-based language learning tools	2.70	3.00	3	1	5

4.2.1. Positive Impacts of AI on Students' Educational Activities

The means in this section indicate a relatively positive student perspective regarding the role of AI in education. The highest mean belongs to the item "AI has enabled me to access more learning resources" (3.68), reflecting the significant role of this technology in expanding educational resources. Additionally, the items related to increasing accuracy and speed in completing academic tasks (3.56) and enhancing writing and language skills (3.40) also have relatively high means. In contrast, the lowest mean corresponds to "Confidence in learning" (2.96), suggesting that some students still do not feel fully confident in using AI. Overall, the findings indicate that AI has positively influenced the quality, speed, and accessibility of education, although its effects on motivational and self-efficacy aspects remain limited. Table 9 analyses positive impacts of AI on students' educational activities.

Table 9. Positive impacts of AI on students' educational activities.

Statement	Mean	Median	Mode	Minimum	Maximum
With the help of AI, I can complete my academic tasks faster and more accurately.	3.56	4.00	4	1	5
AI is a suitable tool for reviewing lessons and preparing for exams.	3.36	3.00	4	1	5

Using AI has allowed me to access more resources for learning.	3.68	4.00	4	1	5
AI has improved my writing and language skills.	3.40	4.00	4	1	5
AI responses have helped me strengthen my analytical and reasoning skills.	3.33	4.00	4	1	5
Using AI has given me more confidence in learning.	2.96	3.00	4	1	5
Using AI tools has increased my learning speed.	3.22	3.00	4	1	5
AI helps me better understand academic concepts.	3.38	4.00	4	1	5
I use AI in writing essays and completing academic tasks.	3.42	4.00	4	1	5
AI has increased my motivation to study more.	3.20	3.00	3	1	5
Using AI has improved my grades.	3.01	3.00	3	1	5
AI has helped me save time and energy in completing academic activities.	3.31	3.00	4	1	5

4.2.2. Negative Impacts of AI on Students' Educational Activities

The findings, presented in table 10, indicate that, alongside positive aspects, students are also aware of the negative consequences of using AI. The highest mean score corresponds to the item "Excessive use of AI has led me to consult books or instructors less frequently" (3.46), suggesting that AI has somewhat reduced traditional educational interactions. Additionally, concerns about increased dependence on technology (3.41) and heightened fear of academic cheating (3.38) were also observed among students. Other items, such as "reduced creativity" (3.25) and "mental laziness" (3.19), further indicate the presence of negative cognitive outcomes. Overall, the means range from 3.09 to 3.46, reflecting a moderate level of concern. Therefore, while students benefit from AI, they also express worries about declining mental skills, dependency, and reduced creativity.

Table 10. Negative impacts of ai on students' educational activities.

Items	Mean	Median	Mode	Minimum	Maximum
AI-generated responses are sometimes inaccurate and misleading, which has reduced my trust.	3.09	3.00	3	1	5
Excessive use of AI has led me to consult books or instructors less.	3.46	4.00	4	1	5
AI has taken away opportunities for mental and writing practice.	3.28	3.00	4	1	5
Using AI may lead to committing academic dishonesty.	3.22	3.00	3	1	5
I am afraid that using AI will distance me from traditional learning methods.	3.31	3.00	4	1	5
Misuse of AI may reduce the quality of my learning.	3.33	3.00	4	1	5
Using AI has made me mentally lazy.	3.19	3.00	4	1	5
AI has decreased my creativity in writing and analysis.	3.25	3.00	4	1	5
Sometimes I cannot fully trust AI-generated responses.	3.32	3.00	4	1	5
Fear of academic dishonesty among students has increased with AI use.	3.38	3.00	3	1	5
Excessive AI use has increased my dependence on technology.	3.41	4.00	4	1	5

4.3. Barriers and Challenges

The results (table 11) indicate that infrastructural and educational challenges are the most significant obstacles to effective use of AI among students. The highest mean score is attributed to the item "Lack of awareness about AI applications" (3.65), which reflects a

weakness in education and information dissemination in this area. Following this, “Lack of adequate internet access” (3.60) and “Insufficient formal AI training at the university” (3.59) are also identified as major barriers. The item “AI content is usually in English” has a lower mean score (3.19), indicating a language barrier faced by some students. Overall, the results suggest that insufficient infrastructure, lack of formal training, and limited public awareness are among the main challenges hindering effective utilization of AI technologies in the university environment.

Table 11. Barriers and challenges in using AI.

Statement	Mean	Median	Mode	Minimum	Maximum
Lack of proper internet is an obstacle to effective use of AI.	3.60	4.00	4	1	5
Lack of awareness about AI applications is a major challenge.	3.65	4.00	4	1	5
AI content is usually in English, which hinders learning.	3.19	3.00	3	1	5
Some instructors oppose students using AI.	3.42	3.00	3	1	5
There is a perceived lack of formal AI education at the university.	3.59	4.00	4	1	5

The findings indicate that students’ use of AI tools is moderate and limited, primarily focusing on tools such as ChatGPT and Google Translate. However, students’ attitudes toward AI are positive and optimistic; they perceive this technology as enhancing speed, accuracy, and access to educational resources. Alongside these benefits, there are concerns about reduced creativity, overreliance on technology, and an increased risk of academic misconduct.

The main barriers to effective use of AI include inadequate internet access, lack of formal training, and insufficient awareness of its applications. Overall, the results suggest that a culture of AI use in the university environment is still developing, and its institutionalization requires education, ethical policies, and improved infrastructure.

5. Discussion

The study revealed that the average age of respondents is approximately 22 years, with the majority being male and unmarried. This demographic composition reflects the general structure of students in Afghan universities, where the young population and male presence in higher education exceed that of women. This situation aligns with previous studies in Afghanistan, which have shown that gender inequalities and cultural and economic limitations are key factors reducing women’s participation in higher education (Fazil et al., 2024; Sadat et al., 2025).

In terms of academic disciplines, the highest participation came from the Faculties of Education, Agriculture, and Economics. This may be due to the interdisciplinary nature of the research topic, which is particularly attractive to students in social sciences and education. Additionally, the level of AI familiarity among respondents was moderate (mean 3.09), indicating general awareness but not extensive practical skills. This finding is consistent with the results of Burhani et al. (2024) and Fazil et al. (2024), who emphasized that Afghan students have theoretical knowledge of AI but face limitations in its educational applications.

Furthermore, the findings showed that the highest usage of AI tools relates to ChatGPT and other chatbots. This reflects global patterns of language model usage in education, observed in many countries as well (Yadav & Yadav, 2024; Montenegro-Rueda et al., 2023). ChatGPT, as an easily accessible and versatile tool, appears to have become part of students’ learning and research processes. However, the relatively low overall usage mean (around 2.7 out of 5) indicates that obstacles such as limited infrastructure, restricted internet access, and insufficient awareness continue to hinder full utilization of this technology at Bamyan University. This finding aligns with reports by Sadat (2023) and Haqbeen et al. (2025), which highlight the role of contextual factors, including infrastructure and educational culture, in the successful integration of AI in Afghan education.

Regarding academic year, higher participation among second- and fourth-year students may indicate increased interest and awareness as students progress in their studies. This suggests that educational experience and greater exposure to digital tools positively influence attitudes and use of AI. Similar findings have been reported in studies by Ngo (2023) and

Zhao et al. (2023), showing that experience and academic maturity play a decisive role in the adoption of educational technologies.

The moderate average familiarity with AI in this study also points to an educational gap: the absence of formal programs to teach scientific and ethical use of AI tools. This issue has also been emphasized in the international literature. For instance, Alnsour et al. (2025) demonstrated that the lack of institutional guidelines may increase ethical concerns, including academic dishonesty and overreliance on technology. Therefore, one essential need at Bamyán University is the development of clear educational policies and programs to empower students in re-sponsible AI use.

From a sociological perspective, the findings indicate that AI usage among students at Bamyán University is primarily individual and self-directed rather than institutional and structured. This reflects the overall status of the Afghan education system, where technological innovations have not yet been fully integrated into formal education structures. From a functionalist perspective, it can be argued that higher education institutions in Afghanistan are still functionally lagging behind technological developments; AI tools have entered the system, but other related institutions, such as policy-making, infrastructure, and faculty training, have not yet fully aligned with them.

From the perspective of John Rawls' theory of social justice, limited access to AI technologies constitutes a form of educational inequality. Students with greater digital resources and technological skills have a relative advantage in the learning process. This digital divide can contribute to the reproduction of educational and even class inequalities unless supportive policies are developed to ensure equal education and public access to technology.

Compared with global literature, the findings of this study indicate that while in developed countries ChatGPT and other AI tools are used as means to enhance creativity and learning (Castell, 2023; Ahmadi & Tekemen, 2024), in Afghanistan their use remains at a preliminary awareness and experimental curiosity stage. This difference underscores the importance of developing digital literacy and research ethics in the country's universities.

Overall, the findings confirm that AI can significantly enhance students' learning quality, motivation, and creativity if adequate infrastructure and training are provided. At the same time, challenges such as weak technological infrastructure, absence of modern educational policies, gender inequality, and lack of ethical awareness hinder full utilization of these potentials. Therefore, it is recommended that universities incorporate both ethical and technical AI education into curricula and provide the necessary digital and cultural infrastructure to support sustainable integration of AI in teaching and learning processes.

6. Conclusions

The present study was conducted to examine the impact of AI on the educational activities of students at Bamyán University. The findings provide a clear picture of the usage, benefits, limitations, and challenges of this technology in the academic environment. The collected data indicate that students are generally familiar with AI tools, with the highest usage reported for tools such as ChatGPT, Google Translate, and other educational software. This suggests that despite initial familiarity, students are not yet fully utilizing the potential of AI in the learning and research process and require further training, awareness, and guidance.

From the perspective of positive impacts, the findings show that AI use increases access to educational resources, improves the speed and accuracy of academic tasks, strengthens writing and analytical skills, and enhances students' independent learning capabilities. Moreover, AI tools help students better understand course concepts and improve the quality of their research activities. However, the positive effects of AI on motivation and self-confidence are limited, indicating that many students are not yet fully confident in the benefits of this technology and feel the need for support and guidance.

The study's findings also highlight concerns and potential negative effects of AI usage. Excessive reliance on AI can lead to reduced engagement with traditional resources, mental dependency on AI tools, decreased creativity and cognitive abilities, and increased risk of academic dishonesty. This underscores the importance of responsible education and guidance for students in using AI properly to minimize negative effects.

The main challenges to effective AI use in the university environment were also clearly identified. Limited access to the internet and technological equipment, lack of formal training and necessary skills, and absence of clear policies and guidelines for AI use are among the barriers that may restrict the development and institutionalization of AI applications in the university. These findings indicate that the culture of AI use is still at an early stage, and

institutionalizing it requires a combination of education, adequate infrastructure, and development of practical and ethical policies.

Overall, the results show that AI has significant potential to enhance the quality of learning, research, and academic interaction at Bamyan University. However, fully realizing this potential is possible only through targeted training, infrastructural support, promotion of a responsible usage culture, and development of practical policies.

Concerning the research results, we can outline the following recommendations regarding the efficient use of AI within the educational process:

Firstly, organize training courses and specialized workshops to enhance students' skills and awareness for effective and responsible use of AI tools;

Secondly, strengthen technological and internet infrastructure in the university to ensure stable and equitable access to AI tools;

Thirdly, develop university policies and guidelines for ethical, safe, and effective use of AI in educational and research activities;

Fifthly, encourage faculty members to actively use AI in teaching and provide guidance to students for maximizing the benefits of this technology.

Sixthly, develop localized and translated educational content in Persian and local languages to reduce language barriers and improve students' access to AI resources;

And seventhly, continuously monitor the impact of AI on student learning and research to improve strategies and adjust practical policies over time.

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