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EXPLORING TEACHERS' ATTITUDES TOWARDS USING CHATGPT

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Abstract

ChatGPT has the potential to revolutionize education. By allowing machine learning and natural language processing (NLP) algorithms to interact with students in real-time, ChatGPT can provide students with personalized and interactive learning experiences tailored specifically to their individual needs. This study uses the Technology Acceptance Model to explore faculty members' attitudes toward using ChatGPT. Semi-structured interviews with 20 faculty members of a private university in Pakistan were conducted. The interview responses indicate that university faculty are generally cautious in using ChatGPT. The faculty members had a negative perception and attitude toward using ChatGPT. Potential risks such as cheating and plagiarism were cited as major concerns, while benefits such as ease in lesson planning and assessment were also noted. The results of this study suggest that university faculty need more information and education about ChatGPT to make informed decisions about its use. Additionally, future research should focus on student perceptions and quantitative methods to gain further insight into how university faculty use ChatGPT for teaching and learning purposes.

Keywords: ChatGPT, TAM, Educational Technology, Artificial Intelligence

Introduction

ChatGPT, a ground-breaking chatbot, was recently launched and is already making waves (Sundar, 2023). It soared in popularity, with over a million users within days of its release (Shankland, 2023). This AI-driven bot operates using Artificial Intelligence to communicate naturally with the user. It was trained on extensive data, which allows it to converse just like a human would, giving the impression that you are talking to a real person rather than a machine (Cousins, 2023).

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ChatGPT is an open-source natural language processing model developed by OpenAI (Vallance, 2022). It is designed to generate realistic, human-like conversations in response to user input. ChatGPT utilizes a transformer network based on GPT-3, the largest unsupervised language model ever created, and combines it with sophisticated dialogue management techniques. This allows it to generate more natural and sophisticated conversations than traditional rule-based or keyword-matching chatbots. ChatGPT can also maintain context across multiple messages and remember facts from previous conversations, making it suitable for various applications such as customer service bots, virtual assistants, and more (Hughes, 2022).

The launch of ChatGPT was a huge success, and it quickly gained popularity, with over a million users within days (Cousins, 2023). The AI-driven bot has amazed many with its ability to communicate naturally and generate sophisticated conversations in response to user input. Most people have been impressed by its conversational skills and entertaining replies, although there is also some concern about potential privacy implications. ChatGPT has achieved an incredible milestone in becoming the fastest-growing consumer application ever, with an estimated 100 million monthly active users within two months of its launch (Ruby, 2023).

Teachers and educational institutes are concerned about the potential risk that ChatGPT poses to students, particularly in terms of cheating (Willems, 2023). While the AI-driven chatbot can generate sophisticated conversations in response to user input, it can also complete various tasks, such as writing essays or completing tests. There is a potential for students to use the chatbot to copy answers or receive help with completing assignments, which could potentially lead to cheating. There is also a concern that using ChatGPT could negatively impact students' learning experiences (Zhai, 2022). The AI-driven bot can generate conversational responses in response to user input but cannot teach students how to think or develop their ideas. It is feared that students may become too reliant on the chatbot and start relying on it for problem-solving instead of developing their ideas, which could result in a steep decline in the quality of learning outcomes.

In light of this, teachers and educational institutes have begun taking steps to protect students from the potential risks posed by ChatGPT (Roose, 2023). Some institutes have already implemented measures such as restricting access to chatbots or introducing more stringent rules for assignments and tests. This prevents cheating and ensures students engage in learning activities that promote critical thinking and creativity.

Despite the potential risks ChatGPT poses, there are also many potential benefits for education. The AI-driven bot can enhance the learning process and provide students an interesting and engaging way to learn. For example, ChatGPT could be used to create interactive tutorials that respond to student questions in real-time or offer conversational coaching to help guide students through complex concepts. Additionally, the chatbot could be used to provide personalized educational content or offer automated feedback on assignments and tests. Overall, ChatGPT has the potential to revolutionize education and provide an innovative way for teachers to engage with their students.

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Volume 3, Issue 4, Page 97-111, December 31, 2022

Rationale of the Study

ChatGPT has the potential to revolutionize education, and it seems inevitable that students and teachers will use it for educational purposes (Siemens, 2023). Therefore, it is important to understand university teachers' attitudes toward this innovative technology to determine if its potential benefits outweigh any associated risks. This research seeks to explore the level of acceptance of university teachers towards ChatGPT and its implications for teaching and learning in higher education. By understanding university teachers' perceptions, it will be possible to strategize ways to mitigate any potential risks the technology poses while taking advantage of its potential benefits. Additionally, this research can provide educators with a better understanding of using this technology to enhance their teaching and learning practices.

This paper explores the level of acceptance of university teachers towards ChatGPT. This new and innovative technology can be useful in universities and classrooms because it allows students to interact with digital materials naturally and acquire skills in the real environment. However, there are also potential risks of encouraging the use of ChatGPT among students as it may hinder their learning process. Therefore, this study aims to explore the attitudes of teachers towards ChatGPT.

Objectives of the study

In this paper, we will investigate the acceptance level of faculty members towards ChatGPT. The chatbot can benefit students, allowing them to interact with digital content naturally and acquire abilities in real-world settings. However, there are potential risks that come with using ChatGPT among university students, such as obstructing the learning process. Therefore, we aim to evaluate the perceptions of higher education teachers about this AI-driven technology. This research seeks to explore the level of acceptance of university teachers towards ChatGPT in order to determine whether it is a beneficial tool for use in university classrooms or if its potential risks outweigh its potential benefits.

The primary objective of this research is to assess university teachers' perceptions and attitudes toward using ChatGPT in teaching and learning. Specifically, this research aims to:

- Identify the potential benefits and risks of using ChatGPT in higher education settings.
- Explore university teachers' attitudes towards the use of ChatGPT.
- Assess the level of acceptance of university teachers towards ChatGPT and its implications for teaching and learning in higher education.
- Explore possible strategies to mitigate any potential risks ChatGPT poses while taking advantage of its potential benefits.

Significance of the Study

This research is significant for several reasons. Firstly, understanding the level of acceptance and attitude of university teachers towards ChatGPT can provide important insights into the potential risks and benefits associated with using this technology in educational settings. Secondly, it will help inform decisions about how best to use ChatGPT in higher education settings to ensure its potential benefits are realized while minimizing any associated risks. Finally, this research can offer valuable insight into teachers' attitudes toward technology in general and how they perceive it as a tool for teaching and learning. This is particularly important given the increasing prevalence of AI-driven technologies in educational settings.

Literature Review

The Technology Acceptance Model (TAM) is an influential framework that can be applied to predict when and how people will use a new technology (Davis, 1989). According to the model, two major factors influencing individuals' attitudes toward using information technology are Perceived Usefulness (PU) and Perceived Ease of Use (PEU). PEU reflects an individual's perception regarding how difficult or simple it is to use the technology, depending on the cognitive resources required. PU can be interpreted as believing that a certain system will improve productivity when doing a specific activity.

Studies have demonstrated that if users think a new technology is useful and easy to handle, its adoption is more likely (Granić & Marangunić, 2019). However, Venkatesh Davis (1996) emphasized the importance of external factors that affect PEU and PU. Mathieson (1991) noted that understanding these external factors can help explain why a system is accepted. Many researchers have broadened TAM to include external elements to support eLearning acceptance or utilization (Scherer et al., 2019).

Researchers have investigated the connection between TAM factors and various technologies, though few results were consistent. Wojciechowski Cellary (2013) found that TAM factors impacted students' attitudes toward learning in an AR environment designed for Chemistry lessons. Similarly, Briz-Ponce et al. (2017) determined that Perceived Usefulness (PU) and Perceived Ease of Use (PEU) had a direct effect on Attitude (AT) through the use of mobile technology in education. Murillo et al. (2021) also investigated the continuous utilization of the Moodle e-learning system. They discovered PEU was effective on PU but did not immediately affect Behavioural Intention (BI). Conversely, PU did have a direct effect on BI.

Nikou Economides (2017) suggested that PEU positively influences PU, both of which are important indicators of BI. Yang et al. (2021) also demonstrated that a direct relationship exists between PEU and PU and that they affect AT but not.

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Volume 3, Issue 4, Page 97-111, December 31, 2022

Necessarily on BI. Revythi & Tselios (2019) had similar findings but argued that neither variable impact Behavioural Intention. Sánchez-Prieto et al. (2017) proposed that teachers' exploration of the potential effects of mobile device use on BI in future educational practice was influenced by PEU and that each variable has a direct sway on intention. However, Mailizar et al. (2021) found that PEU does not directly affect PU. Ngabiyanto et al. (2021) noted that inexperienced users prioritize learning how to use the information system, while experienced users focus more on PU. Research has shown various connections between the TAM variables depending on the assessed technology. Nevertheless, there is no research yet on applying the TAM to ChatGPT. Thus, this paper evaluates teachers' attitudes toward ChatGPT through TAM.

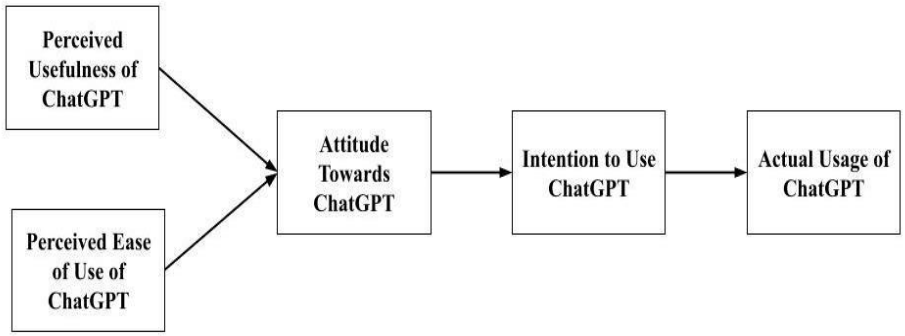


Figure 1 Conceptual Model

Methodology

This study employed a qualitative research methodology to understand teachers' perceptions of ChatGPT. Semi-structured interviews were conducted with 20 university teachers from a private university in Pakistan. All participants were selected based on their experience with e-learning systems. The interview questions focused on the Perceived Usefulness (PU) and Perceived Ease of Use (PEU) of ChatGPT and other external factors influencing teachers' attitudes toward using this technology in the classroom.

Qualitative research is an appropriate methodology for this study as it allows us to go beyond quantitative data and better understand teachers' attitudes towards ChatGPT. The semi-structured interviews provided an in-depth exploration of teachers' beliefs and perceptions, which can help us better understand their perceptions of the technology. Furthermore, qualitative research enables us to obtain in-depth insight into participants' thoughts, beliefs, and opinions, which can be used to understand the topic better.

The interviews were conducted over 15 days during December 2022 and took approximately 60 minutes each. All interviews were recorded, transcribed, and analyzed using NVivo 11 software. The transcripts were coded according to themes related to teachers' perceptions of ChatGPT, such as ease of use, usefulness, external factors

affecting PU and PEU, and teacher support. The data analysis was conducted using a thematic approach based on Braun & Clarke's (2006) six-phase model for thematic analysis.

Findings

This research shows that teachers generally have a negative attitude toward ChatGPT. Most of the participants reported that they found students would use ChatGPT for cheating, and it would make them lazy. They also felt that ChatGPT does not add value to the learning process and could be intrusive in the classroom. Furthermore, teachers expressed concern about the lack of teacher support for using ChatGPT as an educational tool.

Despite this negative attitude, some participants reported that they found ChatGPT useful in certain contexts, such as providing automated feedback to students and allowing teachers more time to focus on other tasks. Furthermore, they reported that ChatGPT could increase student engagement and motivation.

The following themes emerged from the interviews:

Table 1: Themes and Sub-themes

Themes	Sub-Themes
Perceived Usefulness of ChatGPT	Lack of value
	Potential for cheating and plagiarism
	Potential benefits
Perceived Ease of Use of ChatGPT	Training and support
	Lack of understanding
Attitude Towards ChatGPT	Potential for misuse
	Lack of trust in technology
	Potential complications
Intention to Use ChatGPT	Not interested
	Own research and academic activities
	Simple tasks
Actual Usage	Lack of usage
	Occasional use
	Experimenting

Perceived Usefulness

The three themes related to perceived usefulness that emerged from the interviews were lack of value, potential for cheating and plagiarism, and potential benefits for educational purposes. Most participants felt that ChatGPT would not add value or benefit to their classrooms and could be disruptive. Some even thought that it would lead

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Volume 3, Issue 4, Page 97-111, December 31, 2022

to increased cheating and plagiarism. However, a few participants did report that they saw potential benefits in using it in the classroom.

The study also revealed that most of the participants viewed ChatGPT as not being useful in their classrooms. They felt it would not add value to the learning experience and could be intrusive.

> “I do not see how ChatGPT could help in my classroom. It seems like a waste of time, and I do not think students would find it useful.” – P12.

> “I feel like ChatGPT would disturb my classroom and the students.” – P18

> “It could be distracting for both students and teachers.” – P2

Most teachers indicated that they believe students will use ChatGPT only for cheating and will not learn anything new. Some even considered ChatGPT dangerous for the students, as it could lead to the development of bad habits such as plagiarism.

> “I do not think ChatGPT will help students learn anything. It seems like it would just be a way for them to cheat on tests and assignments.” – P4.

> “I think my students would use ChatGPT purely for cheating rather than learn from it.” – P9.

> "Extremely dangerous! It would encourage plagiarism and undermine the value of grades." - P20.

> "How would you prevent cheating with ChatGPT? I do not think it is possible." P1

Despite the negative perceptions of ChatGPT, some participants did report that they saw potential benefits in using it in the classroom. They felt that it could potentially increase student engagement and motivation and allow teachers more time to focus on other tasks.

> “I think ChatGPT could be useful in the classroom. It could help students stay more engaged and motivated, leading to better learning outcomes.”– P13.

> “ChatGPT could provide valuable feedback to students and allow me more time to focus on other tasks.” – P3.

> “I think I can use it as an assistant for grading assignments.” – P10

Perceived Ease of Use

The two themes related to perceived ease of use that emerged from the interviews were lack of training and support and difficulty in understanding how to use ChatGPT; the study found that most participants perceive ChatGPT to be difficult to use and lack the necessary skills to use it effectively. Furthermore, the participants felt a lack of training and support for using the technology in their classrooms. This was seen as a major obstacle to its adoption by teachers.

The lack of training and support was seen as a major obstacle to its adoption by teachers, while some participants felt that it could be beneficial if used in their classrooms.

> "I tried using a few software similar to ChatGPT; I could not do on my own." - P5.

> "It is not as simple as it may seem. How to use it as a teacher requires some practice and training." – P9

The difficulty in understanding how to use ChatGPT was another common theme, with most participants reporting that they found it difficult to use and lacked the necessary skills to use it effectively.

> "It is difficult for me to understand how ChatGPT works. I think it would be difficult for students to use without some guidance from the teacher." - P11.

> "I feel like more training should be available on how to use ChatGPT in the classroom. It would help if we could get more help from the administration." – P20.

Only a few teachers responded positively to the technology, with most feeling that it would be difficult to use for educational purposes.

> "I think ChatGPT is useful. I like how it can provide feedback to students and make the learning process more efficient." – P5.

> "It is certainly not difficult at all. Even school kids can use it" – P17.

> "It is extremely user-friendly" – P4.

> "You do not have to be an Einstein to learn ChatGPT." – P18

Attitude Towards ChatGPT

Most faculty members expressed a negative attitude towards ChatGPT, citing concerns about potential misuse, lack of trust in the technology, and potential complications with student privacy.

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Volume 3, Issue 4, Page 97-111, December 31, 2022

Potential misuse of ChatGPT could include students attempting to use the chatbot to complete assignments or exams without actually understanding the material, plagiarizing answers from previous conversations with the bot, or exploiting vulnerabilities in the system to obtain unauthorized access.

> "I am concerned about the potential for misuse." – P11

> "If students have access to the chatbot 24/7, would they be tempted to use it as a shortcut instead of engaging in meaningful learning?" – P18

> "They may become too reliant on the technology and not use it as a supplement to their learning." – P2

Some faculty members were open to considering incorporating ChatGPT into their courses but expressed reservations about its reliability as a learning tool. They found it difficult to predict how students might interact with the chatbot and expressed concern that errors in the system could lead to misunderstandings or confusion.

> "I am not sure how reliable or consistent the information from ChatGPT would be." – P9.

> "Would my students understand what the bot is saying, or could this lead to confusion?" – P15

> "I am not sure I trust the technology enough yet; I would want more information about security and privacy before I would feel comfortable incorporating ChatGPT into my course." – P10.

Only a few faculty members were more optimistic about ChatGPT and felt it could be used as a supplemental learning aid. They believed incorporating the chatbot into their courses could improve engagement, reduce instructor workloads, and give students easy access to course material.

> "I think ChatGPT could be a great way to supplement my teaching." – P4

> "It can free up some time for me to focus on higher-level tasks." – P8

> "It could help students access information quickly and easily, improving their learning experience." – P16

Intention to use

Most faculty members interviewed did not intend to use ChatGPT in the foreseeable future.

> "I do not think I would ever want to use ChatGPT in my classroom. It seems like it would be too distracting for both the students and teachers." – P8.

> "Not interested! It could lead to rampant cheating and plagiarism, which I do not want to promote." – P13.

> "Not before the technology improves." – P20

Those who did express an intention to use ChatGPT indicated that they would use it primarily for quick and simple tasks, such as checking facts or searching for information. They noted that it could be a helpful tool in the classroom environment, especially when students need help quickly on a complex subject matter.

> "Maybe for some basic stuff." – P1

> "Only to aid with the simple activities, like gathering information about a company." – P16.

Faculty members also perceived ChatGPT as a useful resource for research and academic activities. They noted that it could help them to locate information related to their research topics quickly.

> "I am not sure about the classroom, but I can use it as my research assistant." –P19.

> "I will try how it can help with my lesson plans." P8

Furthermore, a few participants did express an intention to use ChatGPT. They saw potential value in it and felt it could help students stay more engaged and motivated.

> "I think I would be willing to try using ChatGPT in my classroom if safeguards were against cheating and plagiarism." – P10.

> "ChatGPT could be valuable for keeping students engaged, so I would be willing to try it." – P5.

Actual Usage

The three themes related to actual usage that emerged from the interviews were lack of usage, occasional use, and testing. Most participants reported either not using ChatGPT at all or only using it occasionally or on an as-needed basis. Others reported that they were testing the technology and did not use it regularly.

The study also revealed that the actual usage of ChatGPT in the classrooms was very low. Of those who did use it, a majority reported only using it occasionally or on an as-needed basis. Some participants reported testing the technology and did not use it regularly.

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Volume 3, Issue 4, Page 97-111, December 31, 2022

> “I tried using ChatGPT a few times, but I did not find it very useful and so stopped using it.” – P6.

> “I only use ChatGPT occasionally when we need to give quick feedback to students.” – P20.

> "I do not use ChatGPT very often, only when I need it for a specific task." – P3.

> "I rarely use ChatGPT, but I find it useful when I need a quick answer or idea for an assignment." – P13.

> "I am still figuring out how to use ChatGPT in my classroom best, so right now, I am just testing out different features." – P20.

Other findings

Potential Benefits

The most discussed potential benefit by the respondents was the assistance in making lesson plans. A few participants also reported that ChatGPT could be used to give students timely feedback.

> “ChatGPT makes it easier for us to plan our lessons and gives us more time to focus on other tasks.” – P11.

> “I think ChatGPT could help give quick feedback to students in real-time.” – P20.

Strategies to Mitigate Risks

When asked about strategies to mitigate the risks of using ChatGPT, most participants suggested that additional oversight and monitoring could help prevent cheating and plagiarism. Some also recommended stricter rules and guidelines for use to ensure proper usage.

> “Adding more supervision or having teachers monitor student usage could help prevent cheating.” – P9.

> “We need to set up specific guidelines for use and be clear about what is expected from the students.” – P15.

Banning ChatGPT

Most participants reported that they do not support a complete ban on ChatGPT in the classroom, as it can be a helpful tool for engaging students and providing timely feedback.

> "I do not think banning ChatGPT is the right approach; we just need to find ways to use it responsibly." – P1.

> "ChatGPT can be a helpful tool if used correctly, so I do not think banning it is necessary." – P19.

Discussion and Conclusion

Based on the responses from this research, it appears that teachers are not yet ready to accept ChatGPT for use in their classrooms. The perceptions of the teachers were generally negative. Most expressed a reluctance to use ChatGPT in the classroom, while others reported not using it at all or only using it occasionally on an as-needed basis. Most participants did not support a complete ban on ChatGPT in the classroom. It was because many saw some potential benefits of using ChatGPT. Similarly, university teachers' attitudes toward using ChatGPT were negative. The most common concerns were the potential for cheating, plagiarism, and disruption or distraction from traditional learning environments.

The potential benefits of using ChatGPT in higher education include improved lesson planning and the ability to give timely feedback to students. The risks associated with using ChatGPT include the potential for cheating and plagiarism and disruption or distraction from traditional learning environments. Strategies to mitigate the risks of using ChatGPT include adding more supervision or monitoring of student usage, setting up specific guidelines, and being clear about what is expected from students.

This research provides insight into the attitudes and opinions of university teachers towards ChatGPT technology. University faculty and administrators must consider the potential risks associated with using ChatGPT technology in higher education settings and identify strategies to mitigate them while taking advantage of its potential benefits. With increased understanding and knowledge of how best to use ChatGPT technologies responsibly, educators can make informed decisions about implementing and using ChatGPT in their classrooms.

Limitations of the study

This study has some limitations that should be noted. The sample size was relatively small, with only 20 participants responding to the survey. This limited the generalizability of the results, as other university faculty and administrators may have different attitudes toward ChatGPT. Additionally, this research did not assess how students feel about using ChatGPT in higher education settings, which may be a valuable area of study in the future. Furthermore, this research did not assess how ChatGPT technologies are used for teaching and learning in higher education contexts.

Future directions

It would be beneficial to explore further how university faculty and administrators use ChatGPT technology and the potential benefits and risks associated with using ChatGPT technologies in higher education settings. Additionally, future

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research should assess how students perceive and use ChatGPT technology in the classroom. Quantitative research methods may also be useful in providing further insight into the attitudes of university faculty and administrators toward ChatGPT technology. Surveys and interviews could be used to explore the attitudes of a wider range of faculty and student perceptions. Other quantitative methods may also help provide more in-depth information regarding how university faculty use ChatGPT technologies for teaching and learning purposes.

Contribution of the study

This is the first study that explores teacher's perceptions of using ChatGPT in higher education contexts, and its findings are only the beginning of an important conversation. The study provides useful insight into university faculty's perceptions of ChatGPT technology and potential directions for future research. Further research is needed to understand how teachers and students use ChatGPT technologies and strategies to ensure responsible use. By continuing to research ChatGPT technology, educators can make informed decisions about using this powerful tool in higher education contexts. Ultimately, understanding the potential risks and benefits of using ChatGPT technology will help ensure it is used responsibly for teaching and learning purposes.

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