ChatGPT Technology and Its Role in Promoting Creativity in Education

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Abstract

This study aims to achieve several main objectives. First, it aims to analyze the role of ChatGPT technology in promoting creative interaction between teachers and students in the context of education. Second, seeks to study the impact of ChatGPT technology on the development of students' creative skills, such as critical thinking, creative design, and innovation. Third, aims to explore the possibility of expanding the boundaries of creativity in education using ChatGPT technology. Finally, aims to identify potential future applications of ChatGPT technology in promoting creativity in education. The descriptive analytical approach was used, and the study tool was a questionnaire to identify the technology and its role in promoting creativity in education, and the research sample consisted of (92) university professors in the United Arab Emirates, and they were randomly selected. The results proved that there are statistically significant differences between university professors in the United Arab Emirates towards ChatGPT technology and its role in promoting creativity in education, which indicates its great role in promoting creativity in education.

Keywords: Chatgpt Technology, Creativity, Education, Creative Interaction, Critical Thinking, Creative Design, Innovation

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Introduction

In December 2022, the field of artificial intelligence, particularly the area of chatbot development and utilization, experienced a surge in growth with the launch of the ChatGPT chatbot. However, ChatGPT is not a new concept, as they have been in existence for almost six decades. The first chatbot, called ELIZA, developed by Weizenbaum in 1966, utilized pattern matching to simulate psychotherapist conversation with human patients. While ELIZA may be unfamiliar to the general public, many individuals are familiar with more modern virtual chatbot assistants, such as Amazon's Alexa and Apple's Siri, which operate on logical and virtual chatbot systems. The fundamental goal and premise of so-called chat-bots is that a computer converses with human clients in natural language in a manner that is as human-like as feasible (Bradeško & Mladenić, 2012). They are computer programs that mimic and process human communication, allowing people to interact with digital devices as if they were speaking with another person (Ciechanowski et al., 2019).

With the rapid advancement of technology, education is undergoing a remarkable shift in terms of tools and techniques used in the classroom. Among these innovative technologies, ChatGPT stands out as one of the most promising tools that contribute to enhancing creativity in the learning process.

ChatGPT technology is an AI-based system that can be used to create intelligent and advanced conversations between students and teachers. This technology is based on text analysis and automatic response, providing exciting opportunities for innovation and interactive learning. One of the notable features of ChatGPT technology is its ability to foster creative interaction between teachers and students. Through the ability to communicate and discuss in a direct and effective way, students can interact with educational content, ask questions, and express their ideas freely. This allows teachers to provide appropriate guidance and assistance and promote active learning and innovation.

In addition, ChatGPT technology contributes to the development of students' creative skills. Encourages conversational discussions and collaborative problem solving and promotes critical thinking and creative design. These skills allow students to tap into their creative potential and develop their abilities to find new and innovative solutions to complex problems. It is also important to note that creativity in education can be expanded using ChatGPT technology. In addition to creative interaction within the classroom, this technology can enhance communication and shared learning between students and teachers across time and space. Students can participate in online collaborative discussions and projects, allowing them to benefit from multiple experiences and opinions and foster the exchange of creative ideas.

ChatGPT are increasingly being used in education. Clarizia et al. (2018) introduced it as a useful technology for supporting education, as they enable one of the most important ways to promote and enable personalized learning, not only increasing support and inclusion of students but also significantly reducing the administrative workload of teachers and enabling them to focus more on curriculum development and research (Cunningham-Nelson et al., 2019). Their advantage is that they are an interactive mechanism compared to traditional e-learning systems (Kowalski et at., 2011), and their users are only limited by the creativity and imagination of the user (Roos, 2018). In 2021, Okonkwo and Ade-Ibijola presented a study in which they analyzed 53 articles from reputable digital databases, with the aim of understanding the use of ChatGPT in education, including basic information, benefits,

challenges, and suggestions for future research on the use of ChatGPT in education. Their study found that chatbot technology is used in various areas of education, including teaching and learning (66 %), administration (5 %), assessment (6 %), advisory (4 %), and research and development (19%). They highlight that the introduction of chatbot systems in education can bring personalized online learning and greater accessibility to learning materials, which students can access from anywhere and at any time. Lin and Chang (2020) and Murad et al. (2019) added that ChatGPT are good technological innovations that improve students' interest in learning, cognitive skills acquisition, and academic achievements. They also have a successful impact on students' motivation.

Recently, there has been increasing global interest in the importance and contribution of creativity in the learning process; to form the student's personality, form his identity, build his independence, direct his attention through experimentation, ask questions, identify, and solve the problem using mental imagination and creative self-expression, and find innovative alternatives by generating new ideas.

The use of ChatGPT in educational environments requires special skills from teachers. Most existing research on the use of ChatGPT focuses on the opportunities they offer teachers and other educators to assess curriculum goals. However, it is difficult to find research that explores ChatGPT Technology and its Role in Promoting Creativity in Education.

The number of studies exploring the use of chatbots in education is increasing (e.g., Kuhail et al., 2023; Yildiz Durak, 2023; Hew et al., 2023), The main objective of the current research is to identify the ChatGPT technology and its role in promoting creativity in education through: Building a questionnaire on ChatGPT technology and its role in promoting creativity in education and calculating its honesty and stability, Revealing the reality of the application of ChatGPT technology and its role in promoting creativity in education, Reaching recommendations and suggestions on ChatGPT technology and its role in promoting creativity in education.

Large language models are a form of generative AI that pro-dux human-like language (OpenAI, 2023a). OpenAI trains its text-generating models using machine learning algorithms on large amounts of text, including books, news articles, websites, and Wikipedia (Scharth, 2022). By processing terabytes of data, models acquire the patterns and structure of language, enabling them to provide users with relevant and meaningful content in response to their requests. When I asked ChatGPT to describe itself (prompt-Describe ChatGPT), it generated the following italicised text: ChatGPT is a language model developed by OpenAI. It is a variant of the ChatGPT (Generative Pre-training Transformer) model, which is trained on a massive amount of text data to generate human-like text. It can be used for a variety of natural language processing tasks, such as language translation, text summarization, question answering, and for chatbot applications. It can understand and respond to human inputs in a conversational way, making it well suited for interactive applications. ChatGPT can be fne-tuned on specific data sets and task, which means it can be customized to perform specific task and generate outputs that are more accurate and useful. ChatGPT can... "write stories, give life advice, even compose poems and code computer programs" (Scharth,2022, para. 2). There have been reports however that it... "produces fake citations and reproduces biases that exist in the literature" (Gleason, 2022, para. 7). According to cited ChatGPT output, "AI systems can perpetuate biases that are present in the data they are trained on. This can lead to unequal and unfair outcomes for students, particularly if the bias is related to factors such as race, gender, or socio-economic status" (Zhai, 2022, p. 7). OpenAI (2023) acknowledge in

their advice to educators that... "ChatGPT may produce content that perpetuates harmful biases and stereotypes, sometimes in subtle ways... the model is generally skewed towards content that reflects Western perspectives and people" (para. 18). ChatGPT has gone viral on social media, and anecdotal- tal evidence suggests that students are already familiar with it. It is safe to assume that undergraduate students are using ChatGPT or a similar software. Given ChatGPT's apparent usage and stakeholder concerns, it is crucial to evaluate its output about Promoting Creativity in Education. As far as I am aware, there has been no prior research that has examined the text generated by ChatGPT in relation to its Role in Promoting Creativity in Education. Also, there is little written about its utilisation as a research tool, Promoting Creativity in Education.

Chat GPT, a recent AI innovation by Open AI that quickly gained million users (Haque, et al, 2022) holds the potential for improving self-directed learning. Examining Chat GPT's ability to aid autodidactic. Learning is important for understanding how to best utilize chatbots and AI in education, and for guiding the future of education and technology-assisted learning. By understanding how ChatGPT can support independent study, educators and students can use these technologies to enhance their own learning and development. Additionally, this research can inform policy decisions on incorporating these technologies into educational settings.

The researcher sees Creativity and innovation are necessities, important elements, and basic features that should be available in the teacher, in the modern school principal and in the learner, as a result of the increasing ambitions, the multiplicity of needs, and their diversity, and the phenomenon of the knowledge age and the challenges it imposes in all aspects and fields of life are an essential point in the need to adopt creativity and innovation in the management of the educational process, and the leadership of the school of the era.

The researcher sees ChatGPT It is a powerful language model that relies on artificial intelligence to answer user questions creatively and write articles without quoting from another source. It can be used in different ways to enhance the learning experience and improve education Some of its benefits are providing a rich source of knowledge, reducing the cost of educational resources, access to knowledge to any student from anywhere and at any time, developing new teaching mechanisms that are more interactive, Contribute to the development of curricula and office tasks, Motivate students to think critically and creatively.

Research Focus

The aim of this study was to explore the ChatGPT Technology and its Role in Promoting Creativity in Education.

Research Tools, Procedures, and Results

This part describes the method and procedures of the field side of the current research, including the research methodology, the research community and its sample, the research tool, its validity and stability, the procedures followed by the researcher in the application process, in addition to the statistical methods and treatments used in data analysis.

First: Research Tools and Procedures

Research Methodology

The research used the descriptive analytical approach, due to its suitability for the purposes of the study, and the researcher prepared a questionnaire to identify the ChatGPT technology and its role in promoting creativity in education.

Research Community

The research community consisted of all university professors in the United Arab Emirates, whose number is (108).

Exploratory Research Sample

Where the survey sample consisted of (50) university professors in the United Arab Emirates.

Basic Research Sample

The current research sample consisted of (92) university professors in the United Arab Emirates, and they were selected randomly, and Table No. (1) shows the distribution of the study sample according to its variables.

Table 1: Distribution of Study Sample by Type

Variable	Groups	as	%
gender	males	46	50%
	females	46	50%
Chronological age	Less than 50 years old	46	50%
	More than 50 years	46	50%
Degree	Lecturer	15	15%
	Assistant Professor	17	35%
	Professor doctor	60	50%
Total		92	100%

It is clear from Table (1) that the study sample (46) of male professors by (50%) while females recorded (46) by (50%) and that the percentage of females is less than the percentage of males.

Research Objectives

The main objective of the current research is to identify ChatGPT technology and its role in promoting creativity in education through:
1. Building a questionnaire on ChatGPT technology and its role in promoting creativity in education and calculating its honesty and stability.
2. Revealing the reality of the application of ChatGPT technology and its role in promoting creativity in education.
3. Reaching recommendations and suggestions on ChatGPT technology and its role in promoting creativity in education.

Research Tool: Identify the Technology of Chat ChatGPT and Its Role in Promoting Creativity in Education

To achieve the goal of the research, the researcher prepared a questionnaire after reviewing the theoretical literature on the field of research and previous studies, because the questionnaire is one of the common tools in educational research, where researchers use it to obtain the reality of the already existing situation and conduct research related to trends and opinions.

The justifications for choosing the questionnaire tool are as follows:
- Suitability for the nature of the current research
- The possibility of distributing it to large numbers of examined people who live in distant geographical areas
- Easy to distribute, manage and analyze results
- Saving a lot of expenses and effort on the researcher

The researcher has developed the research tool, which is a questionnaire covering fifteen phrases (Appendix No. 1), about the technology of chat ChatGPT and its role in promoting creativity in education, where he developed it to collect information, according to the following steps:
1- Access to educational literature and previous studies related to the subject of study.
2- Using some previous questionnaire models.
3- Choose appropriate items and exclude others to avoid prolongation or repetition.
4- Modifying some items to suit ChatGPT technology and its role in promoting creativity in education.

The Tool Consisted of Two Parts

The first section: It consists of three variables, including gender, function, and the dependent variable is ChatGPT technology and its role in promoting creativity in education.

The second section: included (15) phrases that include ChatGPT technology and its role in promoting creativity in education.

The research relied on a quintuple gradient according to the Likert method as follows: the degree of "strongly agree" and represents (5) agree and represents (4) two degrees, neutral (3), disagree (2), strongly disagree (1).

First: The Authenticity of the ChatGPT Technology Questionnaire and Its Role in Promoting Creativity in Education

Apparent Honesty

Where the questionnaire was designed in a way that ensures apparent honesty through clarification of the questionnaire instructions and the formulation of questionnaire questions in an easy manner and clear words that do not bear more than one meaning, and one phrase includes one idea, and the answer to the questionnaire phrases does not take a long time and great effort, and the sincerity of the questionnaire was verified by presenting it to a group of specialized arbitrators with experience in the field and their number (7) specialists from the faculty members in the faculties of education, In order to verify the clarity of the phrases and

the affiliation of each of them to the axis that followed and the extent to which the axes of the questionnaire cover the goal of it, the researcher has committed to making amendments and observations made by the arbitrators.

Sincerity of Internal Consistency

The sincerity of internal consistency means "the extent to which the scores of each of the phrases correlate with the total score of the questionnaire (Salah El-Din Mahmoud Allam, 1993, p. 215).

The researcher calculated the correlation coefficient between the degree of each statement and the total degree of the resolution, and the following tables (2) show the validity of the axes of the resolution.

Table 2: Correlation coefficients between the score of each statement and the total degree of the resolution

M	Correlation coefficient	M	Correlation coefficient	M	Correlation coefficient
1	0.805**	6	0.936**	11	0.795**
2	0.917**	7	0.833**	12	0.844**
3	0.879**	8	0.950**	13	0.869**
4	0.858**	9	0.928**	14	0.783**
5	0.869**	10	0.812**	15	0.812**

**Function at 0.01 level

It is clear from Table (2) that all correlation coefficients between each phrase with the total degree of the resolution are a function at the level of 0.01, which means that the resolution has a high degree of internal consistency, which means that the phrases share the measurement of ChatGPT technology and its role in promoting creativity in education.

Resolution Stability

The stability was calculated using the Alpha Cronbach method of resolution and Getman of half segmentation, and the following table shows the stability coefficients of the resolution.

Table 3: Showing the stability coefficients of the resolution

N	Questionnaire	Number of ferries	Alpha stability coefficient	Getman stability coefficient
1	ChatGPT technology and its role in promoting creativity in education	15	0.957	0.969

From the previous table, it is clear that the stability coefficients (0.957 – 0.969) are high for the resolution as a whole, which indicates confidence in the results of the questionnaire.

In light of the above various mechanisms for legalizing the research tool and reassuring its suitability for use, a codified picture of the questionnaire was finally reached, which was presented to the research sample.

Second: Procedures for Applying the Research Tool

After ensuring the sincerity and stability of the research tool, the researcher took several procedures so that he could apply the questionnaire, which were:
- Preparing the study tool in its final form after ensuring its truthfulness and stability.
- Identify the members of the study sample.
- Distributing the questionnaire to the target group, then collecting it.
- Conduct appropriate statistical analysis and come up with and comment on the results.
- Prepare appropriate recommendations and proposals in light of these results.

Third: Statistical Methods Used

The computer was used to enter the study data by the statistical program known as (SPSS-V.17) any (Statistical Package for Social Science), and in order to analyze the study data, a set of statistical methods were used that are consistent with the objectives of the study, and its methodology, namely:

1- Frequencies, and percentages for each of the questionnaire phrases, in order to identify the opinions (responses) of the study sample members towards the degree of approval of the ChatGPT technology and its role in promoting creativity in education, and to identify the various reasons that justify the respondents' answers and provide a more detailed description of these criteria.

2- **The relative** weight of the responses of the sample members to the questionnaire statements, which is given by the following equation:

$$\text{Relative weight} = \frac{5 \times \text{strongly agree repetition} + 4 \times \text{repeat ok} + 3 \times \text{neutral repetition} + 2 \times \text{repeat disagree} + 1 \times \text{iterations strongly disagree}}{\text{Total duplicates}}$$

3- Calculation (Ka2) to find out the statistical significance of the questionnaire statements for all members of the study sample, i.e., to verify the existence of significant differences in the responses of the study sample members on the degree of approval for each of the questionnaire statements, and the extent of the essence of these differences.

4- Correlation coefficients (Pearson's correlation coefficient) to verify the validity of internal consistency for the resolution.

5- Alpha Cronbach α coefficient to determine the degree of stability of the resolution.

Table 4: For the purposes of statistical analysis of the results,
the following criterion has been adopted

description	Range of averages	Relative weight
Strongly agree	From 4.2- 5	84 – 100%
agree	From 3.40- 4.19	68 – 83.8%
neutral	From 2.60- 3.39	52 -67.8%
Disagree	From 1.80- 2.59	36- 51.8%
Strongly disagree	From 1- 1.79	20- 35.8%

Fourth: The Results of the Study

The study aimed to study the identification of " ChatGPT technology and its role in promoting creativity in education". To achieve the objective of the study, a questionnaire was prepared and verified its truthfulness, and its stability coefficient, and after the data collection process, it was coded and entered into the computer and processed statistically using the statistical package program (SPSS) for the social sciences, and the following are the results of the study according to the sequence of his questions and hypotheses.

The results related to (the reality of the application of ChatGPT technology and its role in promoting creativity in education): Which relates to the following question:

"What is the reality of the application of ChatGPT **technology and its role in promoting creativity in education?"**

To answer the previous question, the arithmetic averages, standard deviations, and percentages of the phrases of the ChatGPT technology questionnaire and its role in enhancing creativity in education were extracted, and the study adopted the five-point Likert scale to estimate the degree of achievement of the reality of the application of ChatGPT technology and its role in promoting creativity in education, and the results table (5) shows as follows:

Table 5: Mean, relative weight, and the value of Ka2 and its level of significance for the reality statements of ChatGPT technology and its role in promoting creativity in education

N	Phrases		Strongly agree	Agree	Neutral	Reject	Strongly reject	Average	Relative Weight %	Standard deviation	Order	Ka2
1	ChatGPT technology contributes to creative interaction between teachers and students?	Duplicate	34	58	0	0	0	4.36	87.2	0.48	7	6.26*
		%	37	63	0	0	0					
2	Have you noticed an improvement in students' creative skills thanks to the use of ChatGPT technology?	Duplicate	35	55	2	0	0	4.35	87	0.52	11	46.71*
		%	38	59.8	2.2	0	0					
3	Using ChatGPT technology is an effective way to develop students' critical thinking?	Duplicate	36	54	2	0	0	4.36	87.2	0.53	8	45.47*
		%	39.1	58.7	2.2	0	0					

N	Phrases		Strongly agree	Agree	Neutral	Reject	Strongly reject	Average	Relative Weight %	Standard deviation	Order	Ka2
4	ChatGPT technology promotes creative design and innovation in the context of education?	Duplicate	37	53	2	0	0	4.38	87.6	0.53	4	44.37*
		%	40.2	57.6	2.2	0	0					
5	ChatGPT technology promotes creative design and innovation in the context of education?	Duplicate	39	51	2	0	0	4.40	88	0.53	1	42.54*
		%	42.4	55.4	2.2	0	0					
6	Using ChatGPT technology enhances collaboration and interaction among students?	Duplicate	37	52	2	1	0	4.35	87	0.58	12	85.30*
		%	40.2	56.5	2.2	1.1	0					
7	ChatGPT technology offers potential benefits for boosting creativity in education?	Duplicate	35	55	2	0	0	4.36	87.2	0.52	9	46.71*
		%	38	59.8	2.2	0	0					
8	Would you recommend using ChatGPT technology to foster creativity in the context of education?	Duplicate	35	54	3	0	0	4.36	87.2	0.54	10	43.32*
		%	38	58.7	3.3	0	0					
9	ChatGPT technology enhances social interaction and communication between students, teachers, and parents?	Duplicate	38	52	2	0	0	4.39	87.8	0.53	2	43.39*
		%	41.3	56.5	2.2	0	0					

N	Phrases		Strongly agree	Agree	Neutral	Reject	Strongly reject	Average	Relative Weight %	Standard deviation	Order	Ka2
10	ChatGPT technology provides a comprehensive and integrated learning experience that suits the needs of each individual student?	Duplicate	34	57	1	0	0	4.38	87.6	0.50	5	51.57*
		%	37	62	1.1	0	0					
11	you believe that ChatGPT technology improves students' literacy and critical thinking skills.	Duplicate	38	52	2	0	0	4.39	87.8	0.53	3	43.39*
		%	41.3	56.5	2.2	0	0					
12	ChatGPT technology develops skills to learn new languages and improve communication between different cultures?	Duplicate	36	52	4	0	0	4.33	86.6	0.56	13	38.95*
		%	39.1	56.5	4.3	0	0					
13	ChatGPT technology can be used as an interactive source of e-learning by interacting and adapting to educational content?	Duplicate	38	52	1	1	0	4.37	87.4	0.57	6	88.43*
		%	41.3	56.5	1.1	1.1	0					
14	ChatGPT technology is a powerful tool to help users solve problems and provide perfect solutions quickly and accurately.	Duplicate	32	59	1	0	0	4.32	86.4	0.49	14	54.93*
		%	34.8	64.1	1.1	0	0					

N	Phrases		Strongly agree	Agree	Neutral	Reject	Strongly reject	Average	Relative Weight %	Standard deviation	Order	Ka2
15	ChatGPT technology provides a more effective and easy way to talk across the board, along with providing resources to improve language performance in general.	Duplicate	33	56	2	1	0	4.31	86.2	0.57	15	91.91*
		%	35.9	60.9	2.2	1.1	0					

**Function at 0.01, *Function at 0.05

By extrapolating the results of the previous table, it was found that:

By reviewing the table (5) on "**The reality** of the application of ChatGPT technology and its role in promoting creativity in education", it is clear that:

* The average relative importance of the questionnaire phrases "the reality of ChatGPT technology and its role in promoting creativity in education" = 4.36 with a relative weight (87.2%), which represents a degree of strong approval, meaning that ChatGPT technology has a major role in promoting creativity in education.
* Approval rate for all questionnaire statements strongly agreed: It received strong approval and percentages ranging between (86.2-88 %), the highest of which was statement No. (5) "**I noticed an expansion in the limits of creativity in learning thanks to the use of ChatGPT technology**." by 88%.
* As for the relative importance of the **questionnaire** phrases "The reality of ChatGPT technology and its role in promoting creativity in education", which is reflected in the relative weight of each phrase, by reviewing the previous table No. (5) it is clear that:

Statement No. (5) "I noticed an expansion in the limits of creativity in learning thanks to the use of ChatGPT technology" came in the first place, followed by statement No. (9) **"ChatGPT technology enhances social interaction and communication between students, teachers and parents"** in second place, and statement No. (11) "You see that **ChatGPT** technology Improves students' reading, writing and critical thinking skills" in third place, and in the last place came statement No. (15) "ChatGPT technology provides a more effective and easy way to talk in all areas, in addition to providing resources to improve language performance in general", preceded by phrase number (14) which states "ChatGPT technology is a powerful tool to help users solve problems and provide ideal solutions quickly and accurately".

*** With regard to statistical significance, it is noted that:**

By reviewing Table No. (5) it is clear from the value of Ka2that all the statements of the questionnaire are statistically significant at the level of (**0.01) and in favor of approval,** that is, there are statistically significant differences between university professors in the United

Arab Emirates towards ChatGPT technology and its role in promoting creativity in education, which indicates its great role in promoting creativity in education , which is consistent with the theoretical framework of the study as well as the results of previous studies in emphasizing the importance of ChatGPT technology and its role in promoting creativity in education.

Discussion

By Discussing the findings, it becomes clear that:
- ChatGPT technology has a major role in promoting creativity in education.
- ChatGPT technology has expanded the development of creativity in education.
- ChatGPT technology enhances social interaction and communication between students, teachers, and parents.
- ChatGPT technology Improves students' reading, writing and critical thinking skills.
- ChatGPT technology promotes creative design and innovation in the context of education.
- ChatGPT technology provides a comprehensive and integrated learning experience that suits the needs of each individual student.
- ChatGPT technology can be used as an interactive source of e-learning by interacting and adapting to educational content.
- ChatGPT technology contributes to creative interaction between teachers and students**.**

These results are consistent with a study (off the school, 2023) on the importance of artificial intelligence in promoting creativity in education. Where the previous study confirmed that the technology has the potential to both limit and augment our creative capabilities. It is up to us, as teachers and educators, to guide the future of this relationship and ensure that it supports the continued growth and development of human creativity. By approaching AI as a tool to be used in the service of human creativity, rather than a threat to it, we can help to ensure a bright future for both the technology and the humans who use it.

Conclusion and Recommendations

From the results of the current research, it is necessary to develop ChatGPT so that it is able to provide unique educational experiences for each student based on their personal needs and interests, create new and innovative educational content, such as explanatory texts and questions to test concepts, and in order to support students in developing creative solutions to problems by providing suggestions and guidance, to encourage students to think critically and devise alternative and non-traditional solutions to educational challenges. , to help enhance interaction between students and increase their engagement by chatting with technology to ask questions and discuss, Provide support to students during distance learning and motivate them to explore topics autonomously, In creating interactive conversations, Create exciting dialogues and conversations with fictional or historical figures to enhance students' understanding of educational materials, Help teachers and students develop interesting and engaging educational stories and scenarios , Supporting classroom discussions by providing multiple perspectives and adding new ideas to stimulate thinking and discussion, creating innovative interactive experiences such as educational games and educational simulations that help stimulate thinking and learning to illustrate difficult concepts in a simple way, Providing customized support for students with special needs, helping them access educational content in ways that suit their needs, using it. To facilitate collaborative learning

and teamwork by fostering interaction and exchange of ideas among students, you must turn into AI mentors who guide students through their learning stages and provide them with personalized advice. Use them to develop innovative interactive lessons that allow students to interact with educational content and conduct effective experiences, so that they can provide practice and training in learning foreign languages through conversations and language exchanges with the model.

Appendix No. (1)

ChatGPT technology and its role in promoting creativity in education.

N	Phrase	Strongly agree. 5	Agree 4	Neutral 3	Reject 2	strongly reject. 1
1	ChatGPT technology contributes to creative interaction between teachers and students					
2	Have you noticed an improvement in students' creative skills thanks to the use of ChatGPT technology					
3	Using ChatGPT technology is an effective way to develop students' critical thinking					
4	ChatGPT technology promotes creative design and innovation in the context of education					
5	Have you noticed an expansion of creativity in learning thanks to the use of ChatGPT technology					
6	Using ChatGPT technology enhances collaboration and interaction among students					
7	ChatGPT technology offers potential benefits for boosting					

	creativity in education				
8	Would you recommend using ChatGPT technology to foster creativity in the context of education				
9	ChatGPT technology enhances social interaction and communication between students, teachers, and parents				
10	ChatGPT technology provides a comprehensive and integrated learning experience that suits the needs of each individual student				
11	She believes that ChatGPT technology improves students' literacy and critical thinking skills.				
12	ChatGPT technology develops skills to learn new languages and improve communication between different cultures				
13	ChatGPT technology can be used as an interactive source of e-learning by interacting and adapting to				

	educational content				
14	ChatGPT technology is a powerful tool to help users solve problems and provide perfect solutions quickly and accurately.				
15	ChatGPT technology provides a more effective and easy way to talk across the board, along with providing resources to improve language performance in general.				

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