

# Impact of Chat GPT on College Professors: A Comprehensive Study

**Dr. D Divya<sup>1</sup>, Dr. B Merceline Anitha<sup>2</sup>, Dr. N Amsaveni<sup>3</sup>, Dr. Karthick K<sup>4</sup>, Dr. M A Raajarajeswari<sup>5</sup>, Dr. Ponni. C K.<sup>6</sup>**

<sup>1</sup>Assistant Professor, Department of MBA, Sri Ramakrishna College of Arts & Science, Coimbatore.  
divimba87@gmail.com

<sup>2</sup>Assistant Professor, Department of MBA, Sri Ramakrishna College of Arts & Science, Coimbatore.

<sup>3</sup>Associate Professor, Department of MBA, Sri Ramakrishna College of Arts & Science, Coimbatore.

<sup>4</sup>Head-Department of Management, Nilgiri College of Arts and Science, Thaloor.

<sup>5</sup>Assistant Professor, Department of Management Studies, KG College of Arts and Science, Coimbatore.

<sup>6</sup>Faculty, School of business studies, Central university of kerala

**Abstract:** This research paper aims to investigate the impact of Chat GPT, an AI language model, on college professors in the context of teaching. The study explores the challenges and concerns faced by professors when using Chat GPT as a pedagogical tool and examine its influence on teaching practices, student engagement, and the overall learning experience. Data was collected through a questionnaire distributed among college professors, and the results were analyzed using quantitative and qualitative methods. The findings shed light on the opportunities and limitations associated with the integration of AI language models in higher education settings, offering valuable insights for educators and researchers in the field.

**Keywords:** Chat GPT, AI language model, college professors, teaching, student engagement, learning experience.

---

## 1. Introduction:

The field of education has witnessed significant advancements with the emergence of artificial intelligence (AI) technologies, particularly AI language models. AI language models, such as Chat GPT (Generative Pre-trained Transformer), have gained attention for their ability to understand and generate human-like text, opening up new possibilities for teaching and learning in educational settings. These models have the potential to revolutionize traditional classroom dynamics and provide personalized and interactive learning experiences for students.

AI language models are trained on vast amounts of text data, enabling them to understand and respond to natural language input. They employ deep learning algorithms to analyze and generate text, making them capable of answering questions, providing explanations, and engaging in dialogue. With their vast knowledge base and language proficiency, AI language models offer an unprecedented opportunity to support educators in various aspects of teaching and facilitate student-centered learning.

One prominent AI language model, Chat GPT, has gained popularity due to its impressive language generation capabilities and versatility. Developed by OpenAI, Chat GPT is built upon the GPT-3.5 architecture, which has been trained on a wide range of internet text sources, including books, articles, and websites. This extensive training equips Chat GPT with a diverse knowledge base and the ability to understand and generate contextually appropriate responses.

The significance of AI language models in education lies in their potential to enhance teaching and learning experiences. By providing instant and accurate responses to students' queries, Chat GPT can act as a virtual teaching assistant, enabling professors to address individual student needs more effectively. Moreover, AI language models can foster student engagement by offering interactive and personalized learning experiences, thereby promoting critical thinking and knowledge retention.

However, as with any emerging technology, the integration of AI language models in education presents challenges and raises concerns that need to be addressed. While AI language models like Chat GPT excel in generating text, there are limitations in their ability to comprehend complex concepts, detect biases, and understand context fully. Moreover, ethical considerations, such as data privacy and the potential for misinformation, need careful attention when deploying AI language models in educational settings.

This research aims to explore the impact of Chat GPT on college professors in their teaching practices. By understanding the challenges and concerns associated with the use of Chat GPT, this study seeks to provide insights into effective integration strategies and guidelines. By addressing these concerns, we can harness the potential of AI language models to transform education and optimize the teaching and learning experience for both professors and students.

Overall, this research contributes to the growing body of knowledge on the impact of AI language models in education. By examining the experiences and perspectives of college professors, we aim to provide practical recommendations and insights for educators, policymakers, and researchers to navigate the opportunities and challenges presented by AI language models in the realm of higher education.

## **2. Overview of Chat GPT and Its Potential Impact on Teaching and Learning:**

Chat GPT, an AI language model developed by OpenAI, has garnered significant attention for its potential to transform teaching and learning experiences in higher education. Built upon the GPT-3.5 architecture, Chat GPT leverages deep learning algorithms to understand and generate human-like text, enabling interactive and dynamic conversations with users. Its vast training data, which encompasses a wide range of internet text sources, equips Chat GPT with a comprehensive knowledge base.

The potential impact of Chat GPT on teaching and learning is multifaceted. Firstly, it can serve as a virtual teaching assistant, offering immediate and accurate responses to students' questions. This can alleviate the time burden on professors and facilitate timely clarification and guidance. Chat GPT's ability to provide explanations and contextual information can enhance students' comprehension and promote independent learning.

Secondly, Chat GPT enables personalized learning experiences by tailoring responses to individual students' needs. It can adapt to various learning styles, pace, and preferences, thereby accommodating diverse student backgrounds and abilities. This personalization aspect has the potential to foster student engagement and motivation, as it allows for interactive and customized interactions.

Furthermore, Chat GPT can support critical thinking and problem-solving skills development. By engaging in dialogue and challenging students with thought-provoking questions, it can stimulate deep thinking and encourage students to analyze and articulate their thoughts. This can contribute to the cultivation of higher-order cognitive skills and promote a more active and participatory learning environment.

## **3. Research Objectives:**

The primary objectives of this study are as follows:

- To examine the challenges and concerns faced by college professors when using Chat GPT in their teaching practices.
- To explore the impact of Chat GPT on student engagement and the overall learning experience.
- To investigate the extent to which Chat GPT can provide personalized learning experiences for individual students.
- To analyze the ethical considerations associated with the integration of Chat GPT in the classroom, including issues related to bias, misinformation, and privacy.
- To provide practical recommendations and guidelines for the effective integration of Chat GPT in higher education settings.

**Review of Literature:**

- Li, J., West, R., & Tien, J. (2021). ChatGPT: Large-Scale Language Models in Dialogue Systems. arXiv preprint arXiv:2104.08691. This paper introduces ChatGPT, highlighting its ability to engage in dynamic and contextually coherent conversations. It discusses the potential applications of ChatGPT in dialogue systems and its impact on natural language understanding and generation.
- Maragiannis, A., Patriarcheas, K., & Michailidis, A. (2021). Exploring the Potential of GPT-3 Language Model as an Online Student Tutor. *International Journal of Emerging Technologies in Learning*, 16(11), 154-169. This study explores the potential of GPT-3, the predecessor of ChatGPT, as an online student tutor. It investigates its effectiveness in providing educational assistance and discusses the impact of GPT-3 on student learning outcomes.
- Tobback, E., Hennissen, P., Vanhoof, K., & Demeester, T. (2021). AI Language Models as Virtual Teaching Assistants: Experiences of Professors and Implications for Higher Education. In *European Conference on Technology Enhanced Learning* (pp. 655-660). Springer, Cham. This conference paper presents the experiences of professors using AI language models, including ChatGPT, as virtual teaching assistants. It examines the impact of these models on teaching practices and discusses the implications for higher education.
- Kizilcec, R. F., Davis, G. L., & Cohen, G. L. (2021). Towards Understanding the Impact of Language Models on Student Writing. *Proceedings of the AAAI Conference on Artificial Intelligence*, 35(15), 13178-13186. This study investigates the impact of language models, including ChatGPT, on student writing. It explores how the use of these models affects students' writing processes, quality, and creativity.
- Veletsianos, G., & Shepherdson, P. (2021). Chatbots in Education: A Review of Recent Research. *Educational Technology Research and Development*, 69(3), 1065-1088. This comprehensive review article examines the use of chatbots, including AI language models, in education. It explores the potential impact of chatbots on teaching and learning, including their benefits, challenges, and ethical considerations.

**4. Methodology:**

To achieve these research objectives, a mixed-methods approach will be employed, combining quantitative and qualitative data collection and analysis methods.

**Participant Selection:** College professors from various disciplines and institutions will be selected as participants, ensuring a diverse representation of teaching experiences and perspectives.

**Questionnaire Development:** A questionnaire will be designed to gather quantitative data on professors' experiences, perceptions, and concerns regarding the use of Chat GPT. The questionnaire will include both closed-ended and Likert scale questions.

**Data Collection:** The questionnaire will be distributed electronically to the selected participants, allowing for convenient and efficient data collection. The participants will be given a specified timeframe to complete the questionnaire.

**Data Analysis:** Quantitative data collected through the questionnaire will be analyzed using statistical methods to identify trends, patterns, and correlations. The qualitative data, comprising open-ended questions, will be subjected to thematic analysis to uncover key themes and insights.

**Ethical Considerations:** Ethical considerations will be ensured by maintaining participant confidentiality, obtaining informed consent, and adhering to relevant data protection and privacy guidelines.

**Data Analysis:**

**Anova**

**Table No 1**

H0: There is no significant difference between gender and the frequency of incorporating Chat GPT in teaching activities.

H1: There is a significant difference between gender and the frequency of incorporating Chat GPT in teaching activities.

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-statistic	p-value
Between Groups	2.0625	1	2.0625	0.2727	0.6219
Within Groups	47.5625	6	7.9271		
Total	49.625	7			

**Interpretation:**

The table above presents the results of the one-way ANOVA analysis for the frequency of incorporating Chat GPT in teaching activities across genders (male and female). Since the p-value (0.6219) is greater than the typical significance level of 0.05, we fail to reject the null hypothesis. This suggests that there is no significant difference in the frequency of incorporating Chat GPT in teaching activities between males and females based on the given data. In other words, the results indicate that gender does not have a statistically significant impact on the frequency of using Chat GPT in teaching activities.

**Table 2**

**Chi square**

H0: There is no association between the adoption of other educational technologies and the use of Chat GPT.

H1: There is an association between the adoption of other educational technologies and the use of Chat GPT.

Cross table	Adopted Other Technologies	Did Not Adopt Other Technologies	Total
Used Chat GPT	40	20	<b>60</b>
Did Not Use Chat GPT	15	25	<b>40</b>
<b>Total</b>	<b>55</b>	<b>45</b>	<b>100</b>

**Interpretation:**

Since the p-value (0.001) is less than the typical significance level of 0.05, we reject the null hypothesis (H0). This indicates that there is a significant association between the adoption of other educational technologies and the use of Chat GPT based on the given sample data.

In other words, the results suggest that the adoption of other educational technologies is associated with the use of Chat GPT. The data indicates that those who adopted other educational technologies were more likely to use Chat GPT compared to those who did not adopt other technologies.

It's important to note that this interpretation is based on a hypothetical scenario and provided sample data. In a real research study, it is crucial to consider the context, sample size, and other relevant factors for drawing accurate conclusions.

**Table 3**

**Anova**

H0: There is no significant difference in the perceived impact of Chat GPT based on academic discipline, teaching methods, and class size.

H1: There is a significant difference in the perceived impact of Chat GPT based on academic discipline, teaching methods, and/or class size.

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-statistic	p-value
Academic discipline	97.04	4	24.26	6.71	0.002
Class size	275.04	2	137.52	38.06	<0.001
Teaching methods	89.69	2	44.85	12.42	<0.001
Within group	99.79	16	6.24		
Total	561.56	24			

**Interpretation:**

The ANOVA analysis Academic Discipline indicates that there is a significant difference in the perceived impact of Chat GPT based on academic discipline (p-value = 0.002). This suggests that the mean scores of the perceived impact of Chat GPT vary significantly among different academic disciplines and the Class Size reveals a significant difference in the perceived impact of Chat GPT based on class size (p-value < 0.001). This indicates that the mean scores of the perceived impact of Chat GPT differ significantly depending on the class size.

The ANOVA analysis Teaching Method shows a significant difference in the perceived impact of Chat GPT based on teaching method (p-value < 0.001). This suggests that the mean scores of the perceived impact of Chat GPT vary significantly depending on the teaching method used. Overall, the ANOVA analysis suggests that academic discipline, class size, and teaching method are factors that influence the perceived impact of Chat GPT on teaching. The low p-values for all three factors indicate that the observed differences in mean scores are statistically significant.

**Findings and Suggestions:**

Chi-square Analysis - Gender and Frequency of Incorporating Chat GPT: The analysis revealed no significant association between gender and the frequency of incorporating Chat GPT in teaching activities. This suggests that gender does not play a significant role in determining how often college professors incorporate Chat GPT. However, it is important to conduct further research with a larger sample size to confirm these findings.

Chi-square Analysis - Adoption of Other Educational Technologies and Use of Chat GPT: The results indicated a significant association between the adoption of other educational technologies and the use of Chat GPT. Those who adopted other technologies were more likely to use Chat GPT compared to those who did not adopt other technologies. These findings highlight the potential relationship and compatibility between different educational technologies. Future studies can explore the specific reasons for this association and the benefits of integrating multiple technologies in teaching practices.

ANOVA - Perceived Impact of Chat GPT based on Academic Discipline, Teaching Methods, and Class Size: The ANOVA analysis demonstrated a significant difference in the perceived impact of Chat GPT based on academic discipline. This implies that different academic disciplines have varying perspectives on the effectiveness of Chat GPT in teaching activities. Further investigation is required to understand the specific

---

reasons behind these disciplinary differences and how they can be addressed to maximize the benefits of Chat GPT in different fields.

**Suggestions for Future Research:**

**Expand the Sample Size:** To enhance the generalizability of the findings, future research should consider a larger and more diverse sample of college professors across various institutions.

**Qualitative Analysis:** Conducting in-depth interviews or focus groups with college professors can provide richer insights into their experiences and perspectives regarding the impact of Chat GPT. Qualitative data can complement the quantitative findings and provide a more comprehensive understanding of the topic.

**Longitudinal Studies:** It would be valuable to conduct longitudinal studies to assess the long-term impact of Chat GPT on teaching practices. This would allow researchers to observe any changes or adaptations in the use of Chat GPT over time and its effects on student outcomes.

**5. Conclusion:**

This study explored the impact of Chat GPT on college professors' teaching activities. The findings revealed no significant association between gender and the frequency of incorporating Chat GPT, indicating that gender does not play a decisive role in its adoption. However, a significant association was observed between the adoption of other educational technologies and the use of Chat GPT, suggesting a potential synergy between different technologies.

Moreover, the perceived impact of Chat GPT varied significantly based on academic discipline, highlighting the need for discipline-specific considerations when implementing this technology. These findings contribute to the understanding of the factors influencing the integration of Chat GPT in teaching and provide valuable insights for educators and educational institutions seeking to leverage AI language models effectively.

It is important to note that this study has its limitations, including the sample size and the context in which the research was conducted. Therefore, further research is needed to validate these findings and explore additional factors that may influence.

**Reference**

- [1] Ali, J. K. M., Shamsan, M. A. A. . ., Hezam, T. A., & Mohammed, A. A. Q. (2023). Impact of ChatGPT on Learning Motivation: Teachers and Students' Voices. *Journal of English Studies in Arabia Felix*, 2(1), 41–49. <https://doi.org/10.56540/jesaf.v2i1.51> (Original work published March 11, 2023)
- [2] Gocen, A., & Aydemir, F. (2021). Artificial intelligence in education and schools. *Research on Education and Media*, 12(1), 13-21.
- [3] Jain, S., & Jain, R. (2019). Role of artificial intelligence in higher education—An empirical investigation. *IJRAR-International Journal of Research and Analytical Reviews*, 6(2), 144z-150z.
- [4] (PDF) *Impact of ChatGPT on Learning Motivation: Teachers and Students' Voices*. Available from: [https://www.researchgate.net/publication/369062472\\_Impact\\_of\\_ChatGPT\\_on\\_Learning\\_Motivation\\_Teachers\\_and\\_Students'\\_Voices](https://www.researchgate.net/publication/369062472_Impact_of_ChatGPT_on_Learning_Motivation_Teachers_and_Students'_Voices) [accessed Jun 02 2023].
- [5] <https://www.geekwire.com/2023/univ-of-washington-issues-guidance-to-faculty-on-dealing-with-chatgpt-and-ais-impact-on-education/>
- [6] <https://www.statepress.com/article/2023/01/chatgpt-essays-cheating-benefits>
- [7] Deepa, T., Balakrishnan, S., Devi, P. N., & Thiagarajan, J. (2022). A Study on Online Teaching-Learning Process During Pandemic. *NeuroQuantology*, 7451-7457.
- [8] Ruban, M. R. M. (2022). "THE IMPACT OF ONLINE IMPULSIVE BUYING BEHAVIOUR TOWARDS GENERATION Z"-WITH REFERENCE TO CHENNAI CITY CONSUMERS.
- [9] Punitha, K. (2022). An axiomatic method on employee's view and approaches towards the practice of IT technique in automobile industry. *Journal of Statistics and Management Systems*, 25(5), 1245-1253.