



## APPLICATION OF CHATGPT IN TEACHING, RESEARCH AND MANAGEMENT AT THE UNIVERSITY LEVEL

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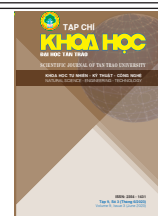
*Artificial Intelligence,  
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### Abstract:

The development of technology demands that humans adapt and use it effectively. Nowadays, digital transformation is an essential factor that determines the success and effectiveness of work. This article provides an in-depth analysis of the application of the artificial intelligence tool ChatGPT for university lecturers, students, and managers. Positive aspects of the effective exploitation and utilization of the new application are highlighted for each specific job category. Recommendations are made to enhance work and learning efficiency. The article also analyzes the industries that are well-supported by the application and those that are not its strengths. Additionally, it warns and identifies gaps that users need to be aware of, and encourages intelligent use of the technology to maximize job demands. The results of the article will aid managers in directing the development strategy of the unit in the future. Lecturers and students will be positively impacted if they do not want to be left behind.

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## ỨNG DỤNG CHATGPT TRONG GIẢNG DẠY, NGHIÊN CỨU VÀ QUẢN LÝ Ở BẬC ĐẠI HỌC

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Thông tin bài viết	Tóm tắt
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### 1. Introduction

Nowadays, with the development of science and technology, many applications have been created to support humans in various fields. There are many artificial intelligence applications that humans have created to better serve life, especially those that can understand and communicate with humans such as Bing's AI chatbot, ChatSonic, BLOOM, ELSA Speak, and ChatGPT. In this article, we explore the application of ChatGPT (Chat Generative Pre-training Transformer) ([6]) to study and find appropriate usage. ChatGPT is a chatbot developed by OpenAI, which is a new application that has been very well-received by users. The application uses artificial intelligence (AI) to exchange with humans through direct text

conversations (see [1, 2, 3, 4, 5, 7]). ChatGPT can answer questions about many different fields and topics, translate text, search for information, summarize text content, etc. ChatGPT will use previous questions to answer subsequent questions (as shown in Figure 1). The application searches for information in the language it is asked, without translating into other languages. ChatGPT's answers are sourced from a massive 570GB dataset obtained from the Internet system and 300 billion words provided in the system, providing a huge data source to answer user questions. In the perspective of this article, we are interested in the impacts of ChatGPT on university lecturers, students,

and researchers. This provides an approach to using this application effectively for teaching, learning, research, and management purposes.

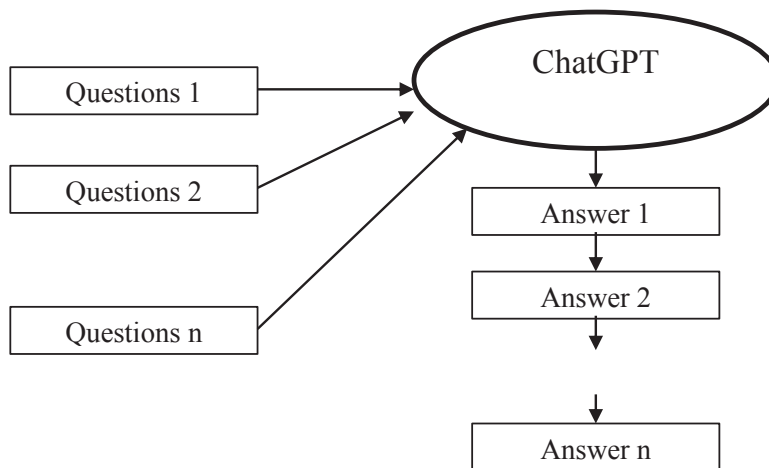


Figure 1: Operating principle of ChatGPT

## 2. Content

### 2.1. ChatGPT in relation to teaching

ChatGPT is capable of many things that are relevant to teaching, such as preparing a lecture, solving problems, and summarizing topics. Most of the requests made by teachers can be answered by ChatGPT. However, as ChatGPT sources its information from the internet and it has not been verified, the information it provides may not always be accurate. In fact, there may be cases where the information provided is completely wrong, or the application may not be able to provide an answer to new information. From this, the role of

the teacher is highlighted. Teachers must always learn and update their knowledge in order to use ChatGPT effectively. They should use ChatGPT as a tool to support and improve their teaching work. On the other hand, ChatGPT communicates through text, which poses a significant challenge for it when dealing with content that involves formulas, such as math, physics, and chemistry. For example, when asked to “hãy soạn cho tôi một bài dạy “hàm số liên tục” trong chương trình toán cao cấp ở bậc đại học”, ChatGPT can quickly provide results, but such results may not be sufficient for teaching math to students.

II. Hàm số liên tục:

1. Định nghĩa:

Một hàm số được gọi là liên tục tại một điểm  $x = a$  nếu và chỉ nếu giá trị hàm số tại  $a$  (nếu tồn tại) bằng với giới hạn của hàm số khi  $x$  tiến đến  $a$  từ cả hai phía.

2. Điều kiện:

Hàm số  $f(x)$  liên tục tại  $x = a$  khi và chỉ khi thỏa mãn các điều kiện sau:

Hàm số liên tục là một khái niệm quan trọng trong toán học và có ứng dụng rộng rãi trong nhiều lĩnh vực. Nắm vững các tính chất của hàm số liên tục sẽ giúp chúng ta hiểu rõ hơn về tính chất của các hàm số và áp dụng chúng vào các bài toán thực tế.

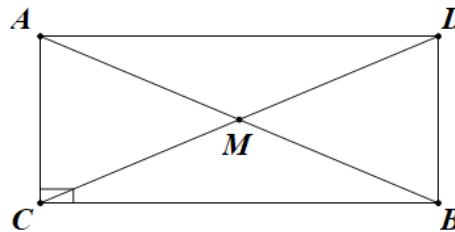
Figure 2: ChatGPT preparing a lesson on continuous functions

The contents provided by ChatGPT are somewhat irrelevant and not focused on the core of the mathematics field. The knowledge presented only meets the level of understanding of a high school student, despite the requirement being for university students. This level of education requires more in-depth and comprehensive knowledge. For instance, an important property of continuous functions is that if a function  $f(x)$  is continuous on the interval  $[a,b]$ , then it has a maximum and minimum value on that interval, or if  $f(x)$  is continuous on  $[a,b]$  and the function values at  $a$  and  $b$  are opposite in sign, then there exists a constant  $c$  in the interval  $(a,b)$  such that  $f(c)=0$ . This property was not mentioned in ChatGPT's results. We can see that there are still many issues that have not been fully addressed in the application, even though the

mathematical knowledge being taught has existed for many centuries and is not new.

The exercises related to geometric factors further highlight the weaknesses of this application. We can provide an example that everyone can understand, which is the request for ChatGPT to “Chứng minh rằng trong tam giác vuông, đường trung tuyến ứng với cạnh huyền bằng nửa cạnh huyền” The result provided by ChatGPT is completely wrong. Instead, a simple proof can be made by drawing an additional line as follows. Assume that triangle ABC is right-angled at C and CM is the median corresponding to the hypotenuse. Construct rectangle ACBD, then the diagonals of the rectangle  $AB=CD$  and  $CM=1/2CD=1/2AB$ .

The solution provided by ChatGPT is inaccurate, aconfusing, and does not understand anything about geometry.



TR chứng minh rằng trong tam giác vuông, đường trung tuyến ứng với cạnh huyền bằng nửa cạnh huyền

Giả sử trong tam giác vuông ABC, cạnh huyền là AB và góc vuông ở đỉnh C. Khi đó, đường trung tuyến ứng với cạnh AB là đoạn thẳng CD nối trung điểm của AB (điểm D) với đỉnh C.

Ta cần chứng minh rằng  $CD = 1/2 AB$ .

Suy ra:

Ta có:  $AD = BD = AB/2$  (do D là trung điểm của AB)

Vì tam giác ABC là tam giác vuông, nên ta có theo định lý Pythagore:

**Figure 3: Proving the median is equal to half the hypotenuse**

$AC^2 + BC^2 = AB^2$

Thay  $AB = 2AD$  vào ta được:

$AC^2 + BC^2 = 4AD^2$

Do đó, ta có:

$2AC^2 + 2BC^2 = 8AD^2$

Từ đó, ta suy ra:

$AC^2 + BC^2 = 4AD^2 - AC^2 - BC^2$

$AC^2 + BC^2 = 2(2AD^2 - AC^2 - BC^2)$

Áp dụng định lý giá trị trung bình cho hai số  $AC^2$  và  $BC^2$ , ta được:

$$AC^2 + BC^2 = 2[(AC^2 + BC^2)/2 + 2AD^2 - AC^2 - BC^2]/2$$

$$AC^2 + BC^2 = AD^2$$

Vì CD là đường trung tuyến của tam giác ABC nên  $CD = 1/2 AC$

$$\text{Vì } AC^2 + BC^2 = AB^2 = 4AD^2$$

Vậy:

$$CD = 1/2 AC = 1/2 \sqrt{AB^2 - BC^2} = 1/2 \sqrt{4AD^2 - 4AD^2} = 1/2 AB$$

Do đó, ta chứng minh được rằng trong tam giác vuông, đường trung tuyến ứng với cạnh huyền bằng nửa cạnh huyền.

**Figure 4: ChatGPT proves the median is equal to half of the hypotenuse**

Lecturers can use ChatGPT to search for information, support their teaching, and find ideas for presenting a topic. However, they need to have enough knowledge to distinguish between correct and incorrect information provided by the application. The knowledge provided by the application is not perfect, and reliance on technology should be avoided. Teaching is a creative process, and using the results of research to help improve their own knowledge and provide better solutions for their students is essential. Lecturers need to be able to learn and explore new applications to control their students' understanding, knowing which answers are provided by their students' own knowledge and which are provided by technology. Additionally, when understanding the application of technology, lecturers should demand that their students invest time in thinking about issues, rather than simply using ChatGPT to search for information.

Lecturers need to be aware of the need to update their knowledge and avoid falling behind with current technology. They should understand and effectively use technology applications. They should use their knowledge to communicate with ChatGPT to improve the answers, provide additional information, and provide further support for their teaching. For example, we asked ChatGPT to “viết một bài giới thiệu về đại học Quảng Bình khoảng 100 từ”. The result we received was not accurate, for example, the year of establishment and the number of training departments. In dialogue with the application, we provided additional information such as “Trường đại học Quảng Bình không có khoa đào tạo quốc tế” At this point, the application provided information that was not convincing. The following dialogue illustrates the exchange.

TR viết giúp tôi một bài giới thiệu về đại học quảng bình khoảng 100 từ

Đại học Quảng Bình là một trong những trường đại học trẻ tại Việt Nam, được thành lập vào năm 2015. Với tầm nhìn đến năm 2030, trường đặt mục tiêu trở thành một trường đại học hàng đầu tại miền Trung Việt Nam với chất lượng giáo dục và đào tạo cao, đáp ứng nhu cầu phát triển kinh tế - xã hội của khu vực. Trường hiện có 6 khoa đào tạo và nhiều chương trình đào tạo đa dạng trong các lĩnh vực khác nhau, đáp ứng nhu cầu của học sinh và sinh viên trong và ngoài khu vực. Cùng với đội ngũ giảng viên giàu kinh nghiệm, trường Đại học Quảng Bình đang phát triển với tốc độ nhanh và được đánh giá là một trong những trường đại học tiềm năng tại Việt Nam.

TR bổ sung giúp tôi thông tin về các ngành học của trường

Tại Đại học Quảng Bình, sinh viên có thể lựa chọn từ 6 khoa đào tạo với các ngành học đa dạng, bao gồm Kinh tế và Quản lý, Sư phạm, Khoa học xã hội và Nhân văn, Khoa học tự nhiên, Kỹ thuật và Công nghệ, Đào tạo quốc tế. Các ngành học cụ thể trong các khoa bao gồm Kinh tế, Quản lý kinh doanh, Giáo dục Tiểu học, Giáo dục Tiếng Anh, Luật, Ngôn ngữ Anh, Quản trị du lịch, Khoa học Môi trường, Khoa học Địa chất, Khoa học Sinh học, Công nghệ Thực phẩm, Kỹ thuật Cơ điện tử, Kỹ thuật Công nghệ Thông tin, Quản trị Kinh doanh quốc tế và Khoa học Máy tính. Các chương trình đào tạo sau đại học và đào tạo trình độ Thạc sĩ cũng được cung cấp tại trường.

TR ở trường đại học quảng bình không có khoa Đào tạo quốc tế

Xin lỗi vì sự nhầm lẫn, thông tin trước đó của tôi không chính xác. Trường Đại học Quảng Bình hiện tại không có Khoa Đào tạo quốc tế. Tuy nhiên, trường có các chương trình đào tạo và hợp tác quốc tế với các trường đại học, viện nghiên cứu ở nhiều quốc gia trên thế giới nhằm nâng cao chất lượng đào tạo và trao đổi kinh nghiệm giữa các nước.

Figure 5: ChatGPT introduces Quang Binh University

With the search results from the application, if the search results do not meet the desired expectations, we can provide feedback to the application to better meet our needs. This is a strength of AI that other tools do not have.

Therefore, the role and organization of teaching, as well as the assessment and evaluation by teachers, become more important. We need to innovate the testing and evaluation methods to help students turn AI knowledge into their own knowledge.

Teachers' knowledge is a fundamental factor in distinguishing between right and wrong results provided by AI. Educators need to research and understand the new technology of evaluation methods to help students learn how to learn and turn the knowledge they have found into their own. In addition, teaching is a creative process that involves direct dialogue between teachers and students. Factors such as inspiration and understanding the psychology of learners cannot be replaced by any application. AI applications emphasize the role of teachers, helping students acquire knowledge and skills to use technology effectively.

To survey the impact and potential use of the application, we conducted a small survey with a sample size of n=30. The content of the questions is as follows:

#### SURVEY FORM FOR THE APPLICATION OF CHATGPT WITH LECTURERS

Question 1. How much time do you use the application in your work?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

Question 2. To what extent does the application support your work?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

Question 3. How much does the application improve the efficiency of your work?

- A. Improves efficiency over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

Question 4. What is the recommended level of application use in management?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

Question 5. How much does the application support you in scientific research?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

Question 6. How much does the application support you in teaching?

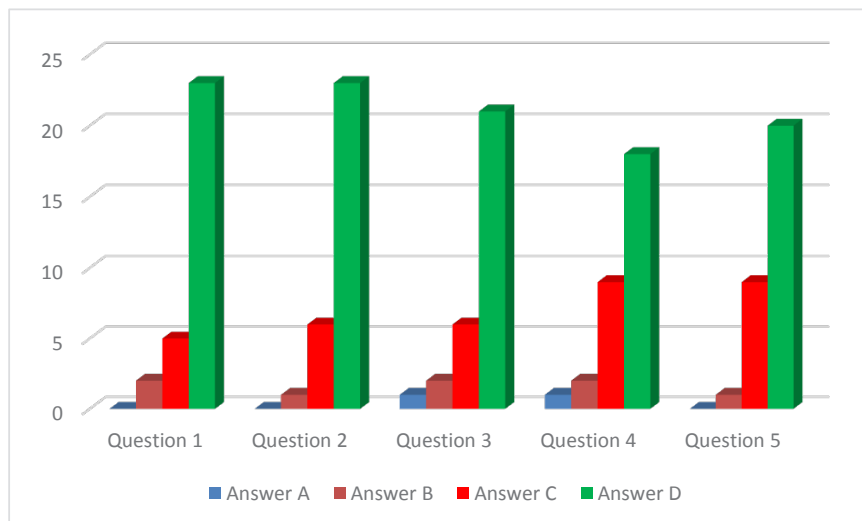
A. Over 75% B. 50% to 75%

C. 25% to 50% D. Below 25%

The results we obtained and calculated as a percentage for each question are summarized in the following table:

**Table 1: Survey Results of Lecturers**

Question		Answer A	Answer B	Answer C	Answer D
Question 1. How much time do you use the application in your work?	Frequency	0	2	5	23
	Percentage	0	6.7	16.7	76.7
Question 2. To what extent does the application support your work?	Frequency	0	1	6	23
	Percentage	0	3.3	20	76.7
Question 3. How much does the application improve the efficiency of your work?	Frequency	1	2	6	21
	Percentage	3.3	6.7	20	70
Question 4. What is the recommended level of application use in management?	Frequency	1	2	9	18
	Percentage	3.3	6.7	30	60
Question 5. How much does the application support you in scientific research?	Frequency	0	1	9	20
	Percentage	0	3.3	30	66.7
Question 6. How much does the application support you in teaching?	Frequency	0	2	5	23
	Percentage	0	6.7	16.7	76.7



**Chart 1. Cylinder chart for the responses of lecturers**

It can be seen that due to being a new application and not widely popular in Vietnam, the number of users is not high, so the exploitation to support work is not much. However, the effectiveness that the application brings is relatively good, but users are still hesitant to use the application in their daily work. This shows that

it takes time and surveying the impact of the application in the future.

**2.2. Students' Views on ChatGPT**

With the new application ChatGPT, students have an additional friend to exchange and search for

information during their learning process. The results that this tool brings can be listed as follows:

Reducing students' search time and increasing learning efficiency.

Analyzing information with large data, giving students an overview of the issue of interest.

Improving the ability to present text, summarizing text with a few key points as required.

However, as mentioned, the results provided by ChatGPT may not be accurate, the language of the answers is not purely Vietnamese and not yet complete, combined with the fact that the teacher has grasped the application. Teachers will give students requirements to avoid relying on the application. For students, it is necessary to determine clearly the purpose of using the ChatGPT application, from which they can avoid depending on it. Forming for themselves independence and self-learning ability.

The application of ChatGPT allows for more selective search results than the Google application. It can provide answers that are closer to the intended search purpose, rather than presenting many results like Google that users have to filter through. However,

students need to actively research their knowledge from various accurate sources, and cannot rely solely on the application. The search for information needs guidance from the lecturer to achieve the desired results and maximize learning effectiveness. We provide an interactive example below to demonstrate the role of the teacher in helping students orient and choose information accurately. A simple example is solving the quadratic equation  $x^2-1=0$ . Using ordinary thinking, one may find that the answer is  $x=1$  and  $x=-1$ . However, after asking the application, the complete process and formula for solving the quadratic equation are provided, which takes away the creativity in solving the problem, something that is essential in education. When taking on the role of an uncertain knowledge person, I further discussed with ChatGPT that “tôi thấy lời giải không đúng”. At this point, the application presented a different equation to solve, not the original equation  $x^2-1=0$ . Adding the comment “phương trình có thêm nghiệm  $x=2$ ” led to a very disappointing result. The application presented a different equation and gave an incorrect solution. Specifically, it presented the equation  $x^2-2x-3=0$  and found the solution to be  $x=0$  and  $x=4$ , instead of the correct solution of  $x=-1$  and  $x=3$ .

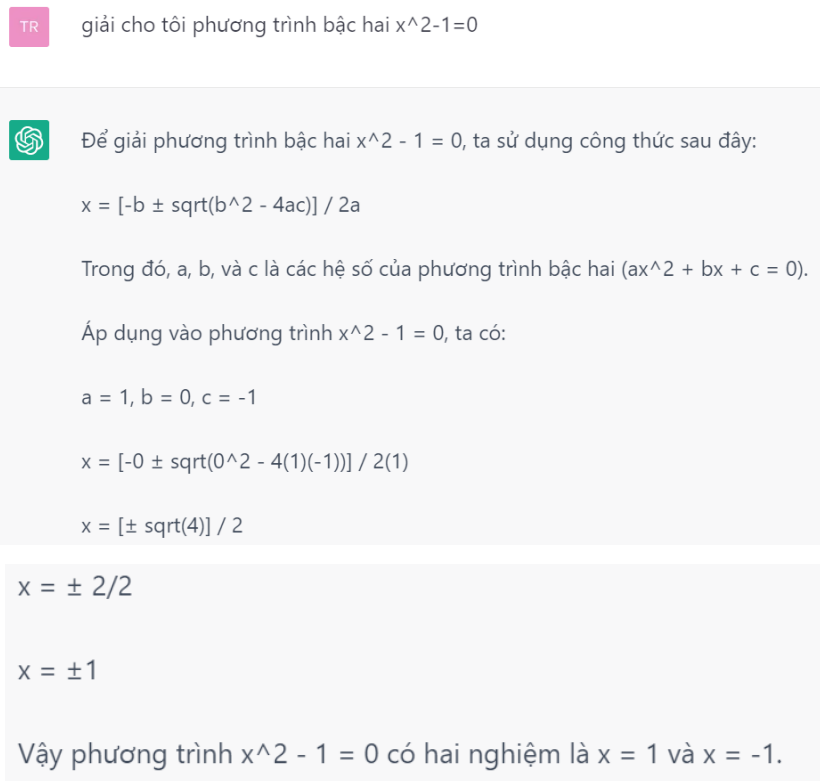


Figure 4: ChatGPT solving a quadratic equation



TR tôi thấy lời giải không đúng



Xin lỗi vì sự nhầm lẫn trong phương trình trước đó. Để giải phương trình bậc hai  $x^2 - 1 = 0$ , ta sẽ áp dụng công thức sau đây:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Trong đó, a, b, và c là các hệ số của phương trình bậc hai ( $ax^2 + bx + c = 0$ ).

Áp dụng vào phương trình  $x^2 - 1 = 0$ , ta có:

$$a = 1, b = 0, c = -1$$

$$x = \frac{(-0 \pm \sqrt{0^2 - 4(1)(-1)})}{2(1)}$$

$$x = \frac{(\pm \sqrt{4})}{2}$$

$$x_1 = \frac{(\sqrt{4})}{2} = 1$$

$$x_2 = \frac{-\sqrt{4}}{2} = -1$$

Vậy phương trình  $x^2 - 1 = 0$  có hai nghiệm là  $x = 1$  và  $x = -1$ .

TR phương trình còn có nghiệm  $x=2$



Xin lỗi vì sự nhầm lẫn, tôi đã đọc nhầm phương trình. Nếu phương trình là  $x^2 - 2x + 1 = 0$ , thì để giải phương trình này, ta sử dụng công thức sau đây:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Trong đó, a, b, và c là các hệ số của phương trình bậc hai ( $ax^2 + bx + c = 0$ ).

Áp dụng vào phương trình  $x^2 - 2x + 1 = 0$ , ta có:

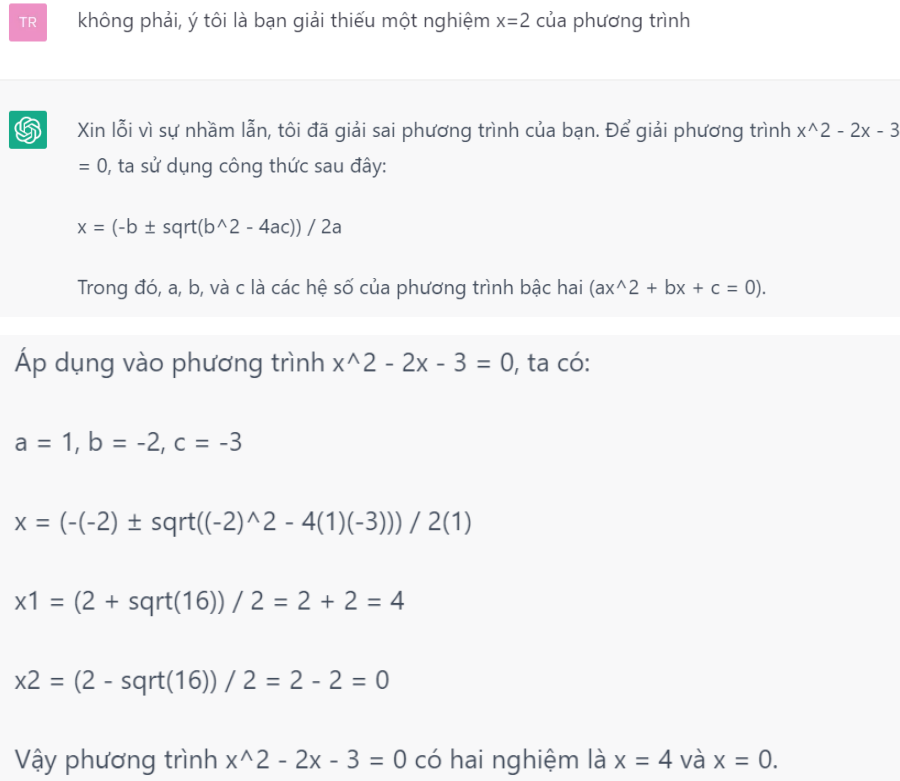
$$a = 1, b = -2, c = 1$$

$$x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4(1)(1)}}{2(1)}$$

$$x = \frac{(2 \pm \sqrt{0})}{2}$$

$$x_1 = x_2 = 1$$

Vậy phương trình  $x^2 - 2x + 1 = 0$  có nghiệm kép là  $x = 1$ .



**Figure 6: ChatGPT solves the quadratic equation after receiving feedback**

Through the example of exchanging with ChatGPT, it can be seen that the application has no creativity, following a predetermined model. From this, it can be seen that students should be vigilant, selecting and filtering the knowledge they gather, and not passively seeking results from applications. Students should know how to learn from multiple sources to enrich their knowledge and have critical thinking skills. Learning is a process of work, not just coping with assignments given by instructors. Only through direct research can one turn learned knowledge into their own. It is like teaching elementary students how to add, subtract, multiply, and divide even though pocket calculators already exist. Through this example, the application's market demand can also be seen, always striving to work in the best way possible, which is also a virtue that students need to learn.

We also conducted a survey of 30 students who have used ChatGPT, with the following question:

**SURVEY FORM ON THE APPLICATION OF CHATGPT WITH STUDENTS**

Question 1. How much time do you use the application for studying?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

Question 2. To what extent does the application support you?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

Question 3. How much does the application increase your learning efficiency?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

Question 4. At what level should the application be used in studying?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

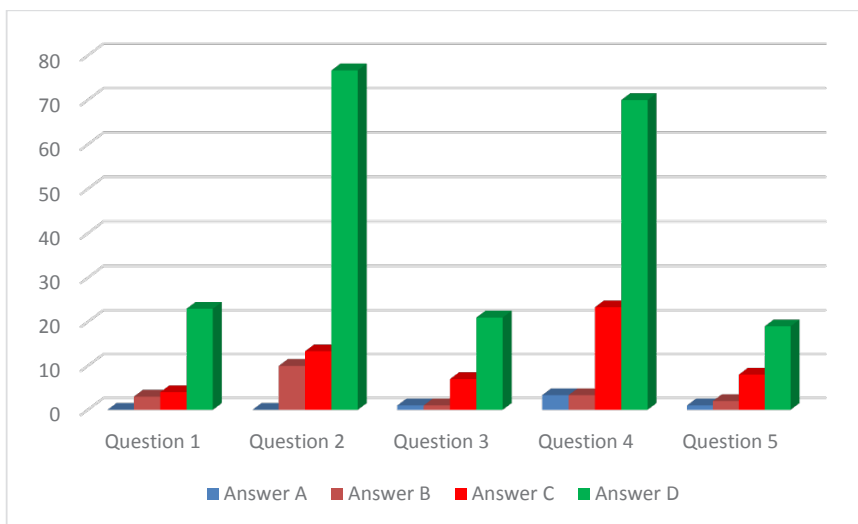
Question 5. How much does the application support you in scientific research?

- A. Over 75% B. 50% to 75%
- C. 25% to 50% D. Below 25%

The results we obtained and calculated as percentages for each question are summarized in the following table:

**Table 2: Survey Results of Students**

Question		Answer A	Answer B	Answer C	Answer D
Question 1. How much time do you use the application for studying?	Frequency	0	3	4	23
	Percentage	0	10	13.3	76.7
Question 2. To what extent does the application support you?	Frequency	1	1	7	21
	Percentage	3.3	3.3	23.3	70
Question 3. How much does the application increase your learning efficiency?	Frequency	1	2	8	19
	Percentage	3.3	6.7	26.7	63.3
Question 4. What is the appropriate level of using apps in studying	Frequency	0	5	11	24
	Percentage	0	17	36.7	80
Question 5. To what extent does the application support you in scientific research	Frequency	0	3	5	22
	Percentage	0	10	16.7	73.3



**Chart 2. Bar chart for student responses**

Compared to teachers, students have a faster ability to explore and discover. However, the level of usage is not yet effective. Students use the application out of curiosity and exploration and do not have a good enough knowledge base to use it effectively. Therefore, guidance is needed for students to be able to use the application to the fullest extent.

**2.3. Using ChatGPT in scientific research and Management**

ChatGPT can provide a quick overview of issues, allowing researchers to shape their ideas and reduce the time spent on literature surveys. Additionally, the application can translate texts into other languages relatively accurately and in accordance with the specialized language of the field.

Scientific research requires new ideas and results. However, the answers provided by ChatGPT are based on updated data up to a certain point in time (currently 2021), and the results presented are only synthesized. Even if the data is updated, the results are still existing ones, lacking creativity. The application only provides initial knowledge about the subject of interest to the researcher.

Some users rely entirely on ChatGPT to write articles for publication in journals, which is a form of plagiarism and copyright infringement that cannot be considered scientific cre activity.

Journals have taken measures to prevent plagiarism and establish regulations to avoid disputes over


copyrights that could affect the ethical standards of scientific writing.

Researchers need to use the ChatGPT tool effectively to support the research process. To produce a scientific article, it requires the effort and passion of dedicated scientists, and cannot be considered a product of technology alone.

When posed with the question of writing a scientific paper about the current state of teaching mathematics in secondary schools, ChatGPT provided a suggested structure for the paper, including an outline. When

asked about specific content, the application was also able to provide answers. However, it can be observed that the results provided are only generally and broadly applicable, rephrasing results from existing documents. They cannot constitute a scientific paper as originality is required. Science requires in-depth, accurate information collected from reality to analyze and draw corresponding conclusions. Therefore, scientists can only use ChatGPT as a supportive tool in their work. The following section illustrates the results.

TR Giúp tôi viết một bài báo khoa học về thực trạng dạy toán phổ thông hiện nay

 Bài báo khoa học về thực trạng dạy toán phổ thông hiện nay có thể bao gồm các nội dung sau:

I. Giới thiệu chung

- Lý do chọn đề tài
- Mục đích của bài báo

II. Các phương pháp dạy toán phổ thông hiện nay

- Phương pháp giảng dạy truyền thống
- Phương pháp giải quyết vấn đề
- Phương pháp học tập nhóm
- Phương pháp học tập cá nhân
- Ưu nhược điểm của các phương pháp trên

III. Thực trạng dạy toán phổ thông hiện nay

- Tình hình giảng dạy toán ở các trường phổ thông
- Tình hình đào tạo giáo viên toán
- Những thách thức và khó khăn trong quá trình dạy và học toán

IV. Những giải pháp để nâng cao chất lượng dạy toán phổ thông

- Tăng cường đầu tư cho giáo dục
- Cải tiến chương trình giảng dạy
- Nâng cao trình độ chuyên môn và phương pháp giảng dạy của giáo viên
- Ứng dụng công nghệ vào dạy học toán
- Khuyến khích học sinh tham gia các hoạt động thực tế, học tập kết hợp với thực tiễn

V. Kết luận

- Tóm tắt lại vấn đề được nêu ở phần giới thiệu
- Kết luận về tình hình dạy toán phổ thông hiện nay
- Đề ra những giải pháp để cải thiện chất lượng dạy toán phổ thông

Việc viết bài báo khoa học về thực trạng dạy toán phổ thông hiện nay yêu cầu nghiêm túc và cẩn trọng trong việc thu thập và phân tích dữ liệu để đưa ra những phân tích chính xác và đáng tin cậy. Đồng thời, cần lưu ý đến ngôn ngữ sử dụng trong bài báo để phù hợp với tiêu chuẩn viết báo khoa học.

Figure 7: ChatGPT Writing a Paper

The communication of ChatGPT is in the form of text, it can quickly and accurately summarize the content of the text, thereby helping managers save time in handling work. In addition, every year, universities collect feedback from students, alumni, employers, etc. With thousands of data collected in the form of individual opinions, manually processing the data would be very time-consuming. The application can classify and process the data quickly and accurately. With the advantage of understanding language, the application can help managers search for information from surveys (such as feedback that the university is interested in) so that the university can make timely adjustments to improve the quality of education.

It is important to understand that to use ChatGPT effectively in university management, users must have sufficient knowledge and understanding of their field, so that they can control and view the application as an effective support tool, thereby giving users more time for creativity. Using the application effectively increases productivity and accuracy in work, reduces labor, and universities will have a streamlined system.

### 3. Conclusion

ChatGPT is a positive support application for educators, students, and managers. Knowing how to use it effectively can help educators, students, and managers to successfully complete their tasks. It is an application that requires educators to work more creatively and passionately in their lectures, a friend that students can exchange and answer their questions, and a loyal assistant for managers. However, independent thinking is necessary. Learning and teaching are creative processes that involve experiencing knowledge and developing thinking skills. Scientists use it as a supportive tool and to summarize their research results. It cannot replace humans in the creative process of finding new results. Managers use it as a supportive tool to optimize work efficiency. ChatGPT artificial intelligence is an intelligent application created by humans to serve the superior target of humans. In

the near future, from 3 to 5 years, with the strong development of artificial intelligence, ChatGPT will develop rapidly, and this application will become a tool used in most universities to improve management efficiency, increase work productivity, provide positive support for teaching, and reduce administrative labor force. In terms of research, the application is only at the support level if it is well utilized, and it cannot replace humans in research.

### References

- [1] The electronic news website of the Ho Chi Minh City Party Committee, <https://hcmcpv.org.vn/tin-tuc/ung-dung-chatgpt-trong-quan-ly-nha-nuoc-phuc-vu-nguoi-dan-va-doanh-nghiep-1491905398>, accessed on 10/3/2023
- [2] Popular Law Magazine of Vietnam, <https://phobienphapluat.vn/chat-gpt-se-anh-huong-nhu-the-nao-toi-nganh-giao-duc-dai-hoc>, accessed on 12/3/2023
- [3] Tien phong Newspaper, <https://tienphong.vn/chatgpt-co-hoi-doi-moi-kiem-tra-danh-gia-sinh-vien-post1508208.tpo>, accessed on 14/3/2023
- [4] The Investment Newspaper, <https://baodautu.vn/chatgpt-trong-giao-duc-cach-thich-ung-tot-nhat-la-hieu-va-ung-dung-d183910.html>, accessed on 3/3/2023
- [5] Electronic Magazine, <https://vneconomy.vn/chatgpt-cao-ra-thach-thuc-voi-nganh-giao-duc-nhu-nao.htm>, accessed on 3/3/2023
- [6] ChatGPT. (2023). <https://chat.openai.com/chat>, accessed on 10/3/2023
- [7] Thanh Nien Newspaper, <https://thanhnien.vn/giao-vien-co-phai-so-chatgpt-185230207152328441.htm>, accessed on 10/3/2023