International Journal of Applied Ethics, Vol-11 (2025), 37–41
doi:10.1017/

Research Paper

Dynamics of Chat GPT in the Higher Education System

Sarita Singh[1]

[1] Sitananda College, Nandigram, Vidyasagar University, W.B., India-721102.

Abstract

This Paper Presents a comprehensive benefits of ChatGpt as the set of Human Learning Feedback and mechanisms of Large language learning model in the sphere of education and in different sectors. The concept of AI ChatGpt invented when an open AI chatbot and a large-scale neural network-based language model came together. The generative pre-trained transformer tool developed by the top AI research organization in the world created the cutting-edge language model called ChatGPT. These comprehensive benefits of ChatGpt in the form of Human learning feedback and language learning model can enhance the adaptability and performance of students in diverse domains through large scale pre-training, instruction fine-tuning by providing instant feedback. The application of ChatGPT has the potential to change and revolutionize learning and how 21st-century students will adopt this approach in the field of education. Hence, this article highlighted the potential benefits and some of the significant aspects of the current ChatGPT version. In addition, it also identified the limitations of using ChatGPT in higher education and explored how it can be used for research purposes. Taking into consideration the research study has tried to find out the following answers- where it traces the history of ChatGPT and highlighted the application of ChatGPT in education with its critical aspects. In this regard, a conceptual study is performed by using the secondary source of data as per the framed research questions. The findings of the study are helping us to identify the Features of AI ChatGPT in the innovative teaching-learning system of education and as a whole.

Keywords: *ChatGPT, teaching-learning, learners, education.*

(Received 02 15 2025; Accepted 06 13 2025)

1. Introduction: Mechanism of ChatGPT in the field of Education

Artificial intelligence (AI) has grown rapidly over the past few decades and changed many facets of life. It has the capacity of a computer system to simulate the functioning of the human brain. It includes obtaining information in the form of outside data, learning via instruction, and accomplishing the intended goals that are designed for learning **Montenegro-Rueda et al.** (2023). The integration of artificial intelligence in education has yielded notable results, including enhanced educational process efficiency, global learning promotion, personalized learning, more intelligent content creation, and optimized educational management in terms of efficacy and efficiency. Modern technologies are essential for streamlining the teaching-learning process. Education is a process in which learning transcends the mere acquisition of knowledge rather than being confined to a single output. Thus, it can be said that artificial intelligence (AI) is a new technology that has enormous promise for the education sector. AI-based systems can support individualized learning by adjusting to the needs and interests of individual students **Laato et al.** (2023). Further, owing to its potential benefits of Chat GPT it enhances the students' learning experiences and has attracted a lot of interest in the educational setting. This system is capable of meeting the specific needs of each student, giving prompt feedback, and helping students grasp difficult ideas because it responds quickly and individually. By adjusting to each student's learning rate and providing ongoing support throughout the process of acquiring knowledge, it, therefore, becomes a potentially useful instrument that encourages active engagement and cognitive growth **Lund and Wang** (2023).

Table 1. How Chat GPT can Support the Students autonomy for safeguarding the Academic Integrity

Personalised Style of Learning
Tailored method of learning
Continuous learning 24/7 Availability
Ceaseless Access
Students Support & Engagement
Multimodal interactive session & Assignment
Natural Language Processing
Research Information Retrieval Network
Supervised & Un-Supervised Training
Instant Feedback
Transfer Learning

✉**Author for correspondence:** Sarita Singh; ssarita448@gmail.com.
Cite this article: Singh S., Dynamics Of Chat GPT In The Higher Education System *International Journal of Applied Ethics* **11(2025)**, 37–41. https://doi.org//.

Related Literature 1

Table 2. Study related to Practical of ChatGPT as Reinforcement Learning with Human Feedback (RLHF) model in the sphere of education

Area	Authors & Year	Study Area	Findings
ChatGpt as AI Language learning model	**Qing Zhou et al.** (2025)	Impact of AI-Chatbot	AI Chatbots accelerated into a mobile-assisted blended learning framework significantly that improve english communicative fluency and other foreign language.
AI & Education	**Iris Cristina Peláez-Sánchez et al.** (2024)	Impact of Large Language model	LLMs can enhance education by fostering collaborative & cooperative atmosphere of learning. It also improve quality content of learning and ethical considerations.
Educational Implications of AI-Assisted Language Learning Model	**T. Shaik et al.** (2022)	AI-Assisted Language Learning Models in Higher Education	AI-Assisted Language Learning Models in Higher Education can help identify areas of improvement in educational infrastructure, learning management systems, teaching practices, and study environments through NLP techniques like sentiment annotations, entity annotations, text summarization, and topic modeling.
Integration of AI Technologies in Education	**Qi Chang et al.** (2022)	AI-assisted integrated teaching-learning framework (AL-ITLF) in higher education	(AL-ITLF) in higher education improves efficiency, adaptability, and effectiveness, offering high accuracy, performance, and lower processing costs compared to traditional schooling.
Role of ChatGPT in language learning	**Jin Ha Woo et al.** (2021)	The language learning model of AI-based	AI-based language learning tools, utilizing machine learning and natural language processing, can improve language abilities and knowledge in learners.
Application of ChatGPT as a language learning tool	**Xelling Chen et al.** (2021)	AI-assisted personalized language learning	AI-assisted personalized language learning improves language outcomes and student satisfaction, with Taiwanese institutions leading the field and using intelligent tutoring systems, natural language processing, and artificial neural networks.
Integration of ML in Education	**Valentin Kuleto et al.** (2021)	AI and Machine learning	AI and ML enhance learning incorporation in higher education institutions by enriching students' skills, cooperative learning, and feasible research culture.

Related Literature 2

Table 3. Study related to Mechanism of AI-Assisted Language Learning Model and its impact on Higher Education

Area	Authors & Year	Study Area	Findings
Analysis of RLHF	**Shannon Lodoen et al.** (2025)	RLHF Model for Human Feedback	RLHF model can enhance massive generative AI Chatbots that make interactions and response appear more human like-potentially affecting transparency, trust, bias and interpersonal relations.
ChatGPT as medium of fine tuned information m	**S. Pulari et al.** (2025)	RLHF Model for collecting information	The Study highlighted that RLHF models used for summarize information including a human strategy, and merging various goals that improving the performance of the overall system.
ChatGPT as RLHF Model	**Satchal Y. Patil et al.** (2024)	Improving Conversational AI Model	ChatGPT serves as a transformer model accumulating the RLHF Significantly in the area of learning that can provide more accurate, reliable and adaptable response in different sectors like- customer service, education and healthcare.
ChatGPT as Reinforcement Learning with Human Feedback (RLHF)	**Deep Ganguli et al.** (2023)	Language models trained with reinforcement learning	(RLHF) can morally self-correct by following instructions and learning complex normative concepts of harm like stereotyping, bias, and discrimination.
Functions of Algorithms	**Banghua Zhu et al.** (2023)	RLHF algorithms in Instruct GPT	RLHF algorithms in Instruct GPT have shown empirical success and provide new insights for algorithm design.
Application of ChatGPT as RLHF model	**David Lindner et al.** (2022)	Role of RLHF in Human Interactions.	ChatGPT is a Reinforcement Learning with Human Feedback (RLHF) model that learns from interacting with humans.
Advantages of RLHF in Education	**Josh Abramson et al.** (2022)	Reinforcement learning from human feedback (RLHF)	Reinforcement learning from human feedback (RLHF) effectively improves simulated, embodied agents' performance in complex, embodied domains without programmatic reward functions.
Impact of the RLHF Model on Education	**Yuntao Bai et al.** (2022)	Applying Area of RLHF	RLHF training improves performance on almost all NLP evaluations and is compatible with training for specialized skills like Python coding and summarization.

2. Need of the Study

- These days, the optimal use of technology resources and the delivery of services is dependent upon Information and Communication Technology (ICT) in every organization.
- The demand for speedier services is increasing, and artificial intelligence (AI) based solutions are being adopted by businesses worldwide, including in India. As a result, the global chatbot industry is expected to develop within the next ten years. Because of the rising demand for smartphones and the greater usage of messaging apps in the AI era, the chatbot market is expanding at an unprecedented rate.

- The educational sector stands to gain a great deal from the use of this technology. Inculcation of AI applications in education surely enhances productivity, communication, learning, and effective teaching support, and reducing uncertainty from interactions is all possible with it. This technology can be used as an engagement tool by a new education platform to address cutting-edge issues in education.
- Due to its numerous benefits, OpenAI's ChatGPT is swiftly gaining popularity. It has a strong creative model with the potential to transform the ways humans communicate and engage with technology. In this article author has suggested sophisticated uses of Chat GPT as a language learning mechanism and as a model of Reinforcement learning with communicative feedback support through which teachers can make the teaching-learning process more interesting and dynamic.

3. Methodology

This conceptual work is centred on the Dynamics of ChatGPT and its integration into the entire system of higher education & learning. The idea of this model is taken from the comprehensive features of ChatGPT and various research literature related to this topic & and the current dynamics of education system. Hence content analysis method is adopted to perform this study.

4. Research Question

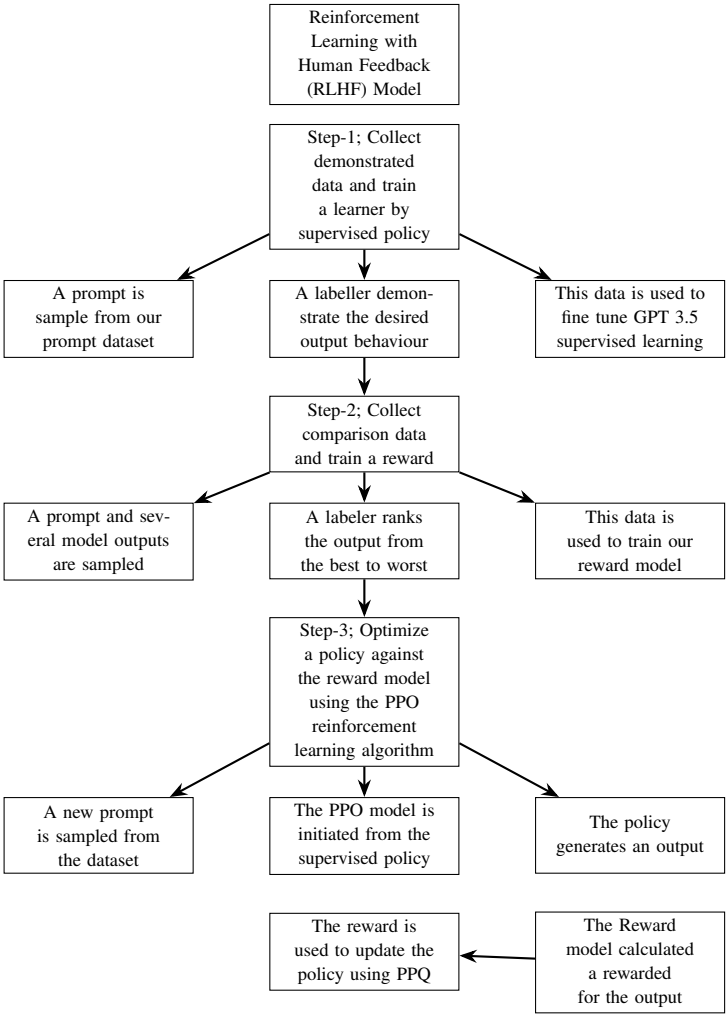
1. Is the features of ChatGPT as a Reinforcement Learning with Human Feedback (RLHF) model can be executed in different areas of education ?
2. How the mechanism of the AI-Assisted Language Learning Model and its impact improve the circle of higher education system ?

5. Analysis of RQ1

RQ1. Is the features of ChatGPT as a Reinforcement Learning with Human Feedback (RLHF) model can be executed in different areas of education ?

ChatGPT uses a method of deep learning that involves teaching a neural network to learn from a large quantity of data. The Chat GPT neural network is made up of several artificial neuronal layers that cooperate to comprehend the structure and patterns of language. The model learns the pattern and connections between words and phrases by being trained on a big corpus of text data. To enhance the ideas underpinning GPT, a two-stage procedure is used: a) generative unsupervised pre-training using unlabelled data b) discriminative supervised fine-tuning to boost performance on certain tasks (**Erhan et.al., 2010; Budzianowski & Vulic, 2019; Saxena & Sharma, 2023**). Further, the working model of ChatGPT can be illustrated in several steps. In the first part, the user can input a command or question into the system and the model frequently generates a response as defined by the language patterns and relationship between the input variables. These reinforce & develop a relationship between the users and motivate them to satisfy their queries. The entire process is called the "Reinforcement Learning with Human Feedback (RLHF)" method of learning. The working pattern of this model will give a directive way to understand. Such as 1. Supervised fine-tuning model (SFT) 2. Reward Model (RM) 3. Supervised Fine-tuning model SFT via Proximal policy optimization (**Kalla (2023)**).

Figure 1



The overview of this model configured that Natural-sounding and clear responses are what make ChatGPT so successful. Through the processing and generation of text sequences by the model, transformers enable this with ease. Additionally, the model is trained on a sizable corpus of text data, which aids in its ability to understand linguistic nuances and produce responses that are acceptable for their context. Further, the way that ChatGPT is implemented and functions is intricate and advanced. Yet, the end product is a technological ability to produce responses with diverse prompts and inquiries that resemble the human mind. We predict that more unique applications and use cases will surface as ChatGPT develops and gets a better version of it. Extensibility is another asset of ChatGPT, as it enables it to manage various discussions at once and generate answers very frequently. Its adaptability eliminates the need for human intervention and optimize efficacy, making it the flawless solution for firms and organizations that need mechanized language translation or client services. The capacity of ChatGPT to manage several chats at once may result in quicker response times, which will eventually increase customer satisfaction. Another important benefit of ChatGPT is its customizable nature. By modifying its exercise set and procedure, it can be tailored to carry out particular functions or uses, like language transcription or client support. It is a very

adaptable and versatile tool because of its flexibility, which guarantees that its responses are personalized to the distinct needs of the user. Moreover, customization allows enterprises and firms to save time and money by automating these processes, increasing productivity and profitability.

6. Analysis of RQ2

RQ2. How the mechanism of the AI-Assisted Language Learning Model and its impact improve the circle of higher education system ?

By January 2023, 100 million monthly active users had already signed up for ChatGPT, an OpenAI web chatbot powered by GPT 3.5. With ChatGPT's popularity came the swift announcement of comparable services by rivals. Google, for instance, unveiled Bard, an LLM chat service that leverages its Language Model for Dialogue Applications (LaMDA) in February 2023. People in academics, business, and the general public have taken a keen interest in these LLM-based chatbots' ability to comprehend natural language and provide accurate responses to them. It's important to consider how LLM-based chat services can affect teaching and learning as they continue to advance and gain popularity.

This study suggests that AI-Assisted Language Learning Models in Higher Education improve language outcomes, personalize learning experiences, and enhance teaching efficiency by using intelligent tutoring systems, natural language processing, and machine learning techniques to analyse student feedback, recommend learning paths, and predict student performance. Hence, to answer the RQ.2 the researcher has focused on Open AI, a popular tool LLM service of ChatGPT has followed the three outlined steps-

Table 4.

Step-1 Conception	If students use the application of ChatGPT daily for two or three months for academic purposes then they would probably familiarize themselves with its core functionality and capabilities.
Step-2. Acquisition of Data	The second step is gathering data and making a list of every possible use of ChatGPT in higher educational instruction and learning. Further, by sketching it out and finding the new features of ChatGPT through social media, news articles, and using the app by themselves. Although OpenAI's tool and ChatGPT served as the primary source of information especially for collecting grey literature like newspaper stories and blog postings on particular websites.
Step-3 Assessment	The third step of evaluation can check and determine the potential effects of ChatGPT and identify the capabilities of ChatGPT on education and training. To do that a third analysis involved reflection and debate in postsecondary learning. **(Ray (2023))**

Table 5. Role of ChatGPT as a Language-Assisted Tool and its impact on the higher educational learning of Studentsmplication of ChatGPT in Education

AI ChatGPT	ChatGPT, as an LLM designed for dialogue, assists users in exploring their ideas and enhancing their critical thinking by providing conversational feedback. It enables users to inquire about specific topics they wish to gain further insights on.
Translation of Language	Users can translate text in multiple languages in both directions, as well as simplify text. This feature can be particularly useful for reading text, otherwise that would be difficult to understand.
Formulation of text	With ChatGPT, users can create text by responding to prompts. For instance, students can create comprehensive abstracts for their academic papers or comments from peer reviews,
Formation of Code	ChatGPT can generate computer code in different languages, much like text generation. This can speed up development work even though it's not perfect yet. For students, this creates new options in both technical and nontechnical sectors.
Appraisal of Sentiment	Students can more readily perform behavioral research on datasets, such as social media posts, to learn about participants' attitudes on a topic.
Recapitulating articles and essays	Lengthy articles can be swiftly summarized for students without requiring them to read through all the content. Transcripts, news stories, and social media threads can be processed in this way.
Speedy Communication	Students can correct their writing's grammar by using ChatGPT. Additionally, by rearranging sentences and paragraphs and offering words and phrases, ChatGPT can enhance communication in a more comprehensive way **(Laato et al. (2023))**.

Due to numerous features of OpenAI ChatGPT is swiftly gaining popularity and it serves as a natural language processing model that has the potential to transform the way humans communicate and engage with technology. However, it has a long way to go before and achieve the several ways that administer as a powerful way of learning. These are as follows-

1. Mechanization of Administrative Tasks: With the help of ChatGPT routine and administrative assignments can be generated by AI tools. This can support the staff use their time constructively for other prominent tasks.

2. Customized Learning: Customized educational experiences can be generated where the learning material can be generalized as per the customized needs. This will offer a more innovative and engaging learning environment.

3. Guidance & Support: ChatGPT can be used to provide self-directed ways of learning. It can support learners with home assignments, questions-answers, and give necessary inputs on their work.

4. Invention in Research: Investigators can employ this bot to process a massive data that generate conclusions, and provocative measures which will accelerate the research system and also can foster the innovation.

5. Development of Learning Material: Researchers and instructors can develop learning materials for teaching as well as research purposes like articles, and reports which can save time, and energy and allow teachers to focus on more important tasks like teaching-learning & research.

7. Conclusion

AI tools serve as a revolutionary change in the field of education where the whole system of education and public/private organizations are designed with the comprehensive features of AI. Hence, it is quite relevant to identify that the application of ChatGPT in higher education should be incorporated with ethical consideration and relevant safeguards to ensure that it is being used within appropriate ethical norms. Further, a vast knowledge base is available on ChatGPT to satisfy queries. There have been chatbots and conversational agents before ChatGPT, but nothing as potent has ever been made widely accessible to the public. However, nowadays, instructors of higher education and stakeholders incorporate this technology into the education & field of learning with open arms. Many research studies have shown that using AI can optimize human capacities for better output as well as provide reinforcement cum feedback, and serve as an excellent medium of communication like a human mind. Therefore, it is called as RLHF model with its customized and extensive features in the form of ChatGPT. Additionally, a connection related to natural language processing allows users to construct personalized chats with ChatGPT, an AI-powered Chatbot. For any application, from customer care to sales and marketing, it is made to let users build conversations fast and simply. So through this study, it can be justified that both the model of RLHF and the Language learning model give the learner interactive answers, logical power, and skill of thinking and analytical mind that are required for 21st-century learners. In essence, NEP-2020 has made a remarkable attempt to invigorate the current education system and establish the new vision of how education can be reformed and radical change can be brought to solve the issues of education in the modern technological age of learning. Further, more emphasis should be given to the skills of the students, because if the prospect of AI is not seized in its true sense and adopted as a supplementary tool then the system of education will land up as obsolete and ineffective skills.

References

Abramson, J., Ahuja, A., Carnevale, F., Georgiev, P., Goldin, A., Hung, A., Landon, J., Lhotka, J., Lillicrap, T., Muldal, A., Powell, G., Santoro, A., Scully, G., Srivastava, S., Tamara, V. G., Wayne, G., Wong, N., Yan, C., & Zhu, R., 2022. "Improving Multimodal Interactive Agents with Reinforcement Learning from Human Feedback." *arXiv (Cornell University)*. Available at: https://doi.org/10.48550/arxiv.2211.11602.

Bai, Y., Jones, A., Ndousse, K., Askell, A., Chen, A., DasSarma, N., Drain, D., Fort, S., Ganguli, D., Henighan, T., Joseph, N., Kadavath, S., Kernion, J., Conerly, T., El-Showk, S., Elhage, N., Hatfield-Dodds, Z., Hernandez, D., Hume, T., … Kaplan, J., 2022. "Training a Helpful and Harmless Assistant with Reinforcement Learning from Human Feedback." Available at: https://doi.org/10.48550/arxiv.2204.05862.

Chang, Q., Pan, X., Manikandan, N., & Ramesh, S., 2022. "Artificial intelligence technologies for teaching and learning in higher education." *International Journal of Reliability Quality and Safety Engineering*, 29(05). Available at: https://doi.org/10.1142/s021853932240006x.

Chen, X., Zou, D., Cheng, G., & Xie, H., 2021. "Artificial intelligence-assisted personalized language learning: systematic review and co-citation analysis." *2022 International Conference on Advanced Learning Technologies (ICALT)*, 241–245. Available at: https://doi.org/10.1109/icalt52272.2021.00079.

Ganguli, D., Askell, A., Schiefer, N., Liao, T., Lukošiūtė, K., Chen, A., Goldie, A., Mirhoseini, A., Olsson, C., Hernandez, D., Drain, D., Li, D., Tran-Johnson, E., Perez, E., Kernion, J., Kerr, J., Mueller, J., Landau, J., Ndousse, K., … Kaplan, J., 2023. "The capacity for moral Self-Correction in large language models." *arXiv (Cornell University)*. Available at: https://doi.org/10.48550/arxiv.2302.07459.

Kuleto, V., Ilić, M., Dumangiu, M., Ranković, M., Martins, O. M. D., Păun, D., & Mihoreanu, L., 2021. "Exploring opportunities and challenges of artificial intelligence and machine learning in higher education institutions." Available at: https://doi.org/10.3390/su131810424.

Kim, S. K., Kirchner, E. A., Stefes, A., & Kirchner, F., 2017. "Intrinsic interactive reinforcement learning – Using error-related potentials for real world human-robot interaction." Available at: https://doi.org/10.1038/s41598-017-17682-7.

Kalla, D., 2023. "Study and Analysis of Chat GPT and its Impact on Different Fields of Study." *International Journal of Innovative Science and Research Technology*, 8(3), 827–833. Available at: www.ijisrt.com.

Lindner, D., & El-Assady, M., 2022. "Humans are not Boltzmann Distributions: Challenges and Opportunities for Modelling Human Feedback and Interaction in Reinforcement Learning." *arXiv (Cornell University)*. Available at: https://doi.org/10.48550/arxiv.2206.13316.

Lodoen, S., & Orchard, A., 2025. "Ethics and Persuasion in Reinforcement Learning from Human Feedback: A Procedural Rhetorical Approach."

Laato, S., Morschheuser, B., Hamari, J., & Bjorne, J., 2023. "AI-Assisted Learning with ChatGPT and Large Language Models: Implications for Higher Education." *Proceedings - 2023 IEEE International Conference on Advanced Learning Technologies (ICALT 2023)*, July, 226–230. Available at: https://doi.org/10.1109/ICALT58122.2023.00072.

Lund, B. D., & Wang, T., 2023. "Chatting about ChatGPT: how may AI and GPT impact academia and libraries?" *Library Hi Tech News*, 40(3), 26–29. Available at: https://doi.org/10.1108/LHTN-01-2023-0009.

Montenegro-Rueda, M., Fernández-Cerero, J., Fernández-Batanero, J. M., & López-Meneses, E., 2023. "Impact of the Implementation of ChatGPT in Education: A Systematic Review." *Computers*, 12(8), 1–13. Available at: https://doi.org/10.3390/computers12080153.

Pulari, S., Umadevi, M., & Vasudevan, S., 2025. "Improved Fine-Tuned Reinforcement Learning From Human Feedback Using Prompting Methods for News Summarization." *International Journal of Interactive Multimedia and Artificial Intelligence*, 9, 59. Available at: https://doi.org/10.9781/ijimai.2025.02.001.

Patil, S., & Shrikhande, P., 2024. "Improving Conversational AI using Transformer and Reinforcement Learning from Human Feedback (RLHF)." *International Journal for Research in Applied Science and Engineering Technology*. Available at: https://doi.org/10.22214/ijraset.2024.65383.

Peláez-Sánchez, I., Velarde-Camaqui, D., & Glasserman-Morales, L., 2024. "The impact of large language models on higher education: exploring the connection between AI and Education 4.0." *Frontiers in Education*. Available at: https://doi.org/10.3389/feduc.2024.1392091.

Ray, P. P., 2023. "ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope." *Internet of Things and Cyber-Physical Systems*, 3(March), 121–154. Available at: https://doi.org/10.1016/j.iotcps.2023.04.003.

Shaik, T., Tao, X., Li, Y., Dann, C., McDonald, J., Redmond, P., & Galligan, L., 2022. "A review of the trends and challenges in adopting natural language processing methods for Education Feedback analysis." *IEEE Access*, 10, 56720–56739. Available at: https://doi.org/10.1109/access.2022.3177752.

Woo, J. H., & Choi, H., 2021. "Systematic review for AI-based language learning tools." *Journal of Digital Contents Society*, 22(11), 1783–1792. Available at: https://doi.org/10.9728/dcs.2021.22.11.1783.

Zhu, B., Jiao, J., & Jordan, M. I., 2023. "Principled Reinforcement Learning with Human Feedback from Pairwise or K-wise Comparisons." *arXiv (Cornell University)*. Available at: https://doi.org/10.48550/arxiv.2301.11270.

Zhou, Q., Hashim, H., & Sulaiman, N., 2025. "Supporting English speaking practice in higher education: the impact of AI chatbot-integrated mobile-assisted blended learning framework." *Education and Information Technologies*. Available at: https://doi.org/10.1007/s10639-025-13401-2.