Exploring Public Perceptions of ChatGPT in Education through Netnography and Social Media Analysis

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Abstract

This study aimed to examines public perceptions of ChatGPT, a language model developed by OpenAI, particularly in the context of education. Netnography and Social Network Analysis were employed in this study. Using Instagram as the main source of data, the top 10 posts related to ChatGPT were analyzed, and three active groups discussing the technology were identified: university accounts, education influencers, and AI technology developers. A keyword analysis was conducted, and 24 related search terms were grouped into four clusters, showing that ChatGPT is directly related to artificial intelligence, machine learning, learning systems, research, data mining, ethics, and authorship. Overall, the development of ChatGPT has attracted the attention of various parties, particularly in the field of education. There is significant concern about the impact of this technology on humanistic values in education, but many parties are also striving to optimize ChatGPT's potential to improve effectiveness and efficiency in the teaching and learning process. Therefore, a better understanding and adaptation of ChatGPT technology is needed to minimize negative impacts and maximize its positive potential in the world of education.

Keyword: ChatGPT, Social Media, Public Perceptions, VosViewer

INTRODUCTION

Humans have undergone significant changes over time, transitioning from hunting to farming and developing more modern civilizations. The discovery of new transportation tools and the shift to the information technology and Artificial Intelligence eras have also occurred in relatively short periods of time. Time moves on, civilizations continue to evolve, and change is inevitable. The faster these changes occur, the shorter the time frame for change (He, 2020). As such, we must decide whether we will resist or adapt to these changes.

The education sector is always changing, adapting to meet the challenges of the times. In Indonesia, there is a choice between sticking with traditional teaching methods or embracing new trends (Khan et al., 2023) Recent advancements, such as ChatGPT, a language model developed by OpenAI, have disrupted the education world. ChatGPT uses Natural Language Processing to understand human language and generate contextually-appropriate responses (Lee & Hsiang, 2020) It has been trained on large and diverse datasets, allowing it to perform tasks like translation, text generation, lesson planning, and answering complex questions. ChatGPT represents a significant improvement over traditional chatbots, with its ability to understand the underlying context of commands and questions (Pavlik, 2023).

ChatGPT is a versatile tool that can be used as a virtual assistant, chatbot, or text analysis tool (Gupta, 2022). Its natural language processing capabilities allow it to understand questions,

respond to requests, and extract information from text. OpenAI is continually improving and refining the model, with new versions being released that are more sophisticated and capable of producing more precise and relevant answers. ChatGPT is a powerful tool that has proven to be highly effective in a variety of applications (Saravanan & Sudha, 2022).

ChatGPT has a significant role to play in the education industry, such as automatically scoring assignments, serving as a teaching assistant, creating personalized learning experiences, assisting researchers, providing quick access to information, creating learning scenarios and content, and translating (Khan et al., 2023). However, there are concerns regarding plagiarism and cheating, as many students are using ChatGPT to complete school assignments, allowing them to avoid thinking for themselves (Denning & Arquilla, 2022). To address these issues, the education industry needs to adapt by changing assignment patterns to prevent cheating and plagiarism. The potential for ChatGPT to become a "companion" to optimize education is also significant (Lund & Wang, 2023).

The use of ChatGPT has sparked a recent debate on social media, with some advocating for its potential benefits for education in the future, while others are apprehensive about its ability to impede human creativity and potentially replace human roles in various fields. Nevertheless, the discourse on ChatGPT on social media is an engaging discussion (Dirting et al., 2022). By identifying the discourse, we can comprehend public attitudes towards ChatGPT, and from these discussions, we can formulate how the education sector should approach this phenomenon.

Research to understand the public's perception on Instagram about ChatGPT for education is crucial. In today's increasingly digitalized era, technology like ChatGPT can provide significant benefits to the field of education. However, to maximize the potential of this technology, it is important to understand how society perceives it, especially among students and educators. This research can provide information on how ready the public is to accept this technology, as well as the obstacles and challenges that need to be addressed to implement this technology in education. Additionally, this research can provide input for technology developers to optimize features related to education and improve the quality of technology to better assist the learning process. Therefore, research on public perception on Instagram about ChatGPT for education is urgently needed to fully utilize this technology in the field of education.

Given the background, the research problem formulated is "What is the public's perception through Instagram social media about the ChatGPT phenomenon in education?" The aim of this research is to explore the public's perception through Instagram social media about the ChatGPT phenomenon.

METHOD

This study will use netnography method and social network analysis (SNA) approach to explore public discourse on ChatGPT for education via Instagram social media. Netnography research is a participatory approach that involves direct involvement of researchers to study cultural elements, such as language use, rituals, community identity, stories, and discourses that develop in the virtual world using technology to understand their meaning, values, and power (Ferreira & Chimenti, 2022; Kozinets, 2020; Wu, 2022).

The SNA approach will be used to map the networks present on social media (Quinn et al., 2012). Through SNA, the researcher aims to map key posts related to the ChatGPT topic and then analyze the discourse that develops on Instagram. The data found will then be visualized using R and Vosviewer tools (McAllister et al., 2022). Through the visualization process, a more concrete picture of the discourse and keywords frequently used on Instagram regarding the ChatGPT topic is expected to be obtained (Majeed et al., 2020). This research will allow for a comprehensive analysis of the discourse surrounding ChatGPT on social media platforms, particularly on Instagram. Furthermore, by utilizing the netnography approach and SNA analysis, the study will provide a better understanding of public perception of ChatGPT and its potential use in the field of education. Additionally, the study may identify any challenges and limitations that need to be addressed to maximize the benefits of ChatGPT for education. By exploring the public's perceptions on this topic, this research will provide important insights that could be used by developers to optimize features related to education and enhance the quality of the technology to support the learning process. Therefore, it is essential to conduct this research to fully utilize the potential of ChatGPT in the field of education.

The research process began with data collection of Instagram posts using the keyword "ChatGPT for Education". The next step was to select relevant posts related to the topic. Out of the 48 posts found, duplicates were removed, resulting in 20 posts. The posts were then further screened to remove irrelevant ones, leading to a final selection of 10 posts from 9 different accounts. The chosen posts were then analyzed to identify various discourses surrounding the ChatGPT topic. In order to identify relevant keywords, the researchers utilized the R tool, which allowed for data visualization using Vosviewer. This tool allowed the researchers to analyze and map out the connections between keywords, which gave them a better understanding of the most commonly used terms related to ChatGPT in Instagram posts. The use of social network analysis and data visualization tools provided a comprehensive analysis of the posts and their underlying discourses. Through this process, the researchers were able to gain a deeper

understanding of the public's perceptions and attitudes towards ChatGPT in the context of education. Furthermore, the research provides valuable insights for developers of ChatGPT technology to optimize its features and enhance its impact on the education sector.

RESULTS AND DISCUSSION

In exploring Instagram users' perceptions of ChatGPT usage, an in-depth analytical approach is applied through social media netnography. In an era where online interactions are increasingly inseparable from daily life, it is crucial to understand how technologies like ChatGPT influence and resonate within the Instagram community. Through this method, we can delineate unique patterns in conversations, user responses, and interpretations of ChatGPT, providing profound insights into the dynamics of the relationship between language technology and online communities. This article will dissect the results of social media netnography analysis to unveil perspectives emerging amidst online interactions on the Instagram platform regarding the use of ChatGPT that can be seen in Figure 1.
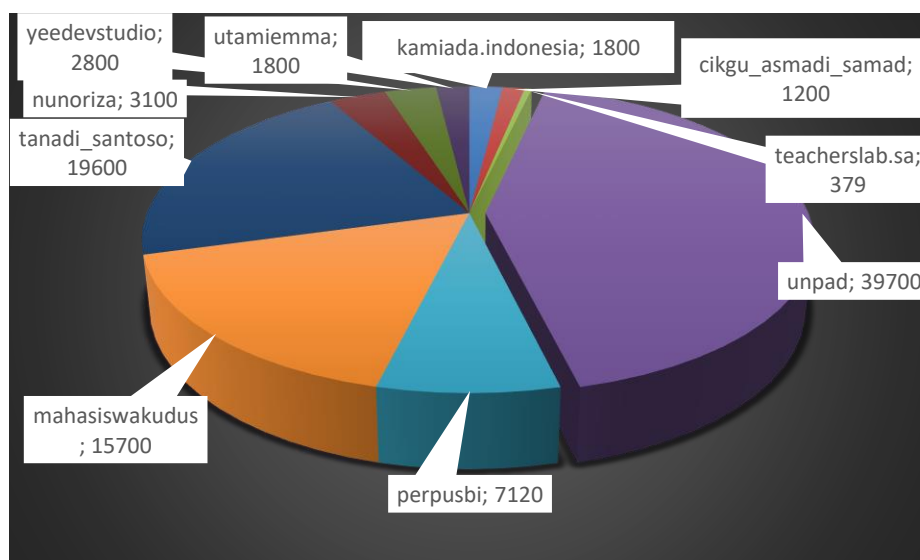

Figure 1. Instagram accounts that discuss ChatGPT and their number of followers

The use of social media as a platform for discussion and information sharing has increased significantly in recent years, particularly in the field of education. Instagram, as one of the most popular social media platforms, has become a hub for educators, students, and researchers to share their thoughts and ideas about various educational topics. One such topic that has gained significant attention is ChatGpt for Education. Through an analysis of the most popular Instagram posts using the keyword ChatGpt for Education, 10 popular posts were identified from 9 different Instagram accounts that can be seen in Figure 1. Of these 9 accounts, the top 5 accounts with the largest number of followers were found to be unpad, tanadi_santoso, mahasiwakudus, perpusbi, and nunoriza, respectively. Of these top 5 accounts, three (nunoriza,

mahasiswakudus, and tanadi_santoso) were found to be education-focused influencers, while the other two (unpad and perpusbi) were official institutional accounts.

Further analysis revealed that the account with the most posts about ChatGpt was the Instagram influencer, tanadi_santoso, with 2 posts about the topic. From these Instagram accounts, a total of 10 posts were identified, each presenting different perspectives on ChatGpt for Education. The findings of this analysis suggest that Instagram has become an important platform for the discussion and sharing of ideas related to ChatGpt for Education. The popularity of education-focused influencers on Instagram, such as nunoriza, mahasiswakudus, and tanadi_santoso, highlights the significance of social media in the field of education. Furthermore, the presence of official institutional accounts, such as unpad and perpusbi, suggests that educational institutions are recognizing the importance of social media as a tool for sharing information and engaging with their audiences. The Instagram account and substance of posts is can be seen in Table 1.

Table 1. Instagram account and substance of posts

Account	Substance
kamiada.indonesia	The Singapore government will teach students and teachers how to use ChatGPT
cikgu_asmadi_samad	Short instructions on how to use ChatGPT to improve teacher performance
teacherslab.sa	ChatGPT in the world of education: Friend or foe
Unpad	ChatGPT for higher education: Opportunity or threat?
Perpusbi	Artificial Intelligence in the world of learning: Avoid or utilize?
Mahasiswakudus	Hong Kong starts banning the use of ChatGPT among students
tanadi_santoso	ChatGPT will undoubtedly change the face of education, and the education world needs to respond appropriately
Nunoriza	ChatGPT has many limitations, so there is no need to overreact and consider ChatGPT as a significant danger to the education world
Yeedevstudio	If utilized properly, ChatGPT can help maximize learning conditions
Utamiemma	ChatGPT is believed to create disruptions in various fields, but it should be remembered that to optimize its use, it must be balanced with the ability to ask the right questions to ChatGPT by the users
tanadi_santoso	ChatGPT has become a game changer in various fields around the world, but behind its greatness, there are several limitations that are apparently 'factors that only humans possess'. Collaboration and adaptation between ChatGPT and humans will create something extraordinary

In this study, it is evident that the unpad Instagram account is the most popular and has the highest interaction regarding ChatGPT. The post that attracted attention discussed the

discussion of whether ChatGPT would be an opportunity or a threat to higher education. This shows that higher education is one of the parties that are paying attention to the development of ChatGPT technology and needs to adapt to it.

In the context of the use of ChatGPT in education, the dominant discourse from the top 10 Instagram posts is about how the education sector needs to adapt to the presence of this technology. Many are concerned that this AI technology could replace teachers or even lead to the loss of human values in the learning process. Therefore, there needs to be adaptation from the education sector to make the most of this technology while still maintaining human values in the teaching and learning process. Furthermore, it is evident that three education-focused influencer accounts, namely nunoriza, mahasiswakudus, and tanadi_santoso, also discuss ChatGPT. This shows that influencers are also paying attention to the development of ChatGPT technology and are trying to provide accurate information and understanding to their followers. Thus, the results of this study indicate a significant concern regarding the presence of ChatGPT technology in education, and there is a need for better adaptation and understanding from relevant parties. Additionally, the influence of influencers can also help provide accurate information and understanding to the general public regarding the development of technology in the education field. The visualization of keyword network analysis about ChatGpt on Instagram is can be seen in Figure 2.

Figure 2. Visualization of Keyword Network Analysis about ChatGpt on Instagram

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Table 2. Grouping Public Perceptions on Instagram Related to ChatGPT

Public Perception	Note
Positive Affirmation	Posts with content that explicitly acknowledge the existence of ChatGPT to be implemented in Education
Attention to the potential	Posts that carefully attempt to analyze the potential and threats of ChatGPT for the world of education
Negative Affirmation	Posts that explicitly describe that ChatGPT is a threat and needs to be rejected

Based on the 10 analyzed posts, three types of public perceptions were identified. The first is positive affirmation, which was represented in four posts. The second is attention towards the potential of ChatGPT, which was found in five posts. Finally, there was only one post that provided negative affirmation. It is evident that the strongest discourse is focused on the potential of ChatGPT. This indicates that the public is still waiting and carefully observing the further development of ChatGPT before making a decision on whether to accept or reject its implementation in the world of education. Furthermore, only one post provided negative affirmation, indicating that only a small number of Instagram users have expressed a clear rejection of the use of ChatGPT in education. Overall, these perceptions suggest that the public is open to exploring the potential benefits of ChatGPT in education, but also mindful of the potential risks and limitations. Therefore, it is important for stakeholders to carefully consider

and address these concerns in order to foster greater acceptance and implementation of ChatGPT in education.

CONCLUSION

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