Asian Journal of Science and Applied Technology
ISSN: 2249-0698 (P)
Vol.14 No.2, 2025, pp.46-54

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www.crijournals.org
DOI: https://doi.org/10.70112/ajsat-2025.14.2.4316

Conversational Artificial Intelligence in Education: A Survey

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((Received 6 October 2025; Revised 8 November 2025; Accepted 15 November 2025; Available online 2 December 2025)

Abstract **- The integration of artificial intelligence (AI) in education has introduced chatbots as innovative tools that enhance learning experiences, provide academic support, and streamline administrative processes. Despite their growing use, understanding user perspectives on their effectiveness and limitations remains essential. This study aimed to evaluate the awareness, usage patterns, perceived benefits, and challenges related to chatbot applications in education among students and faculty members. A cross-sectional survey was conducted among 387 participants (280 students and 107 faculty members) from various academic disciplines, including computer science, management, and commerce. A structured questionnaire was used to collect quantitative and qualitative data. Descriptive and thematic analyses were performed using IBM SPSS Statistics 26.0 and inductive coding, respectively. The majority of participants (93.3%) were aware of chatbots, and 96.7% reported using them for educational purposes. ChatGPT was universally used, followed by Google Assistant and Gemini. Students reported more frequent usage and a wider range of academic applications, such as answering queries and accessing study materials. Faculty use was more focused on content creation. While 88.9% of participants expressed trust in chatbot responses, concerns about response accuracy (64.8%), originality (51.8%), and emotional adaptability persisted. Faculty were more skeptical than students regarding the chatbots' impact on communication and emotional support. Chatbots are widely accepted in educational environments and provide valuable support. However, improving trust, accuracy, and alignment with pedagogical goals is necessary for their sustained and meaningful integration.**

Keywords: **Chatbots, AI in Education, Student Engagement, Educational Technology, Faculty Perception, Personalized Learning**

I. INTRODUCTION

The integration of artificial intelligence (AI) into educational settings has opened new opportunities for improving learning experiences, with chatbots emerging as a prominent application of this technology. Chatbots, powered by natural language processing (NLP) and machine learning algorithms, are designed to simulate human-like interactions. In education, they serve as virtual assistants capable of addressing queries, providing study resources, and supporting administrative tasks. These advancements align with the growing demand for innovative tools that cater to diverse learning needs and optimize educational processes [1], [2].

The global shift towards digital learning, accelerated by the COVID-19 pandemic, has highlighted the importance of accessible and flexible educational solutions [3], [4]. Chatbots have proven to be instrumental in bridging communication gaps between students and educators, facilitating seamless access to information, and promoting engagement in virtual learning environments. By offering instant responses and 24/7 availability, chatbots cater to the needs of learners in various settings, including traditional classrooms, online courses, and self-paced learning modules [5], [6].

A key advantage of chatbots in education is their potential to personalize learning experiences. Adaptive learning algorithms enable chatbots to tailor responses and recommendations based on individual user profiles, preferences, and performance data. This personalized approach not only enhances knowledge retention but also motivates learners by addressing their unique challenges and goals. Moreover, chatbots can assist educators by automating routine tasks, such as grading assessments, sending reminders, and managing schedules, thereby allowing them to focus on more critical aspects of teaching [7], [8].

Despite their growing adoption, the effectiveness and limitations of chatbots in education remain subjects of ongoing research [9]. While these tools offer significant benefits, challenges such as technical errors, limited conversational abilities, and concerns regarding data privacy and security persist. Furthermore, the lack of trust in chatbot-generated responses and the need for better integration with existing educational systems are issues that warrant attention. Understanding the perspectives of both students and educators on these aspects is crucial for optimizing chatbot design and functionality [8].

Previous studies have explored the role of chatbots in enhancing academic performance, streamlining administrative processes, and improving engagement in educational settings [9], [10]. For instance, chatbots have been used to provide instant feedback, facilitate collaborative learning, and support language acquisition. However, the extent to which these tools meet the diverse needs of users varies widely, depending on factors such as the quality of the

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chatbot's design, the nature of the educational context, and the technological infrastructure available.

The objective of this study is to evaluate chatbot applications in education by examining their awareness, usage patterns, perceived benefits, and challenges from the perspectives of students and educators. By conducting a comprehensive analysis, this research aims to identify areas for improvement and provide recommendations for the development of more effective and user-friendly chatbots. Additionally, this study seeks to contribute to the broader discourse on the role of AI in education, emphasizing the importance of aligning technological advancements with pedagogical objectives [11], [12].

II. REVIEW OF LITERATURE

The use of conversational AI in education has become a major research focus over the last few years. Studies range from reviews and surveys to small classroom experiments and pilot projects. Together, these studies show both the potential of chatbots to support learning and the challenges that come with their use.

A. Reviews and Trend Studies

A number of reviews have mapped how chatbots are being used in education. Early studies (Wollny *et al.,* 2021; Okonkwo & Ade-Ibijola, 2021) [13] showed that most chatbots were simple tools, acting as tutors, study coaches, or FAQ assistants. These reviews pointed out that while chatbots can help students, the evidence for actual learning gains was limited. Later reviews, such as Lin and Yu (2023) [14] and Hwang and Chang (2023) [15], confirmed that interest in the field is growing quickly but also highlighted that many studies focus more on perceptions than on measurable results. More recent systematic reviews (Labadze *et al.,* 2023 [16]; Gökçearslan *et al.,* 2024) [17] summarized benefits such as improved motivation and faster feedback, while also stressing issues such as reliability, bias, and ethical risks.

B. Student Perspectives

Several large surveys provide insight into how students view chatbots. For example, a study in Sweden involving nearly 6,000 university students (Malmström *et al.,* 2023) [18] found that many students use ChatGPT and feel it makes their studies more efficient, but they still worry about accuracy and ethical concerns. Similar work by [17] *et al.* (2024) [18] showed that students across different fields and academic levels see chatbots as helpful but remain cautious about long-term effects. Pilot studies in language learning (Polakova & Klimova, 2024) [19] and social studies (Yetişensoy & Karaduman, 2024) [20] also reported positive impacts, especially in boosting engagement and confidence.

C. Teacher Views and Adoption Factors

Teacher acceptance is just as important. Early surveys (Bii *et al.,* 2018) [21] showed that teachers are open to chatbots if they clearly support teaching goals. Later studies (Chocarro *et al.,*2023) [22] explained that ease of use and usefulness strongly influence whether teachers will adopt them. Design features also matter: chatbots that use friendly language and proactive interaction are more likely to be accepted. Belda-Medina and Kokošková (2023) [23] even proposed a model (CHISM) to help evaluate the quality of chatbot interactions in education.

D. Challenges and Concerns

Alongside the benefits, researchers stress important concerns. Issues of academic honesty, misinformation, privacy, and overdependence are raised in several studies (Kooli, 2023; McGrath *et al.,* 2024) [24], [25]. Reviews note that many chatbot studies are still short term, often focusing on student opinions rather than real learning outcomes. Some early works (Roos, 2018; Aleedy *et al.,* 2022) [26], [27] also pointed out challenges in design, accessibility, and multilingual use.

In summary, the literature shows that conversational AI can make education more engaging and personalized, and it may help reduce teacher workload. At the same time, strong concerns remain about ethics, trust, and the actual impact on learning. What is missing are long-term studies that measure learning outcomes in real classrooms. Future research needs to move beyond simple perception surveys to provide solid evidence on how conversational AI can truly enhance academic life.

III. METHODOLOGY

This study employed a cross-sectional survey-based research design to evaluate the awareness, usage, perceived benefits, and challenges associated with chatbot applications in education. A structured questionnaire was used to collect quantitative and qualitative data from students and educators across different academic disciplines. The study aimed to analyze chatbot integration in learning environments, with particular emphasis on user satisfaction, engagement, and the technological and ethical concerns associated with AI-driven educational tools.

Participants for this study included students and faculty members from diverse academic backgrounds, including computer science, management, and commerce. A convenience sampling method was used to recruit participants from universities and academic institutions. The eligibility criteria included students enrolled in undergraduate, postgraduate, or doctoral programs and faculty members actively engaged in teaching or academic administration.

The sample size was determined based on the assumption that 50% of students and academicians use chatbots in education, with a 95% confidence level ($Z = 1.96$) and a margin of error of 5% ($E = 0.05$). Using the standard sample size formula for an infinite population, the estimated minimum required

sample was 384 participants. Given that the study focused on a finite population of 1,000 students and 150 faculty members, the sample size was adjusted using finite population correction. The final target sample included 277 students and 110 teachers, totaling 387 participants, ensuring a representative assessment of chatbot adoption in educational settings.

Participants were recruited through email invitations, university social media platforms, academic forums, and direct outreach. A structured questionnaire was developed to assess various aspects of chatbot applications in education. The questionnaire covered demographic details, including educational role, field of study, and level of education. It also explored awareness and usage patterns, examining respondents' knowledge of chatbots, frequency of use, and specific purposes for utilizing these tools.

The perceived benefits section assessed the advantages of chatbots in providing instant responses, enhancing engagement, supporting personalized learning experiences, and reducing administrative workloads. Additionally, the questionnaire identified challenges such as technical issues, privacy concerns, trust in chatbot-generated responses, and difficulties in integrating chatbots into existing educational systems. The effectiveness and impact section focused on user satisfaction, the influence of chatbots on learning outcomes, and their role in reducing faculty workload. Lastly, the questionnaire sought future enhancements and recommendations, capturing insights on desired chatbot features, ethical considerations, and potential areas for further integration into educational environments.

Before full deployment, the questionnaire was pilot-tested with a small group of 30 students and faculty members to assess clarity, reliability, and validity. Minor revisions were made to improve readability and response accuracy. The final instrument demonstrated high internal consistency (Cronbach's alpha = 0.87) [28], [29], indicating reliable measurement of constructs.

Data collection was conducted over a four-week period through an online survey platform. The survey was distributed via institutional mailing lists, university portals, and academic conferences. Participants provided informed consent before participation, ensuring voluntary and anonymous responses. To improve response rates, reminder emails were sent at weekly intervals, and participants were given the option to enter a raffle for an incentive (e.g., an e-learning resource subscription).

Data analysis was conducted using IBM SPSS Statistics 26.0, with descriptive statistics (means, standard deviations, and frequency distributions) summarizing demographic characteristics and chatbot usage patterns. Thematic analysis of open-ended responses using inductive coding highlighted emerging themes on user experiences, challenges, and recommendations.

The study's limitations included potential bias in self-reported data, limited generalizability due to convenience sampling, and a focus on tech-integrated environments. Future research should explore longitudinal and experimental approaches to assess chatbot adoption and learning outcomes.

IV. RESULTS

This section presents the findings from the survey of 387 participants (280 students and 107 faculty members). Results are reported in terms of awareness, frequency of use, educational purposes, and perceptions, with statistical comparisons between students and faculty members. Chi-square (χ^2) tests were conducted to assess group differences, with significance set at $p < 0.05$.

A. Awareness and Adoption of Chatbots

Awareness of chatbots was high across participants. Among students, 90.7% reported familiarity, compared to 100% of faculty members. Nearly all respondents (96.7%) used chatbots for educational purposes, with no significant difference between student and faculty adoption ($p > 0.05$). In terms of tools, ChatGPT was universally used (100%), followed by Google Assistant (82.3%), Gemini (70.9%), and Microsoft Copilot (39.9%). Students reported higher usage of supplementary tools such as Duolingo (34.3%) and Siri (33.5%), whereas faculty usage was more selective (15% each for Siri and Duolingo).

Interpretation: While both groups actively engage with chatbot technologies, students explore a broader range of tools, reflecting their role as end users of diverse learning applications. Faculty adoption is more targeted, aligning with their instructional and content-creation needs.

B. Frequency of Chatbot Use

Students reported more frequent chatbot use than faculty (Table III). Daily use was common among 42.5% of students compared to 15% of faculty, while faculty were more likely to report occasional (42.1%) or rare (29%) use. A chi-square test revealed a statistically significant difference in frequency distributions between groups ($\chi^2 = 52.38$, $p < \ldots$).

C. Educational Purposes

Both groups used chatbots primarily to answer academic queries (87.5% overall), though students were significantly more likely to do so (94.1%) than faculty members (72%). Students also reported higher usage for accessing study materials (91.3% vs. 29%) and language learning (70.1% vs. 14%). Conversely, faculty reported relatively greater use for content creation (43% vs. 39.4%).

Interpretation: Students leverage chatbots as study companions across multiple domains, whereas faculty treat them as supplementary tools for instructional design.

D. Perceptions of Originality and Creativity

When asked whether chatbots compromise originality, 49.2% of students and 57.9% of faculty members responded affirmatively. However, the difference was not statistically significant ($\chi^2 = 1.96$, $p = 0.16$).

Interpretation: Both groups share strong concerns about originality, but faculty members exhibit slightly higher skepticism, consistent with their responsibility to safeguard academic integrity.

E. Engagement and Learning Experience

Students were more positive about engagement, with 78.8% agreeing or strongly agreeing that chatbots enhance learning, compared to 57% of faculty members. A chi-square test showed a significant difference ($\chi^2 = 16.68$, $p < 0.001$). Despite these positive views, a majority of students (88.6%) and faculty members (86%) felt that chatbots did not substantially enhance their overall learning experience. Similarly, most respondents indicated that chatbots did not significantly reduce the need for human intervention.

Interpretation: Students perceive chatbots as engaging and supportive, but both groups acknowledge limitations in their ability to replace traditional instruction. Faculty members' more cautious stance may reflect differing pedagogical philosophies and reliance on face-to-face engagement.

F. Emotional and Pedagogical Adaptability

Only 28% of faculty members supported the idea that chatbots should adapt to students' emotional and cognitive needs, compared to 50.8% of students. Faculty members were more neutral or resistant to this concept, suggesting reservations about delegating the affective dimensions of teaching to technology.

Interpretation: Students are more open to emotionally adaptive chatbots, whereas faculty members remain skeptical, emphasizing the human role in providing empathy and guidance in education.

G. Summary of Significant Findings

Awareness: High among both groups; no significant difference.
Frequency of use: Students use chatbots significantly more frequently ($\chi^2 = 52.38$, $p < 0.001$).
Educational purposes: Students favor broad academic support; faculty emphasize content creation.
Originality concerns: Both groups are skeptical; the difference is not significant ($p = 0.16$).
Engagement: Students report significantly higher engagement ($\chi^2 = 16.68$, $p < 0.001$).
Emotional adaptability: Faculty remain more resistant compared to students.

Interpretation: Students' daily engagement suggests reliance on chatbots for routine academic support, while faculty adopt them more cautiously, often driven by specific teaching or administrative needs.

Table I shows the participants in the study and their backgrounds. Out of 387 participants, most were students (280, 72.4%), while 107 (27.6%) were faculty members. Regarding education levels, most students were undergraduates (210, 75.0%), while faculty members were mainly postgraduates (62, 57.9%) or held doctorates (45, 42.1%). This indicates that the student group was mostly in the early stages of higher education, whereas faculty members had advanced qualifications.

In terms of subject areas, the majority of participants were from Computer Science/IT fields (283, 73.1%), indicating a strongly technology-focused group. Smaller proportions were from Management (78, 20.2%), Commerce (11, 2.8%), and other disciplines (15, 3.9%).

When asked about awareness of chatbots or virtual assistants, almost all participants were familiar with them. Among students, 254 (90.7%) reported awareness, and all faculty members (100%) were already aware. Only a small number of students (26, 9.3%) had never heard of chatbots.

Overall, the sample consisted of technology-oriented students and experienced faculty members, with nearly universal awareness of chatbot technology, making them well suited to share their views on how these tools can be used in education.

Table II illustrates the types of AI assistants or chatbots used by students and faculty members who were aware of such tools ($n = 361$). ChatGPT was universally used by all respondents (100%), followed by high usage of Google Assistant (82.3%) and Google Gemini (70.9%). Students reported higher usage across most tools, with 87% using Google Assistant, 70.5% using Google Gemini, and 44.5% using Microsoft Copilot. In comparison, faculty usage was notably lower for tools such as Siri (15%), Duolingo (15%), and Microsoft Copilot (29%). A small proportion of students reported using less common tools such as IBM Watson Assistant (2%) and other chatbots (7.9%), whereas no faculty members reported using these. These findings suggest that while ChatGPT dominates chatbot usage in education, other AI tools are selectively utilized depending on user preferences and educational needs.

TABLE I DISTRIBUTION OF PARTICIPANTS ACCORDING TO EDUCATIONAL ROLE, LEVEL OF EDUCATION, AWARENESS ABOUT CHATBOT AND FIELD OF STUDY/TEACHING

Distribution of Participants	Educational Role				Total (n=387)	
	Student (n=280)		Faculty (n=107)			
	n	%	n	%	n	%
Level of Education						
Doctoral	0	0.0%	45	42.1%	45	11.6%
Postgraduate	70	25.0%	62	57.9%	132	34.1%
Undergraduate	210	75.0%	0	0.0%	210	54.3%
Field of study/teaching						
Computer Science/Application/IT	202	72.1%	81	75.7%	283	73.1%
Management (BBA/MBA)	70	25.0%	8	7.5%	78	20.2%
Commerce	8	2.9%	3	2.8%	11	2.8%
Other	0	0.0%	15	14.0%	15	3.9%
Awareness of Chatbot/Virtual Assistant						
Yes	254	90.7%	107	100%	361	93.3%
No	26	9.3%	0	0.0%	26	6.7%

TABLE II TYPES OF AI ASSISTANTS OR CHATBOTS USED BY STUDENTS AND FACULTY MEMBER

Types of AI Assistants or Chatbots Used	Educational Role				Total (n=361)	
	Student (n=254)		Faculty (n=107)			
	n	%	n	%	n	%
ChatGPT	254	100.0%	107	100.0%	361	100.0%
Google Assistant	221	87.0%	76	71.0%	297	82.3%
Siri	85	33.5%	16	15.0%	101	28.0%
Alexa	99	39.0%	31	29.0%	130	36.0%
Microsoft Copilot	113	44.5%	31	29.0%	144	39.9%
Google Gemini	179	70.5%	77	72.0%	256	70.9%
Grammarly	57	22.4%	31	29.0%	88	24.4%
Duolingo	87	34.3%	16	15.0%	103	28.5%
IBM Watson Assistant	5	2.0%	0	0.0%	5	1.4%
Other	20	7.9%	0	0.0%	20	5.5%

Table III summarizes the use, frequency, and purposes of educational chatbot usage among students and faculty members (n = 361). A vast majority of both students (95.3%) and faculty members (100%) reported using chatbots for educational purposes.

While daily use was more common among students (42.5%) than faculty members (15%), faculty members more frequently reported occasional (42.1%) or rare (29%) use, indicating different patterns of engagement. In terms of educational purposes, the most common use was for answering academic queries (87.5%), with students (94.1%) leading significantly over faculty members (72%). Students also reported higher usage for accessing study materials (91.3%), language learning (70.1%), and lesson planning (44.1%). Faculty members showed relatively higher engagement in content creation (43%) compared to students (39.4%). Uses such as conducting assessments, administrative tasks, receiving reminders, and preparing presentations were less common overall but followed similar trends.

These findings suggest that students tend to use chatbots more frequently and for a wider range of academic support functions, while faculty members use them more selectively, particularly for content generation.

TABLE III USE, FREQUENCY AND EDUCATIONAL PURPOSE OF EDUCATIONAL CHATBOT USAGE AMONG STUDENTS AND FACULTY

Use, Frequency and Educational Purpose	Educational Role					
	Student (n=254)		Faculty (n=107)			
	n	%	n	%	n	%
Use of Chatbots for Educational Purposes						
Yes	242	95.3%	107	100.0%	349	96.7%
No	12	4.7%	0	0.0%	12	3.3%
Frequency of Educational Chatbot						
Not applicable	11	4.3%	0	0.0%	12	3.3%
Daily	108	42.5%	16	15.0%	139	38.5%
Weekly	50	19.7%	15	14.0%	72	19.9%
Occasionally	67	26.4%	45	42.1%	121	33.5%
Rarely	16	6.3%	31	29.0%	49	13.6%
Educational Purposes for Which Chatbots Were Used						
Answering academic queries	239	94.1%	77	72.0%	316	87.5%
Accessing study materials	232	91.3%	31	29.0%	263	72.9%
Language Learning	178	70.1%	15	14.0%	193	53.5%
Conducting assessments or quizzes	94	37.0%	15	14.0%	109	30.2%
Lesson planning	112	44.1%	15	14.0%	127	35.2%
Content Creation	100	39.4%	46	43.0%	146	40.4%
Administrative tasks	58	22.8%	15	14.0%	73	20.2%
Receiving reminders for deadlines	39	15.4%	16	15.0%	55	15.2%
Presentation Project	41	16.1%	16	15.0%	57	15.8%

Notes:
Q1: Do you feel AI tools compromise originality or creativity?
Q2: Do chat bots make learning more engaging for you?
Q3: How effective are chat bots in providing personalized assistance based on your learning needs?
Q4: Technical issues
Q5: Lack of accuracy in answers
Q6: Privacy concerns
Q7: Limited conversational abilities
Q8: Do you trust the information provided by chat bots?
Q9: How would you rate the chatbot's ability to understand and respond to complex queries?
Q10: Do chat bots enhance your overall learning experience?
Q11: Do chat bots reduce the need for human intervention in resolving queries or providing support?
Q12: Do you believe chat bots can improve teacher-student communication?
Q13: Do you think chatbots should be designed to better Q14: adapt to students' emotional and cognitive needs?
Q14: How likely are you to recommend chat bot technology to peers or colleagues in education?

Table IV provides detailed insight into participants' perceptions, trust levels, and challenges associated with chatbot use in education. A significant proportion of both students (49.2%) and faculty members (57.9%) believed chatbots could be useful in education, though many remained uncertain (44.1% and 42.1%, respectively). While most students agreed (53.5%) or strongly agreed (25.2%) that chatbots enhance engagement, faculty responses were more divided, with 29% disagreeing outright.

Regarding personalized assistance, the majority of students (44.9%) considered chatbots "very effective," whereas most faculty members (85%) rated them only "somewhat effective." Technical issues (37.4% of students and 29.9% of faculty members) and accuracy concerns (73.6% and 85%) were common among both groups. Privacy concerns were less prominent, reported by 43% of faculty members and 61.4% of students.

A large majority only partially trusted chatbot information (84.3% of students and 100% of faculty members), with very few students (15.7%) expressing full trust. In terms of quality, 65.7% of students rated chatbot responses as "good," while faculty ratings were mixed, with 71% reporting "good" but 29% indicating "fair."

TABLE IV PERCEPTIONS, TRUST, AND CHALLENGES OF CHATBOT USE IN EDUCATION

Que		Educational Role				Total (n=361)	
		Student (n=254)		Faculty (n=107)			
		n	%	n	%	n	%
Q1	No	17	6.7%	0	0.0%	17	4.7%
	Yes	125	49.2%	62	57.9%	187	51.8%
	Not sure	112	44.1%	45	42.1%	157	43.5%
Q2	Disagree	0	0.0%	31	29.0%	31	8.6%
	Neutral	54	21.3%	15	14.0%	69	19.1%
	Agree	136	53.5%	30	28.0%	166	46.0%
	Strongly agree	64	25.2%	31	29.0%	95	26.3%
Q3	Neutral	39	15.4%	0	0.0%	39	10.8%
	Somewhat Effective	101	39.8%	91	85.0%	192	53.2%
	Very effective	114	44.9%	16	15.0%	130	36.0%
Q4	No	104	40.9%	61	57.0%	165	45.7%
	Yes	150	59.1%	46	43.0%	196	54.3%
Q5	No	95	37.4%	32	29.9%	127	35.2%
	Yes	159	62.6%	75	70.1%	234	64.8%
Q6	No	187	73.6%	91	85.0%	278	77.0%
	Yes	67	26.4%	16	15.0%	83	23.0%
Q7	No	156	61.4%	46	43.0%	202	56.0%
	Yes	98	38.6%	61	57.0%	159	44.0%
Q8	Fully trust	40	15.7%	0	0.0%	40	11.1%
	Partially trust	214	84.3%	107	100.0%	321	88.9%
Q9	Excellent	65	25.6%	0	0.0%	65	18.0%
	Good	167	65.7%	76	71.0%	243	67.3%
	Fair	16	6.3%	31	29.0%	47	13.0%
	Poor	6	2.4%	0	0.0%	6	1.7%
Q10	No	29	11.4%	15	14.0%	44	12.2%
	Yes	225	88.6%	92	86.0%	317	87.8%
Q11	Not at all	9	3.5%	0	0.0%	9	2.5%
	Moderately	173	68.1%	77	72.0%	250	69.3%
	Significantly	72	28.3%	30	28.0%	102	28.3%
Q12	No	62	24.4%	61	57.0%	123	34.1%
	Yes	192	75.6%	46	43.0%	238	65.9%
Q13	No	34	13.4%	46	43.0%	80	22.2%
	Yes	91	35.8%	31	29.0%	122	33.8%
	May be	129	50.8%	30	28.0%	159	44.0%
Q14	Unlikely	61	24.0%	31	29.0%	92	25.5%
	Likely	127	50.0%	76	71.0%	203	56.2%
	Very likely	66	26.0%	0	0.0%	66	18.3%

A vast majority (88.6% of students and 86% of faculty members) felt chatbots could be incorporated into education. Similarly, 68.1% of students and 72% of faculty members reported moderate improvement in learning, with 28.3% and 28%, respectively, perceiving significant improvement. Fewer faculty members (43%) believed chatbots could improve teacher–student communication compared to students (35.8%), while half of the students (50.8%) were tentative ("maybe"). Notably, while half of the students (50%) were likely and 26% very likely to recommend

chatbots in education, 71% of faculty members were only likely, with none strongly endorsing them. This reflects a more enthusiastic stance among students compared to faculty members.

V. DISCUSSION

The integration of artificial intelligence (AI) into educational environments has rapidly evolved, with chatbots emerging as one of the most prominent tools to enhance learner engagement, streamline administrative tasks, and support personalized learning. The current study, which evaluated the use of chatbot applications among 387 participants, including students and faculty members, affirms the growing acceptance and utilization of these tools in academic contexts. With 93.3% of respondents reporting awareness and 96.7% actively using chatbots for educational purposes, the data suggest a high level of penetration and functional relevance of chatbot technology in higher education. These findings echo global trends reported by Ali *et al.* (2024), who emphasized the transformative role of AI in education and identified chatbots as essential tools for bridging communication and access gaps in digitally driven learning environments [12].

Our study found that ChatGPT was universally used among participants, followed by other tools such as Google Assistant, Gemini, Microsoft Copilot, and Alexa. This aligns with the review by Labadze *et al.* (2023), which recognized ChatGPT and similar AI models as the most commonly implemented chatbot systems in educational settings due to their conversational sophistication and accessibility [30]. Furthermore, the widespread use of chatbots for answering academic queries (87.5%) and accessing study materials (72.9%) reinforces findings by Fryer *et al.* (2019), who demonstrated that chatbot-assisted learning significantly improves knowledge retention and academic motivation when learners are actively engaged with responsive digital agents [31].

While most users partially trusted chatbot responses, only 11.1% fully trusted them, emphasizing the need for more transparent, verifiable, and emotionally adaptive chatbot systems, as advocated by Gligorea *et al.* (2023) in their review of AI-driven personalized learning [32]. Interestingly, our study also observed differing patterns of adoption and purpose between students and faculty members. Students used chatbots more frequently and for a broader range of academic functions, while faculty members relied more on them for content creation and occasional support. These differences resonate with the findings of Al-Khresheh (2024), who highlighted variations in AI adoption based on user role, pedagogical needs, and confidence in digital tools [6]. The current findings suggest that while chatbots are well integrated into educational workflows, there is a critical need to address concerns around user trust, emotional intelligence, and alignment with curricular goals to ensure that these tools not only supplement but meaningfully enhance the educational experience.

VI. CONCLUSION

The study concludes that chatbot applications are widely accepted and effectively utilized by both students and faculty members in educational settings, primarily for academic support and content engagement. While their potential to enhance learning is evident, addressing concerns related to trust, accuracy, and emotional adaptability is essential for their sustained and meaningful integration in education.

Declaration of Conflicting Interests
The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding
The authors received no financial support for the research, authorship, and/or publication of this article.

Use of Artificial Intelligence (AI) - Assisted Technology for Manuscript Preparation
The authors confirm that no AI-assisted technologies were used in the preparation or writing of the manuscript, and no images were altered using AI

REFERENCES

[1] L. Labadze, M. Grigolia, and L. Machaidze, "Role of AI chatbots in education: A systematic literature review," *Int. J. Educ. Technol. Higher Educ.*, vol. 20, no. 1, p. 56, Oct. 2023, doi: 10.1186/s41239-023-00426-1.

[2] O. Ali, P. A. Murray, M. Momin, Y. K. Dwivedi, and T. Malik, "The effects of artificial intelligence applications in educational settings: Challenges and strategies," *Technol. Forecast. Soc. Change*, vol. 199, p. 123076, Feb. 2024, doi: 10.1016/j.techfore.2023.123076.

[3] "Covid-19 pandemic and online learning: The challenges and opportunities," *Interact. Learn. Environ.*, vol. 31, no. 2, 2023. [Online]. Available: https://www.tandfonline.com/doi/abs/10.1080/10494820.2020.1813180

[4] "The COVID-19 pandemic and e-learning: Challenges and opportunities from the perspective of students and instructors," *J. Comput. Higher Educ.*, 2021. [Online]. Available: https://link.springer.com/article/10.1007/s12528-021-09274-2

[5] M. Matsieli and S. Mutula, "COVID-19 and digital transformation in higher education institutions: Towards inclusive and equitable access to quality education," *Educ. Sci.*, vol. 14, no. 8, Aug. 2024, doi: 10.3390/educsci14080819.

[6] M. H. Al-Khresheh, "Bridging technology and pedagogy from a global lens: Teachers' perspectives on integrating ChatGPT in English language teaching," *Comput. Educ. Artif. Intell.*, vol. 6, p. 100218, Jun. 2024, doi: 10.1016/j.caeai.2024.100218.

[7] Geniusee, "How chatbots for education are changing the learning landscape," 2025. [Online]. Available: https://geniusee.com/single-blog/chatbots-education-changing-learning-landscape

[8] "Integration of AI-powered chatbots in nursing education: A scoping review of their utilization, outcomes, and challenges," *Teach. Learn. Nurs.*, Jan. 2025, doi: 10.1016/j.teln.2024.11.010.

[9] L. Labadze, M. Grigolia, and L. Machaidze, "Role of AI chatbots in education: A systematic literature review," *Int. J. Educ. Technol. Higher Educ.*, vol. 20, no. 1, p. 56, 2023.

[10] J. Pérez, D. Daradoumis, and J. M. Puig, "Rediscovering the use of chatbots in education: A systematic literature review," *Comput. Appl. Eng. Educ.*, vol. 28, no. 6, pp. 1549–1565, 2020.

[11] Bhutoria, "Personalized education and artificial intelligence in the United States, China, and India: A systematic review using a human-in-the-loop model," *Comput. Educ. Artif. Intell.*, vol. 3, p. 100068, Jan. 2022, doi: 10.1016/j.caeai.2022.100068.

[12] W. Okonkwo and A. Ade-Ibijola, "Chatbots applications in education: A systematic review," *Comput. Educ. Artif. Intell.*, vol. 2, p. 100033, Jan. 2021, doi: 10.1016/j.caeai.2021.100033.

[13] Y. Lin and Z. Yu, "A bibliometric analysis of artificial intelligence chatbots in educational contexts," *Interact. Technol. Smart Educ.*, vol. 21, no. 2, pp. 189–213, Mar. 2023, doi: 10.1108/ITSE-12-2022-0165.

[14] G.-J. Hwang and C.-Y. Chang, "A review of opportunities and challenges of chatbots in education," *Interact. Learn. Environ.*, vol. 31, no. 7, pp. 4099–4112, Oct. 2023, doi: 10.1080/10494820.2021.1952615.

[15] S. Gökçearslan, C. Tosun, and Z. G. Erdemir, "Benefits, challenges, and methods of artificial intelligence (AI) chatbots in education: A systematic literature review," *Int. J. Technol. Educ.*, vol. 7, no. 1, pp. 19–39, 2024.

[16] H. Malmström, C. Stöhr, and W. Ou, "Chatbots and other AI for learning: A survey of use and views among university students in Sweden," Chalmers Univ. Technol., 2023, doi: 10.17196/CLS.CSCLHE/2023/01.

[17] P. Polakova and B. Klimova, "Implementation of AI-driven technology into education: A pilot study on the use of chatbots in foreign language learning," *Cogent Educ.*, vol. 11, no. 1, Dec. 2024, doi: 10.1080/2331186X.2024.2355385.

[18] O. Yetişensoy and H. Karaduman, "The effect of AI-powered chatbots in social studies education," *Educ. Inf. Technol.*, vol. 29, no. 13, pp. 17035–17069, Sep. 2024, doi: 10.1007/s10639-024-12485-6.

[19] B. P. K., J. K. Too, and C. W. Mukwa, "Teacher attitude towards use of chatbots in routine teaching," *Univers. J. Educ. Res.*, vol. 6, no. 7, pp. 1586–1597, Jul. 2018, doi: 10.13189/ujer.2018.060719.

[20] R. Chocarro, M. Cortiñas, and G. Marcos-Matás, "Teachers' attitudes towards chatbots in education: A technology acceptance model approach," *Educ. Stud.*, vol. 49, no. 2, pp. 295–313, Mar. 2023, doi: 10.1080/03055698.2020.1850426.

[21] J. Belda-Medina and V. Kokošková, "Integrating chatbots in education: Insights from the Chatbot–Human Interaction Satisfaction Model (CHISM)," *Int. J. Educ. Technol. Higher Educ.*, vol. 20, no. 1, p. 62, Dec. 2023, doi: 10.1186/s41239-023-00432-3.

[22] C. Kooli, "Chatbots in education and research: A critical examination of ethical implications and solutions," *Sustainability*, vol. 15, no. 7, p. 5614, Jan. 2023, doi: 10.3390/su15075614.

[23] C. McGrath, A. Farazouli, and T. Cerratto-Pargman, "Generative AI chatbots in higher education: A review of an emerging research area," *Higher Educ.*, Aug. 2024, doi: 10.1007/s10734-024-01288-w.

[24] S. Roos, *Chatbots in Education: A Passing Trend or a Valuable Pedagogical Tool?* Uppsala Univ., 2018. [Online]. Available: https://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-355054

[25] M. Aleedy, E. Atwell, and S. Meshoul, "Using AI chatbots in education: Recent advances, challenges, and use cases," in *Artificial Intelligence and Sustainable Computing*, Singapore: Springer, 2022, pp. 661–675, doi: 10.1007/978-981-19-1653-3_50.

[26] Christmann and S. Van Aelst, "Robust estimation of Cronbach's alpha," *J. Multivar. Anal.*, vol. 97, no. 7, pp. 1660–1674, Aug. 2006, doi: 10.1016/j.jmva.2005.05.012.

[27] M. Tavakol and R. Dennick, "Making sense of Cronbach's alpha," *Int. J. Med. Educ.*, vol. 2, pp. 53–55, Jun. 2011, doi: 10.5116/ijme.4dfb.8dfd.

[28] L. K. Fryer, K. Nakao, and A. Thompson, "Chatbot learning partners: Connecting learning experiences, interest, and competence," *Comput. Hum. Behav.*, vol. 93, pp. 279–289, Apr. 2019.

[29] Gligorea, M. Cioca, R. Oancea, A.-T. Gorski, H. Gorski, and P. Tudorache, "Adaptive learning using artificial intelligence in e-learning: A literature review," *Educ. Sci.*, vol. 13, no. 12, Dec. 2023, doi: 10.3390/educsci13121216.