International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 10 Issue 2, Mar-Apr 2026 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

Educational Chatbots

Matthew N. O. Sadiku[1], Matthias Oteniya[2], Janet O. Sadiku[3]

[1,2]Roy G. Perry College of Engineering, Prairie View A&M University, Prairie View, TX, USA
[3]Juliana King University, Houston, TX, USA

ABSTRACT

Chatbots are designed to mimic human conversation using text or voice interaction, providing information in a conversational manner. As education faces mounting challenges-overcrowded classrooms, diverse learning needs, and the relentless march of technology-AI-powered chatbots emerge as a promising solution to effectively address these challenges. Chatbots are reshaping the educational landscape, offering personalized learning experiences. Today, educational institutions are making huge profits with chatbots. Colleges, schools, and many educational institutions are now adopting and implementing chatbots because of their benefits. Chatbots are also gaining popularity in streamlining various administrative tasks in educational institutions. They have been applied in both instruction and learning within the education sector. The paper aims to investigate the potential benefits, challenges, and threats of chatbots in educational settings.

KEYWORDS: *chatbots, education, educational chatbots, automation.*

How to cite this paper: Matthew N. O. Sadiku | Matthias Oteniya | Janet O. Sadiku "Educational Chatbots" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-10 | Issue-2, April 2026, pp.876-886, URL: www.ijtsrd.com/papers/ijtsrd101479.pdf

IJTSRD101479

INTRODUCTION

Education is changing fast. From online classrooms to digital textbooks, technology is reshaping how students learn and how institutions operate. In the rapidly evolving landscape of education, technology is playing a pivotal role in transforming traditional teaching and learning methods. One such technological advancement that is gaining traction is the use of chatbots in education. The chatbot can work as an assistant to the teacher to provide a modern education. They can help teach students through a series of messages or chats made from a lecture. They can assist in learning specific topics to students through audio, images, videos, or document files. In this way, students learn better. The integration of chatbots in education has revolutionized how institutions interact with students and manage administrative tasks. They streamline processes like admissions, exam reminders, and class scheduling, reducing the workload for educators and administrative staff. From supporting administrative tasks to offering personalized learning experiences, chatbots are transforming how institutions operate [1].

CONCEPT OF CHATBOTS

Chatbots are also known as conversational agents, interactive agents, virtual agents, virtual humans, or virtual assistants. Chatbots, as part of AI devices, are computer programs designed to carry on a dialogue with users using natural languages. Healthcare has become an attractive market for chatbot applications. The main purpose of healthcare chatbots is to help patients in less time and for less money than it would take to visit a medical professional. Healthcare chatbots have great potential, but they still have a long way to go to win over consumers.

The first chatbot (Eliza) was developed in 1966 by Joseph Weizenbaum for psychiatric patients. Since then, Chatbots have gained popularity in all the domains such as banking, e-commerce, healthcare, education, and smart homes [2]. A chatbot describes a computer system or the situation in which human is chatting with the robot (computer).

Chatbots may be regarded as mimic systems which imitate the conversations between two individuals. They employ different degrees of human-like appearance and behavior, such as facial expressions, compassion, humor, and tone of voice. Thus, chatbots are computer programs with a conversational

user interface capable of emulating natural, conversational interpersonal exchange. Fueled by artificial intelligence (AI), chatbots are becoming a viable option for human–machine interaction.

Chatbots can be integrated into various messaging platforms, websites or mobile apps to interact with customers and prospects in real time. For example, healthcare chatbot can diagnose the disease and provide basic details about the disease before consulting a doctor. It is designed to reduce the healthcare costs and improve accessibility to medical knowledge. Healthcare chatbots depend on natural language processing (NLP) that helps users to submit their health problem [3]. Figure 1 illustrates a chatbot based on three key structures in AI [4].

There are essentially two types of chatbots: (1) Fixed chatbots: These are programs with fixed information and hence offer limited help; (2) AI-based: These chatbots thrive on dynamic learning and constantly update themselves using various customer interactions. An AI-based chatbot has three domains: databases, natural language processing (NLP), and machine learning (ML). Mostly chatbots are some kind of computer programs that use natural language processing (NLP) for interpreting the user input and generating the corresponding response. In other words, NLP helps users to submit their problem about the health. The aim of the system is to replicate a person's discussion. Chatbots interact with users using natural languages. Chatbot may ask a review of symptoms and relevant information such past medical or surgical history. It provides response by use of an efficient Graphical User Interface (GUI). The GUI is an artificial creation invented to enable interactions between human and computers. The chatbot system helps users to freely submit their complaints and queries regarding health by voice since customer satisfaction is the major concern for developing this system [4,5]. Figure 2 shows the evolution of chatbots [6].

One may also regard a chatbot as a software system that allows you to simulate real conversations between devices and users by means of a conversational interface [7]. Chatbots use three types of conversation styles [8]: static, semi-automated, and fully-automated conversation dialogue. The static conversation style is rule-based and it is easy to build. Automated refers to the generative-based model, which uses deep learning models to build interaction. This is very complex and requires a lot of training data. The semi-automated automates some parts while the rest is handled by a human. Figure 3 shows that a chatbot is designed to answers questions with proper answers [9], while Figure 4 provides some examples of what chatbots can do [10].

EDUCATIONAL CHATBOTS

The traditional education system faces several issues, including overcrowded classrooms, a lack of personalized attention for students, varying learning paces and styles, and the struggle to keep up with the fast-paced evolution of technology. The landscape of education has undergone significant transformations with the advent of digital technologies. Online education has unlocked a spectrum of opportunities and has provided the benefit of learning in a flexible and globally accessible environment. Among recent innovations in education, chatbots stand out as a game-changer, revolutionizing how students, teachers, and educational institutions interact and engage. Chatbots are being used in schools and universities to improve learning, offer instant support, and automate tasks. They can be an asset to researchers in the education industry. AI chatbots can provide immediate support by answering questions, offering explanations, and providing additional resources. They can also act as virtual teaching assistants, supporting educators through various means. Figure 5 is a representation of educational chatbots [1].

Some educational institutions are increasingly turning to AI-powered chatbots, recognizing their relevance, while others are more cautious and do not rush to adopt them in modern educational settings. Chatbots specialize in personalized tutoring, homework help, concept learning, standardized test preparation, discussion and collaboration, and mental health support. The integration of chatbots in education offers benefits such as immediate assistance, quick access to information, enhanced learning outcomes, and improved educational experiences. It has the potential to transform support services, improve accessibility, and contribute to more efficient and effective learning environments. In terms of application, chatbots are primarily used in education to teach various subjects, including but not limited to mathematics, computer science, foreign languages, and engineering [11].

APPLICATIONS OF EDUCATIONAL CHATBOTS

Chatbots can be used to support teaching and learning in many ways. They can be applied across various learning domains, including computer science, language learning, and general education. They enhance learning and operations by providing personalized support, instant feedback, and 24/7 assistance. They help educators save time on administrative tasks while improving student

engagement and learning outcomes. Figure 6 shows some use cases of educational chatbots [12]. Common applications of educational chatbots include the following [1,13,14]:

- *K-12 Education*: AI chatbots are redefining how K-12 students engage with learning by addressing individual needs at scale. What sets K-12 applications apart is their focus on inclusivity. Chatbots equipped with multilingual capabilities and text-to-speech features ensure that students with disabilities or non-native speakers can access resources equitably. This approach aligns with universal design principles, making education accessible to all. Integrating chatbots in K-12 education could transform classrooms into more adaptive, student-centered environments.
- *Higher Education:* AI chatbots in higher education are revolutionizing student support by streamlining administrative and academic processes. A key innovation lies in integrating chatbots with Learning Management Systems (LMS). By doing so, institutions enable seamless access to course materials, personalized feedback, and collaborative tools. This approach fosters a more cohesive learning experience, bridging gaps between administrative and academic support.
- *Teaching Assistance:* Teachers often juggle multiple responsibilities, from lesson planning to grading. A chatbot can be used as an assistant to the teachers. AI chatbots can attend to every student individually by identifying their learning habits and giving them tutoring assistance accordingly. Because of artificial intelligence, chatbots can help teachers in doing their work without getting them stressed out or exhausted. Chatbots can assist with classroom management, allowing teachers to focus on teaching and personalized support.
- *Student Engagement:* Chatbots have played a vital role in bridging the engagement gap between teachers and students. Nowadays, students find attending classes and going to college to study a bit boring. They are more engaged with their digital devices and accustomed to instant messaging. They are on social media platforms and many other sites to communicate with each other and get solutions to their assignments and homework. They like to get instant answers and solutions within a few clicks, and students easily switch to another option if they do not get it. The education sector can integrate chatbots, educate students with help and virtual classes, and increase engagement. By turning passive learning into interactive experiences, chatbots foster greater engagement.
- *Feedback:* Regardless of the business you work in, everyday feedback collection is crucial. Feedback is essential for continuous improvement in education. AI-powered chatbots can provide detailed feedback on student assignments, highlighting areas of improvement and offering suggestions for further learning. Chatbots deliver instant feedback by answering questions, clarifying doubts, and even correcting quizzes. This immediacy keeps students engaged, helps them spot and fix mistakes quickly, and encourages proactive learning. After every discussion or process has been completed, chatbots in the education sector can assist in gathering feedback from all stakeholders. This can assist schools in gathering important data and addressing issues that lead to subpar outcomes.
- *Sentiment Analysis:* Understanding student sentiment is crucial for improving educational outcomes. Chatbots can analyze the language and tone of student interactions to gauge their emotional well-being. This data helps educators identify students who may be struggling and provide timely support or intervention.
- *Personalized Learning:* Treating students the same way will not benefit many students because every student's grasping power and understanding level is different. Chatbots adapt to each student's learning pace and style, offering customized assistance. They can quickly help students by resolving problems, customizing each student's interactions, and providing the best learning experience for each student. Personalized learning with the help of a chatbot will surely make the learning experience effective. It improves comprehension, retention, and confidence. As shown in Figure 7 educational chatbots are the future of personalized learning [15].
- *Skills Development: A* chatbot can aid in the enhancement of writing skills (by offering suggestions for syntactic and grammatical corrections), foster problem-solving abilities (by providing step-by-step solutions), and facilitate group discussions and debates (by furnishing discussion structures and providing real-time feedback).
- *Admission Process:* The admission process can be overwhelming for both students and educational institutions. Chatbots simplify this process by guiding applicants through each step, from filling out forms to submitting required documents. They

can answer frequently asked questions about admission criteria, deadlines, and course offerings, making the process smoother and more efficient.

- *Examinations:* Educational chatbots play a vital role in examinations and assessments. They can administer quizzes and tests, grade objective questions instantly, and provide feedback to students. This automation not only saves time but also ensures unbiased and consistent grading.

BENEFITS

A chatbot can be used as an assistant to the teachers. No matter what academic level or subject it is, AI chatbots can be used by students and institutions of learning. Right from teacher's assistants to student support, there are many ways in which chatbots are gaining popularity. Instructors can use ChatGPT as a skills assessment tool to evaluate the proficiency of students in a wide range of subjects. Other benefits of educational chatbots include the following [1,6]:

- *Automation:* Chatbots are introduced to handle repetitive tasks, such as answering frequently asked questions. From managing admissions to scheduling exams, AI chatbots automate numerous administrative tasks. This not only reduces the workload on staff but also minimizes errors and ensures efficiency in administrative processes.
- *24/7 Support:* One of the most significant benefits of chatbots in education is their availability. Unlike human support staff, chatbots are available 24/7, providing instant assistance to students and faculty whenever needed. This ensures that learning and support are not confined to traditional office hours.
- *Active Learning:* Educational chatbots promote active learning by engaging students in interactive dialogues, quizzes, and personalized learning modules. This interactive approach keeps students motivated and involved in their studies.
- *Student Interaction:* Many students hesitate to ask questions in a traditional classroom setting due to fear of judgment. Chatbots provide a safe, non-judgmental space for students to seek answers, fostering greater interaction and participation.
- *Data-driven Insights*: Chatbots collect and analyze vast amounts of data from student interactions. This data provides valuable insights into student behavior, preferences, and performance, enabling educators to make informed decisions and improve teaching strategies.
- *Timely Feedback:* Drawbacks in online education include the limited interaction of students with educators, resulting in delayed feedback, hindering their performance, and causing demotivation. Using AI chatbots can help students receive timely feedback and ease the burden on educators in answering repeated queries.

Figure 8 shows some of the benefits of using education AI chatbots [16].

CHALLENGES

In spite of the benefits, using AI chatbots in education comes with its own set of challenges, that can impede students' learning and create hurdles for educators. Challenges like data privacy, data security, and accessibility remain. Chatbot technologies pose ethical concerns regarding plagiarism, impacting overall academic integrity. ChatGPT is known to have limitations in handling complex tasks, which may limit its use in certain areas. Other challenges of educational chatbots include the following [6,17,18]:

- *Privacy Concerns*: Privacy and security are crucial for any organization when it comes to integrating new technology into its existing infrastructure. They are key concerns in integrating AI chatbots into education systems. Unauthorized access can lead to data breaches and can compromise students' personal information. The integration with LMS platforms needs a thorough assessment to evaluate the security risks and privacy concerns.
- *Security Concerns:* Security concerns show the possibility of attackers using AI chatbots such as ChatGPT to create phishing attacks and exploit the platform through code changes. Institutions that lack security policies and infrastructure can compromise their platform to vulnerable attacks through the integration of AI chatbots within their system. To mitigate and prevent security threats, institutions can enforce stringent security and data access protocols.
- *Ethical Concerns:* The integration of AI chatbots in education raises several ethical implications, particularly concerning data privacy, security, and responsible AI use. With the ability to generate text in natural language, academic integrity, and plagiarism are key concerns in adopting ChatGPT in educational platforms. AI chatbots can also be used by students to rephrase the generated data or ideas and claim them as their own. Plagiarism plays a critical role in protecting academic integrity and the ethical foundation of education. It is one of the core problems associated with

such technology, where the information generated by AI chatbots could resemble or be the ideas and work of authors without acknowledging or giving them credit. This poses a critical concern in the education sector.

- *Bias:* Many AI chatbots rely on training data that skews toward dominant cultural or linguistic norms, marginalizing minority groups. Educational institutions should collaborate to share diverse datasets, ensuring broader representation. This approach not only reduces bias but also enhances the chatbot's ability to serve multilingual and multicultural student populations effectively.
- *Data Quality:* The accuracy and trustworthiness of data are other significant concerns when using AI chatbots in education. Inconsistent data formats across systems can lead to errors in chatbot responses. Encryption techniques can be implemented to secure and protect the data; however, this may involve further complexities and challenges. For example, within the field of medical education, it is crucial to guarantee the reliability and accuracy of the data chatbots provide. If the training data used to develop an AI chatbot contains biases, the chatbot may inadvertently reproduce those biases in its responses.
- *Human Emotions*: AI chatbots can provide guidance and feedback in the form of human-like conversations. However, they lack the capabilities to understand human emotions. Educators play a vital role in the education system, and their core responsibilities and skills go far beyond just sharing knowledge. An aspect of education that cannot be changed by the doings of technology is the human touch of understanding emotions and building relationships.
- *Misinformation:* AI chatbots may provide biased responses or non-accurate information. This could mislead students and hinder their learning progress. The dependency, accuracy, and biased responses of ChatGPT have raised alarming concerns among researchers about adopting and using it in educational platforms. ChatGPT can produce incorrect information that may hamper the learning process and the integrity of education for users who frequently rely on such platforms. Producing incorrect or false information is a key concern in AI technology and is often referred to as AI hallucinations.
- *Overreliance:* Using ChatGPT daily can limit the ability to solve problems and generate ideas independently. Relying heavily on such technology may disrupt the learning process and lead to frustration if system failures or malfunctions occur. The heavy use of chatbots such as ChatGPT can greatly impact students' critical thinking process. Overreliance on ChatGPT can also hinder the principles of research as it enables students to become accustomed to the tool and refrain from seeking other sources to conduct research.
- *Language Limitations:* Learning a programming language can be a daunting task that involves understanding complex concepts about data structures, algorithms, and programming syntax. Students embarking on this journey often face challenges in understanding the concepts and the structure of the language, which eventually leads them to discontinue their learning. ChatGPT can help students overcome such obstacles by providing a personalized and interactive learning plan where students can gradually learn and enhance their problem-solving skills with real-time feedback. AI technologies have become advanced now to the point where they can emulate human behavior and generate text in natural language.
- *Effectiveness:* Effectiveness refers to the extent to which chatbots achieve their intended objectives, the performance based on automatic metrics, or the user experience of interacting with the chatbot. When examining the effectiveness of chatbots in education, the majority showed a positive effect, some were only partly effective, a minority were ineffective, and a few were unclear due to insufficient explanations in the respective studies.
- *Integration:* Many educational institutions already have established learning management systems (LMS) and other technology infrastructures. Integrating AI chatbots seamlessly with these existing systems can pose technical challenges. Compatibility issues, data synchronization, and interoperability should be thoroughly addressed during the implementation phase to avoid disruptions to the learning environment.
- *Regulatory Compliance:* Data privacy compliance is non-negotiable. Adhering to frameworks like GDPR or FERPA not only protects student data but also builds trust. Institutions can implement encryption protocols and anonymization techniques to mitigate risks. By addressing these factors, chatbots can evolve into robust, future-proof educational tools.

FUTURE OF EDUCATIONAL CHATBOTS

AI chatbots are no longer experimental; they are becoming essential tools in modern education. From personalizing learning experiences to reducing administrative burdens, they offer tangible benefits to students, teachers, and institutions. The benefits of AI chatbots and their assistance in education have made it far-reaching in the future. According to research, the education sector is among the top five sectors that have been profiting from chatbots. Teachers, parents, and students are taking advantage by conveniently experiencing the privilege of interacting with chatbots to get diversified and satisfying solutions. If your educational institution is looking for opportunities to deploy AI chatbots, then this is the right time. There are many things that students can explore with AI chatbots in the future in the educational sector. The classroom of the future is about tools like chatbots that empower students and educators every step of the way. The future of educations chatbots is illustrated in Figure 9 [13].

The future of chatbots in education looks promising, with advancements in artificial intelligence (AI) and machine learning (ML) driving further innovation. Recent developments in AI and ML have greatly improved AI chatbots. Chatbots will evolve into intelligent tutors, providing in-depth explanations and personalized guidance. Future chatbots will be capable of recognizing and responding to students' emotions, offering empathetic support. Since chatbots have enormous potential to improve teaching and learning, we will likely see even more widespread adoption of chatbots in education in the years to come. As technology continues to advance, AI-powered educational chatbots are expected to become more sophisticated, providing accurate information and offering even more individualized and engaging learning experiences [11].

The latest advancements in AI chatbots (such as ChatGPT) have proven to offer several benefits for students and educators. ChatGPT is an emerging and leading AI chatbot innovation that is based on the large language model (LLM), which uses the transformer architecture of generative pre-trained transformers. With the capabilities of producing natural human-like conversation, ChatGPT has immense potential for applying to a diverse array of industries such as education, healthcare, finance, emarketing, and ecommerce. Using ChatGPT in education can foster an active learning experience by responding to questions and offering spontaneous suggestions, hence creating a framework for an interactive learning model [6]. Figure 10 shows the limitations and drawbacks of ChatGPT in education [6].

CONCLUSION

A chatbot is a software program designed to simulate conversations with users via text or voice. The adoption of chatbots in education is revolutionizing the way students learn and institutions operate. Whether it is answering student queries, assisting in course recommendations, or helping with administrative processes, educational chatbots are redefining traditional education models. Educational institutions looking to stay ahead in this digital age must embrace chatbot technology to provide better support, engagement, and learning outcomes.

With the emergence of artificial intelligence, machine-learning, and chatbot technologies, the field of education has been transformed drastically. Educational chatbots are transforming the way institutions interact with their students. STEM students often use chatbots for problem-solving, while humanities students turn to them for brainstorming and writing support. Multilingual and culturally diverse students leverage chatbots for language assistance, and those with accessibility need to benefit from personalized, structured help. More information about chatbots in education can be found in the books [19-26] and the following related journals:

- Computers & Education
- International Journal of Educational Technology in Higher Education

REFERENCES

[1] "How chatbots in education are transforming student learning," https://www.bigdatacentric.com/blog/chatbots-in-education/

[2] R. V. Belfin et al., "A graph based chatbot for cancer patients," *Proceedings of the 5th International Conference on Advanced Computing & Communication Systems,* 2019, pp. 717-721.

[3] O. O. Oyebode and R. Orji, "Likita: A medical chatbot to improve healthcare delivery in Africa," https://www.researchgate.net/publication/330522151_Likita_A_Medical_Chatbot_To_Improve_HealthCare_Delivery_In_Africa/link/5c45f692458515a4c736683d/download

[4] S. Divya et al., "A self-diagnosis medical chatbot using artificial intelligence," *Journal of Web Development and Web Designing,* vol. 3, no. 1, 2018.

[5] R. Dharwadkar and N. A. Deshpande, "A medical chatBot," *International Journal of Computer Trends and Technology*. vol. 60, no. 1, June 2018, pp. 41-45.

[6] N. F. Davar, M. A. A. Dewan, and X. Zhang, "AI chatbots in education: Challenges and opportunities," March 2025, https://www.mdpi.com/2078-2489/16/3/235

[7] S. Valtolina, B. R. Barricelli, and S. D. Gaetano (2019): "Communicability of traditional interfaces VS chatbots in healthcare and smart home domains," *Behaviour & Information Technology,* 2019.

[8] A. Fadhil and G. Schiavo, "Designing for health chatbots," https://arxiv.org/ftp/arxiv/papers/1902/1902.09022.pdf

[9] "What is chatbot marketing and why it's the future of marketing: Examples, uses & benefits," February 2021, https://www.ringcentral.com/gb/en/blog/what-is-chatbot-marketing-and-why-its-the-future-of-marketing-examples-uses-benefits/

[10] "The best free chatbot platform," September 2019, https://in.pinterest.com/pin/346988346289381600/

[11] L. Labadze, M. Grigolia, and L. Machaidze, "Role of AI chatbots in education: Systematic literature review," *International Journal of Educational Technology in Higher Education,* vol. 20, no. 56, October 2023.

[12] "AI chatbots in education: Implementing for LMS," December 2023, https://smartapp.technology/blog/ai-chatbots-in-education/

[13] S. Sinha, "The future of AI chatbots in the educational sector," July 2022, https://www.ameyo.com/blog/what-does-the-future-hold-for-ai-chatbots-in-education/

[14] D. Williams, "How to use AI chatbots in education in 2026," March 2026, https://www.noupe.com/blog/ai-chatbots-in-education/

[15] A. Pratap, "Education chatbots: The future of personalized learning," August 2023, https://www.meritto.com/blog/education-chatbots-the-future-of-personalized-learning/

[16] "AI chatbots in higher education: Benefits and use cases," https://raccoongang.com/blog/ai-chatbot-for-higher-education-top-benefits-use-cases/

[17] T. Debets et al., "Chatbots in education: A systematic review of objectives, underlying technology and theory, evaluation criteria, and impacts," *Computer & Education*, vol. 234, September 2025.

[18] H. Ijaz, "Using AI chatbots in education: A comprehensive guide," January 2025, https://pollthepeople.app/ai-chatbots-education-guide/

[19] M. Burns, *Using AI Chatbots to Enhance Planning and Instruction*. ASCD, 2023.

[20] A. Hawthorn, *Chatbot Building for Beginners: Create Your Own Simple Chatbots and Conversational Assistants Without Heavy AI Math.* Kindle edition, 2025.

[21] G. Smith, *Chatbot For Beginners: Chatbot Development, AI Chatbot, Building Chatbot, Tutorials and Guide.* Independently Published, 2024.

[22] A. Freed, E. Rozsa, and C. Jacobs, *Effective Conversational AI: Chatbots that Work*. Manning, 2025.

[23] D. Sands, *AI Chatbots Explained: Your Conversational Assistant.* Bowker, 2025.

[24] K. N. Mirabella and E. Butow, *AI ChatBots For Dummies.* For Dummies, 2026.

[25] A. Mishra, *The Ultimate Guide to Earning Online Without Coding: Harnessing Technology for Profitable, No-Code Income Streams (AI chatbot).* Independently Published, 2025.

[26] R. Ciesla, *The Book of Chatbots: From ELIZA to ChatGPT.* Springer, 2024.

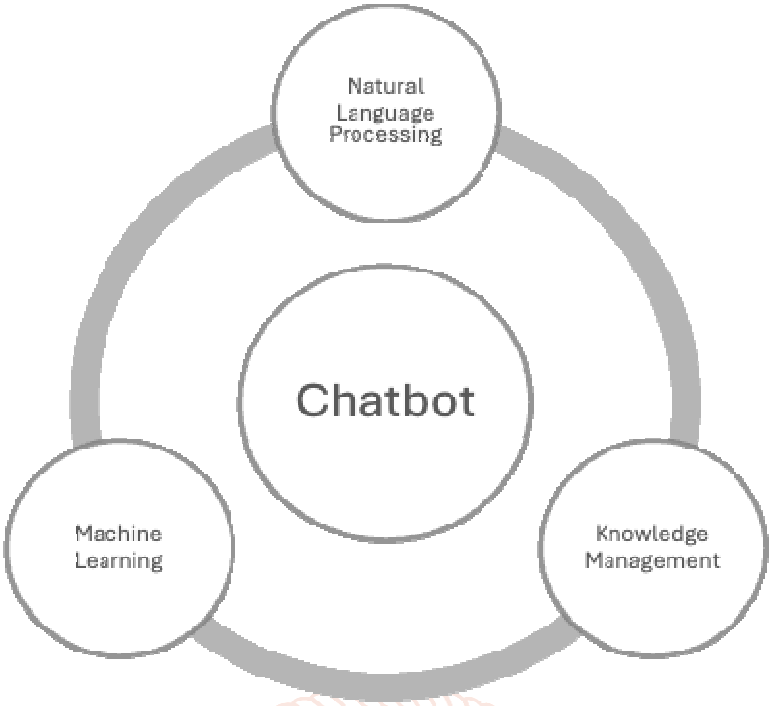

Figure 1 A chatbot based on three key structures in AI [4].

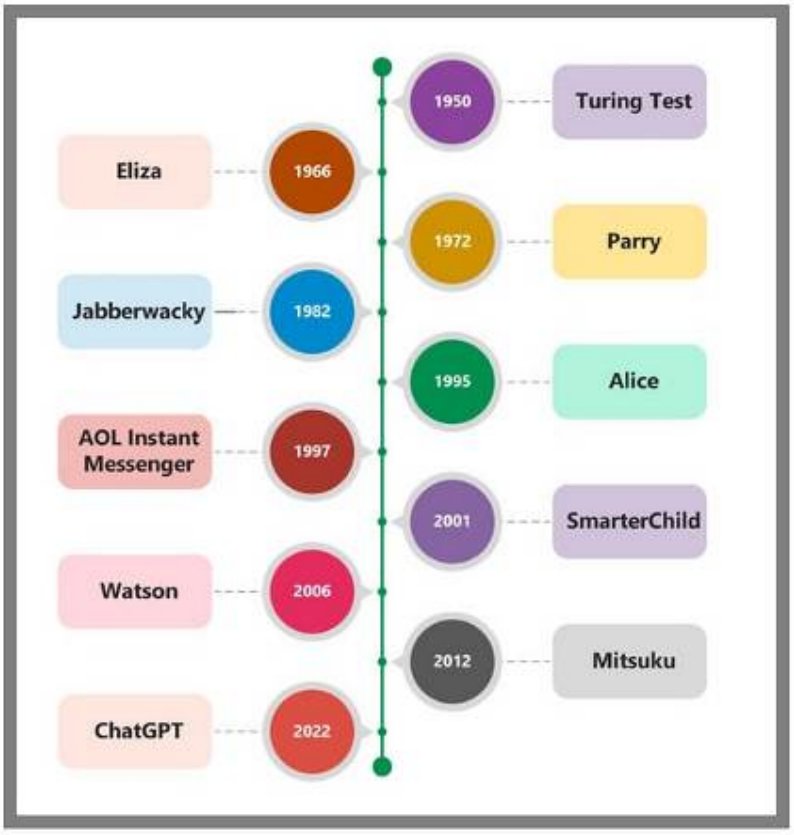

Figure 2 The evolution of chatbots [6].

Figure 3 A chatbot is designed to answers questions with proper answers [9].

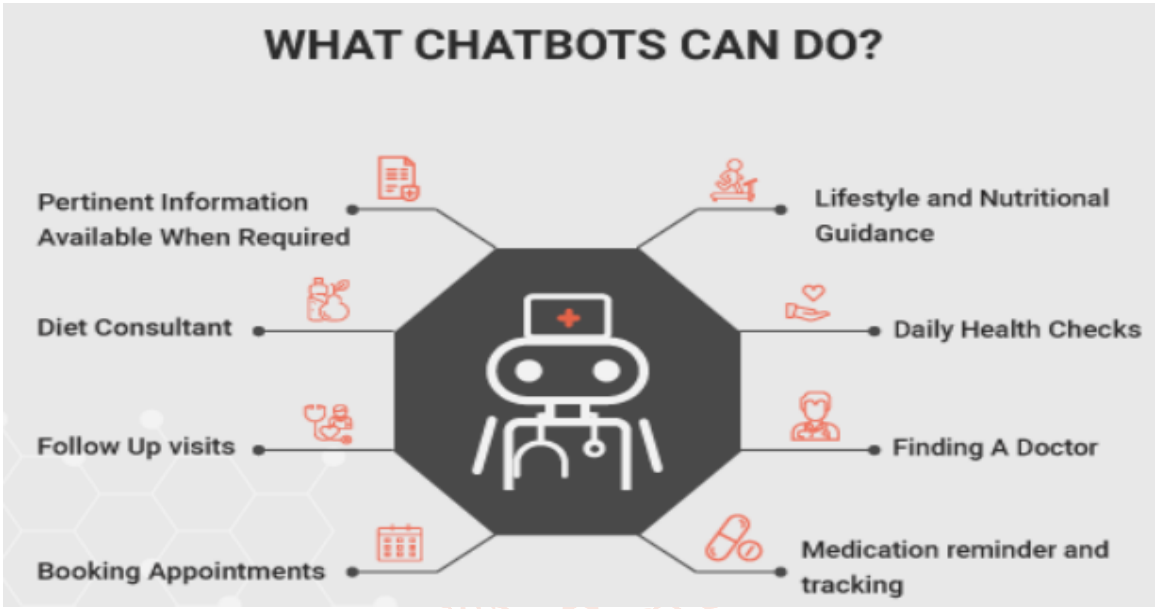

Figure 4 Typical examples of what chatbots can do [10].

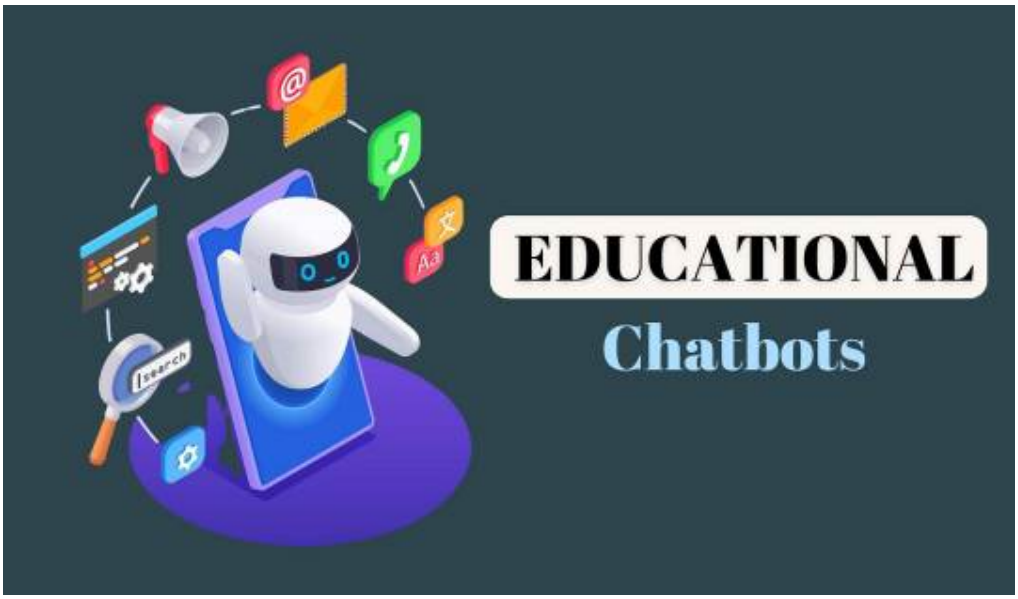

Figure 5 A representation of educational chatbots [11].

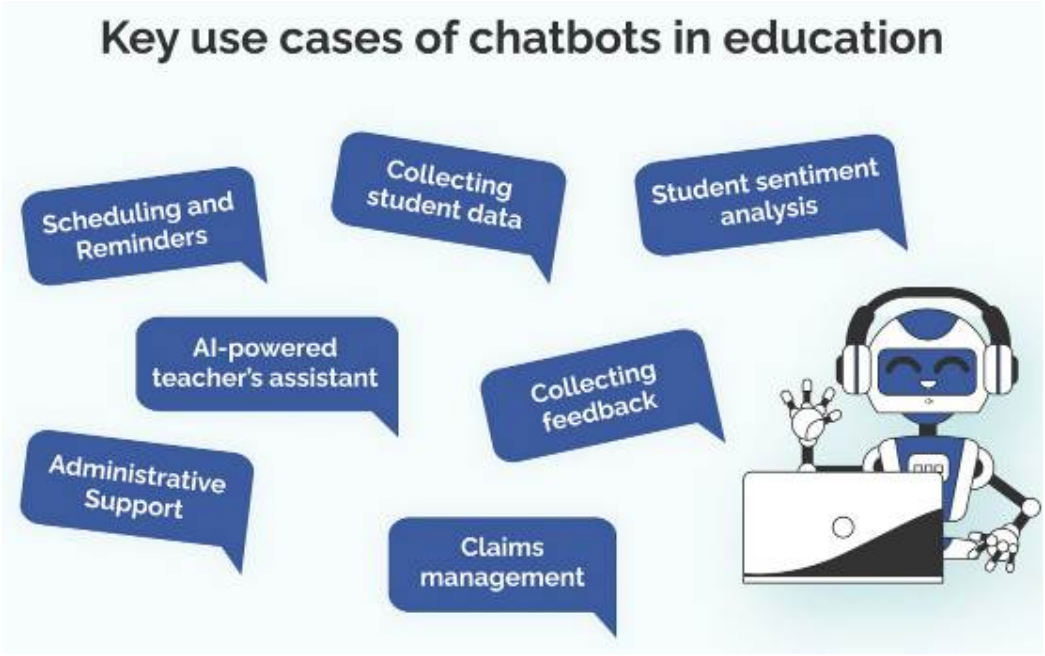

Figure 6 Some use cases of educational chatbots [12].

Figure 7 Educational chatbots are the future of personalized learning [15].

Figure 8 Some benefits of using education AI chatbots [16].

Figure 9 The future of educations chatbots [14].

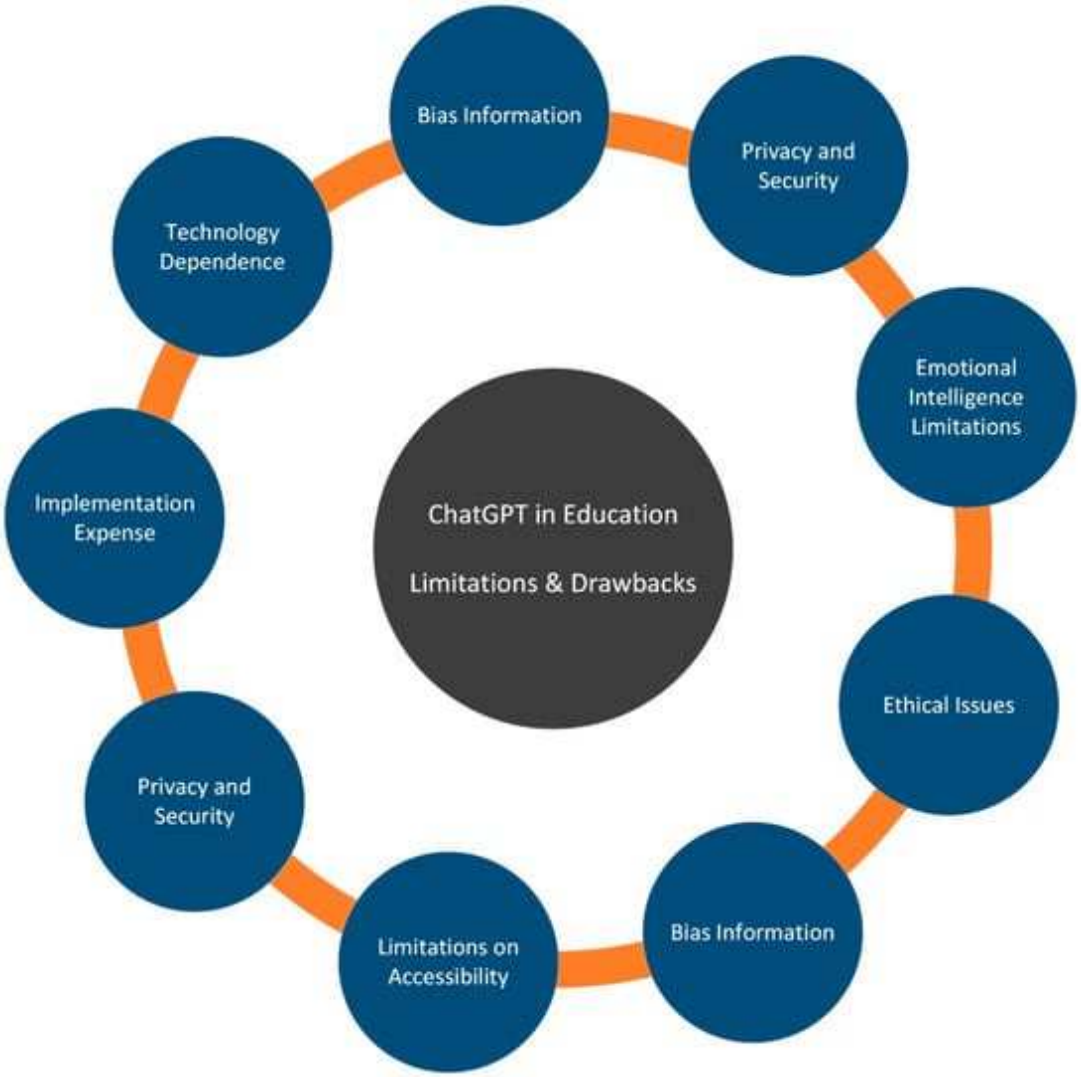

Figure 10 The limitations and drawbacks of ChatGPT in education [6].