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## University Faculty's Perspectives on Implementing ChatGPT in their Teaching

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### Abstract

*The present study explored a comprehensive investigation of university professors' perspectives on the implementation of ChatGPT – an artificial intelligence-powered language model – in their teaching practices. A diverse group of 30 university professors responded to a questionnaire about the level of their interest in implementing the tool, willingness to apply it, and concerns they have regarding the intervention of ChatGPT in higher education setting. The results showed that the participants are highly interested in employing the tool into their teaching practice, and find that the students are likely to benefit from using ChatGPT in classroom settings. On the other hand, they displayed concerns regarding high dependency on data, privacy-related issues, lack of supports required, and technical constraints. In today's fast-paced society, educators are urged to mindfully apply this inevitable generative AI means with thoughtfulness and ethical considerations to and for their learners. Relevant topics are discussed to successfully intervene AI tools in teaching practices in higher education.*

**Keywords:** ChatGPT, artificial intelligence, generative AI, language models, higher education, university faculty

## 1. INTRODUCTION

### 1.1 Background of the Study

The recent advance of language models generated by artificial intelligence (AI) has shown potential to reform the field of natural language processing, redefining how humans interact with technology. Among them, one particularly notable and influential model is ChatGPT, which can present an unparalleled ability to generate human-like responses to a wide range of prompts. Its usage and application stimulated interests of researchers in higher education and university faculty alike.

Predictably, university faculty's perspectives on the integration of ChatGPT in higher education are twofold. While some embrace the technology with enthusiasm [1], seeing it as a valuable tool to enhance students' learning experience, others approach it with caution, being mindful of potential drawbacks and apparent challenges [2]. Those who support and even encourage its intervention strongly believe that

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ChatGPT could be a powerful resource that can create an interactive and intellectually motivating learning environment in which students' creativity, critical thinking, and problem-solving skills are better fostered [2]. They appreciate its ability to provide instant access to a vast source of knowledge and information, making it a valuable supplement to conventional teaching materials. Professors also find that ChatGPT can serve as a useful research assistant, helping them to generate citation and references, perform statistical analysis, proofread for spelling, grammar, punctuation, and formatting errors, and translate international references to their mother languages [3].

Conversely, there are concerns among university professors regarding the intervention of ChatGPT in education settings. For example, it could be difficult for faculty to distinguish between students' own writing and that generated by AI applications; in such cases, faculty may not manage to adequately evaluate students' level of understanding of course material conveyed [4]. Other worries include not being able to detect students' plagiarism, unfair evaluation on their work, university professors' increased workload to verify the authenticity of student work, and adapting newly developed teaching methods appropriate for AI-implemented teaching and learning environments [5].

## 1.2 Rationale of the Study

Examining the perspectives of university professors regarding ChatGPT implementation in higher education is an essential and timely endeavor. This exploration is vital particularly because not only does it have potential to resolve aforementioned challenges and concerns, but also reveals valuable insights that can generate more effective strategies for the integration of ChatGPT into college classrooms. Understanding how college professors perceive the current issues surrounding ChatGPT in higher education would help college leadership to accurately diagnose the status quo, learn what types of supports are necessary, and decide the size of financial investment they are to make accordingly.

Admittedly, the application of ChatGPT in colleges is indeed inevitable, and the demands for its usage are likely to only increase. Its success relies on a thorough exploration of the perceptions and insights of the faculty. By actively engaging with educators in this discussion, colleges are expected to develop more informed strategies, policies, and support mechanisms to ensure effective integration of ChatGPT into higher education settings.

## 1.3 Research Questions

Research Question 1: To what degrees do university professors believe that ChatGPT needs to be implemented in higher education setting?

Research Question 2: To what degrees are university professors willing to implement ChatGPT in their teaching?

Research Question 3: What concerns do university professors have regarding the intervention of ChatGPT in higher education setting?

## 2. METHODS

The study involved a sample of 30 faculty members of a four-year university located in a metropolitan city in South Korea. The participation was voluntary, and informed consent was obtained. The data were collected through a structured questionnaire regarding their perspectives on the implementation of ChatGPT in higher education settings. The questionnaire consisted of three categories: descriptive statistics, interest level in implementing ChatGPT in their teaching, and general usage of ChatGPT in teaching.

The survey was conducted over a one-week period, specifically between August 31<sup>st</sup> and September 6<sup>th</sup>, 2023, in order to ensure that the participants had sufficient time to respond thoughtfully to the questions. The participants were provided with an electronic form of the questionnaire, and were given the flexibility to

complete it at their convenience during the specified week. This approach allowed for easy data collection and analysis while ensuring the safety and privacy of responses of the participants. Data collected from the questionnaire was subjected to simple statistical analysis. Descriptive statistics such as means, standard deviation, and percentages were conducted for relevant variables to summarize the responses.

### 3. RESULTS

#### 3.1 Descriptive Statistics

Table 1 shows descriptive statistics of the 30 participants based on their gender, major fields of teaching, and rank.

**Table 1. Descriptive statistics of the participants**

	Demographic Characteristics	Frequency	Percentage
Gender	Female	7	23.33
	Male	23	76.67
Major Field	Humanities and social sciences	13	43.3
	Natural science	11	36.7
	Engineering	3	10.0
	Arts	3	10.0
Rank	Professor	3	10.0
	Associate Professor	9	30.0
	Assistant Professor	18	60.0
Total		30	100.0

#### 3.2 Participants Interests and Opinions in Using ChatGPT in Teaching

The second category of the questionnaire asked the participants about how much they are interested in implementing ChatGPT in their teaching. It also asked about the participants' perceptions regarding the necessity for ChatGPT training in their university (shown in Table 2).

**Table 2. Participants' interests in using ChatGPT in their teaching**

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Are you interested in using ChatGPT in your teaching?	1 (0.3%)	0 (0%)	5 (16.7%)	8 (26.7%)	16 (53.3%)	30 (100.0%)
Do you think that there is a need for training in ChatGPT?	0 (0%)	0 (0%)	1 (0.3%)	12 (40.0%)	17 (56.7%)	30 (100.0%)

The third category of the questionnaire sought participants' perspectives on several aspects related to ChatGPT, including willingness to incorporate it into their teaching, their perceptions of its advantages and disadvantages, the types of support they would require to better use ChatGPT, and their strategies for evaluating students' work with the assistance of ChatGPT (showing in Table 3).

**Table 3. Participants' opinions in using ChatGPT in their teaching**

Item	Sub Items	N	%
How would you like to integrate ChatGPT into your teaching? (Multiple responses)	▪ Developing new teaching contents and learning materials	23	56.1
	▪ Establishing an automatic response system for students' inquiries	6	14.6
	▪ Tracking students' progress and understanding in learning	10	24.4
	▪ Not willing to use ChatGPT in teaching	2	4.9
	Total	41	100.0
What educational purposes would you like to achieve using integrative AI into your teaching? (Multiple responses)	▪ Improving students' motivation and problem-solving skills	20	39.2
	▪ Providing customized learning experience for students	14	27.5
	▪ Automatically generating and evaluating learning materials	15	29.4
	▪ Not willing to use ChatGPT in teaching	2	3.9
	Total	51	100.0
In your opinion, what are advantages of integrative AI implemented in education? (Multiple responses)	▪ Inducing faculty-student interaction and engagement	10	23.8
	▪ Providing immediate feedback	10	23.8
	▪ Saving time and money	20	47.6
	▪ Not sure	1	2.4
	▪ Never used it previously	1	2.4
Total	42	100.0	
In your opinion, what are disadvantages of integrative AI implemented in education? (Multiple responses)	▪ High dependency on data	13	33.3
	▪ Issues related to privacy and ethical considerations	20	51.3
	▪ Technical constraints	6	15.4
	▪ Others	0	0.0
	Total	39	100.0
What kinds of supports do you think would be necessary if generative AI (e.g., ChatGPT) is implemented in teaching? (Multiple responses)	▪ Generative AI platform software	11	36.7
	▪ Learning materials and exemplar database	11	36.7
	▪ Learning interface for faculty and students	7	23.3
	▪ Others – Ethics education	1	3.3
	Total	30	100.0
When evaluating students' work using ChatGPT, what would be a good approach for this purpose? (Multiple responses)	▪ Evaluating students' works using automated quizzes or test formats	11	36.7
	▪ Evaluating students' participation and creativity levels in learning processes	11	36.7
	▪ Evaluating students' writings and project outcomes	6	20.0

▪ Not willing to use ChatGPT in evaluation process	1	3.3
▪ Never considered using ChatGPT to evaluate students' works	1	3.3
Total	30	100.0

## 4. DISCUSSION

### 4.1 Summary of the Findings

The present study attempted to analyze university professors' viewpoints on the implementation of the notable and influential generative AI (i.e., ChatGPT) into their teaching practices, along with concerns they may have regarding the intervention of the tool in higher education setting. Evidently, while the professor participants appeared to be drawn to this cutting-edge technology due to its perceived advantages, they asserted that users need to exercise caution because of its predictable and possibly harmful disadvantages. Based on the responses from the professor participants, a few of major findings are summarized and discussed.

The university professors demonstrated a relatively high level of interests and willingness in implementing ChatGPT into their teaching practices. It is mainly because of the advantages that integrative AI tools can possibly provide: saving time and money, possible improvement of students' motivation and problem-solving skills, establishment of an automatic response system for students' inquiries, and development of new teaching contents and learning materials.

The university professors expressed high expectations for ChatGPT's impact on college students' learning experiences in general. They anticipated that its appropriate usage could lead to significantly positive educational impacts, including provision of immediate feedback, facilitation of easier evaluation on students' works, and development of greater faculty-student interaction and engagement. In order to successfully achieve the aforementioned gains, the participants asserted that appropriate training sessions need to be provided for effective implementation of ChatGPT.

On the other hand, the university professors also verified concerns related to the intervention of ChatGPT in educational settings. Privacy issues, technical constraints, and the potential for negative consequences were among their apprehensions. This suggests a need for a balanced approach, where the benefits of the technology are maximized while managing to reduce its risks to the minimum. Another distinguished aspect that emerged from the responses was the professors' belief in the necessity of ethics education to support the responsible use of ChatGPT in teaching practices. This highlights a proactive approach to addressing ethical concerns and ensuring that both professors and students are well-informed about the moral implications of using AI technology in higher education.

### 4.2 Limitations and Future Studies

Researchers need to exercise caution when interpreting the findings of this study as there are a few limitations evident. The most significant is the small sample size of only 30 participants, which may not represent an adequately diverse range of opinions and experience among university professors, resulting in a lack of generalizability of the findings. Second, because the study focused exclusively on a single institution, the findings may not capture various perspectives in other educational settings. Different institutions may have distinct teaching methods, student demographics, and technological infrastructures that could affect professors' perspectives on applying ChatGPT into their teaching practice. Third, given the relatively small sample size and the fact that they are from a single institute, there is a possibility of biased responses in which the participants being influenced by institutional expectations.

Those who seek to explore relevant topics may consider a series of in-depth qualitative study in which

interviews and/or focus-group interviews are conducted to investigate deeper into the nuances of professors' opinions associated with ChatGPT integration. Also, as discussed from the findings, development of ethical frameworks for responsible usage of ChatGPT in education, and exploring how education and guidelines can be integrated into curriculum and relevant programs could be a topic worth investigating. Lastly, researchers could examine existing policies and regulations related to AI usage in education, and suggest recommendations for policymakers in order to ensure accountable and equitable AI integration in higher education.

## 5. CONCLUSION

As Neumann et al. (2023) suggested, this technology is not likely to disappear in the future [6]. Researchers and educators alike need to determine how they should teach students the required skills and knowledge for sensible and adequate use of ChatGPT in higher education. Similarly, Castillo et al. (2023) encouraged educators to fundamentally renew their teaching methods and learning settings [7] because the higher education has never been more challenged to demonstrate our ability for human ingenuity and apt judgement. The authors underlined that today's fast-paced world, technology's constant evolution and increasing global interconnectedness have brought about significant transformations in society, the economy, and education. From its early implementation, ChatGPT's state-of-the-art language model has the capacity to reform the educational landscape as we know it [7].

The integration of ChatGPT into higher education presents a significant opportunity to revolutionize the landscape of the academia. Nevertheless, to fully grasp its potential in a prolific fashion, educators are urged to approach its intervention with deliberate thoughtfulness and ethical mindfulness. By fostering a culture of responsible usage, academic institutions can create an intellectually stimulating environment in which technology elevates the pursuit of knowledge, guiding students toward a brighter and more enlightened future.

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