Proceedings of ICADSS 2026 Symposium: Contemporary Visual Arts, AI Creativity, and Interactive Media: Theory and Practice
DOI: 10.54254/2753-7064/2026.BJ38245

Artificial Intelligence Use Cognitive Dependence and User Decision Making

Puihin Sun

Tsinglan School, Dongguan, China
Jayden.Sun_27@tsinglan.org

Abstract. Generative artificial intelligence (AI) tools have rapidly become popular in the daily lives of users to assist them in finishing tasks; they are suitable for a range of situations, including studies, work, medical treatment, living and daily routines. The rise of AI usage carries both advantages and disadvantages to users' mental development; this includes influences on thinking abilities, creativity, mindset, and stress. This essay will review previous studies on the creation of trust and reliance in AI by humans, how AI handle complex tasks, and users' methods for delegating their tasks to AI models. Then, it will mention the reasons people prefer to use AI models rather than other tools for assistance, describe the significant influences on users' mental health from continuously seeking the help of AI tools, and analyse the impact of various factors on users according to the diversity of their usage methods and the differences in users' attitudes.

Keywords: Artificial Intelligence, Cognitive dependence, Task delegation

1. Introduction

This study focuses on the use of artificial intelligence (AI) in assisting human thinking tasks, as AI becomes widespread and readily available, people will rely on it to solve many aspects of their lives. The demand for AI is growing in various scenarios, including learning, daily life, and work. This is due to the creativity of AI models, supported by huge databases, allows them to generate unique output that replicates certain human skills. These processes operate quickly, which is not achievable by humans, and the generated content is high quality in many circumstances. On the one hand, the cheapness and convenience of general AI models make them an affordable tool to assist users in finishing tasks. On the other hand, AI tools contain a large database, which is effective at generating detailed outputs that are content-supported. This makes AI a common choice for people to delegate some tasks when they seek help with their tasks.

This research is of great significance; this study mainly unfolds from the influence of task instances on their own and, afterwards, from collaborating with AI by users, and how the cooperation between AI and humans changes the methods of knowledge gain of humans [1]. This is due to the aid of AI models in improving their performance, users may become lazy as the cognitive effort required in tasks is reduced [2]. Also, this study indicate the influence on users' thinking and problem-solving skills.

© 2026 The Authors. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).

DOI: 10.54254/2753-7064/2026.BJ38245

It uses literature analysis to search for and read relevant materials and literature. The advantage of this method is that it can effectively analyse the complete influence in individuals by AI modles from previous reasearch, which is conducive to the research process; the ultimate research goal of this study is to analyse the formation of cognitive dependence in generative AI tools by the users and the affect in individuals mental attitute and working abilities.

2. Literature review

Aisyah, Poppy Dwi Yulianti, Suci Yandhini, and Adek Dwi Putri Sari researched the potential benefits for students using AI tool, this include increased analytical and critical thinking, learning abilities in collaboration with smart machines, improve creativity and innovation, and more resposible for their learning in the article "The Influence Of AI on Students' Mind Patterns". They point out that the use of AI can create a learning environment that is more modern and dynamic for students, but this requires collaborative efforts between students, educators, and AI tools. They also mentioned the need to remain critical when using AI models in order to maintain students' responsibility for the output of AI.

However, the content on the potential drawbacks when students fail to use AI tools correctly was limited. This paper will start from the usage methods of students in generative AI tools and conduct research on the positive and negative influence on users' thinking abilities, creativity, and stress levels to fill the existing research gaps [3].

Additionally, in the article "Generative Artificial Intelligence Reliance and Executive Function Attenuation: Behavioral Evidence of Cognitive Offload in High-Use Adults", Sarah Baldeo underscores that users' confidence in tasks is not directly affected by the usage of AI tools, but is influenced by how users interact with the generative AI output. Participants who actively revise the output of AI and make adjustments can maintain a strong sense of authorship and oversight in the usage of AI models. This contributed to changes in users' confidence and the results of their tasks, as users' confidence in the output is influenced by the use of generative AI tools.

However, the research on how confidence affects the diverse abilities of users in solving creativity tasks is incomplete. This paper will examine the effect of generative AI tool usage on users' confidence in solving tasks, and the further influence on users' abilities and mindset in finishing the tasks [4].

3. Background

In reality, individuals cannot complete all the tasks alone, so they need to delegate some tasks to others. This support from others is vulnerable because of the possibility of failing to accomplish the task entrusted to them. However, people are still willing to trust others because the likelihood of this happening is low, and their need for help is more urgent [5]. This phenomenon represents the reasons people choose AI models to assist them in deal tasks, because AI can act similarly to humans when delegating some tasks to them and the possibility of failing to finish does not exist. AI has the ability to automatically and autonomously generate solutions. Therefore, it is considered a potentially reliable partner to whom tasks can be delegated [5]. This leads to more people being willing to seek support from an AI model instead of real people helping them.

In addition, as AI literacy of users increases, people prefer to use AI tools more frequently because they can create content that is accurate and relevant to their needs. This continued trust in AI increases dependence and hampers the development of independent skills [1]. The use of AI can help people reduce their effort in innovative thinking, creativity, and critical analysis, which may

DOI: 10.54254/2753-7064/2026.BJ38245

mean many people have limited development in these areas. This means the use of AI can reduce the effort to develop various skills to complete tasks and have a better quality of their output with AI.

Moreover, many users will conduct a initial decisions before the use AI to asiist their taks. Sometimes the final result are wrong, which may due to human is initially incorrect, so the usage of AI are leading to a failling sue to misleading to generative AI model by users. However, some of the failing are due to incorrect AI advice, since it is not completely reliable in usage. However, the confidence after receiving AI advice change make them prefer to use the incorrect outpuut after cooperation with genrative AI tools [6].

Furthermore, authors who use AI to generate content may not be responsible for the content provided by AI, because they may not have confirmed whether AI expressed its own opinion or whether it uses the opinions and information they provided accurately. This may be due to the author's lack of fact-verification skills, making it impossible for them to accurately utilise AI to analyse their opinion [7]. This indicates AI model users may lack responsibility for the reliability of AI-generated content and use it in their tasks.

4. Case studies

4.1. Support of AI in professional knowledge work

According to a study by Sarah Baldeo from ID Quotient Advisory Group, Hendon, London, United Kingdom. They studied how users of AI tools use AI to assist in completing tasks.

1,923 adults who consistently use AI for complex tasks participated in the study, and they were all from Canada or the United States. Participants were asked to complete a set of tasks containing 10 different assignments that simulate professional knowledge work. They were allowed to interact with AI to receive support in completing all the tasks, and they had the freedom to decide their prompt content and the AI model system they chose.

After each task, participants were asked to complete a self-report on their reliance on AI during tasks. Also, a behavioural interaction record captured the dependence, decision duration, number of edits and editing activities.

According to the results, participants mostly defined themselves as moderately high in AI tool use. Additionally, the average prompt for tasks was 4.2, but the number of modified AI outputs was less frequent. This indicates that users heavily rely on AI models when dealing with knowledge work, and they commonly trust the output of AI. Additionally, participants who lack confidence in their independent ability to solve problems are more reliant on and trust AI, as they rarely modify AI responses. Moreover, when solving tasks that contain more uncertainty and vague messages, they will rely more on AI tools. This shows the reliance on AI models when users feel unconfident in solving the tasks [5].

4.2. Experience of confidence in AI suggestions

According to research by the human-computer interaction research group from the University of Basel, how AI provides information affects users' decisions. 798 participants finished a survey on Amazon Mechanical Turk. They were asked to predict the sublease price of six different apartments according to their features and facilities. Then, an algorithm introduced as AI provided a recommended price for the apartments for participants to reference. The probability of successfully subleasing the apartments rises if participants adjust their price lower than the recommended price.

DOI: 10.54254/2753-7064/2026.BJ38245

AI became more persuasive by claiming that the recommended prices are based on price statistics from the state capital.

According to the results, 70% of participants adjusted their price after receiving the AI's recommended price, and their confidence in it also increased. Also, participants are more likely to accept suggestions from AI to decrease their price rather than increase the price, because they are more worried about being unable to sublease than earning more profit according to the AI-recommended price [8].

5. Discussion

5.1. Change in thinking/mindset

The main influence of AI use on users' thinking is independence. Independent skills decrease when users prefer to use an AI model to assist them in finishing tasks when they face challenges, as the data base of AI model conduct confidence to users on it's reliability. Also, users trust AI responses more when they face a challenge that they lack the responsibility to solve, as they will rely on the output of AI and use it to solve the assignments.

However, this is influenced by the way users interact with AI models. The reliance on AI can be reduced by guiding users to limit the use of AI tools, continuously verify the source and maintain a critical mindset. This develops the ability to evaluate, argue, and exercise autonomy in users [1]. This means that when users are not simply using AI tools to generate AI, they use it to process large amounts of data and use it to conduct further learning and study with the summarisation by AI. These users are able to develop their analytical and critical thinking, as they take AI tools as an aid to reduce effort in analysing datasets for the tasks, but not directly generate the output for the test [3].

5.2. Change in creativity

One significant characteristic of generative AI is to conduct creative output in cooperation with users. The correctness of output is difficult to define in many creativity tasks, so this leads to the requirement of co-creating content with users. The final high-quality output requires multiple operations with the AI model to continuously improve [9]. This leads to a consequence of AI users being lazy or lacking awareness to conduct multiple rounds of cooperation to generate the final output. This is because they may be satisfied with the initial output by AI and use it. This results in a loss of creativity among AI model users, as their curiosity about the quality and areas for improvement of the result is missed, and their problem-solving abilities in creative tasks drop.

The relative importance of creativity influenced by generative AI depends on the ability to collaborate with an AI model during creativity tasks; remaining continuously focused on improving the output quality of artificial intelligence by avoiding creative outsourcing can avoid the decline in creativity during AI usage.

5.3. Change in stress

In the modern world, people face challenges in a large number of tasks and competition in both work and study. For instance, a high-pressure environment in school forces students to conserve learning processes, relying more on AI tools to reduce the effort and time they invest in study. This is because in most schools, students are score-driven, so they focus more on the scores they receive

DOI: 10.54254/2753-7064/2026.BJ38245

rather than what they actually learn [10]. This leads to situations where users choose AI tools to help them complete tasks; therefore, they can complete all the tasks on time and with quality.

On balance, the evidence suggests that irresponsible usage of AI models rises due to pressure from external factors. This results in people choosing generative AI to complete tasks to reduce stress. Consequently, in the long term, AI users will not be driven by the stress from tasks to develop their skills to solve creative tasks.

6. Discussion

Based on existing research, this study examines the causes and processes underlying users' cognitive dependence on generative AI models. Reliance on AI tools is conceptualized in terms of perceived trustworthiness, particularly the belief that their outputs are supported by large-scale datasets, which may increase users' confidence in relying on these outputs. Also, users are more likely to accept suggestions from AI models in order to make a safer choice, as they are less willing to bear the risks. Moreover, a lack of relevant skills, including innovative thinking, creativity, and critical analysis, means they need to ask for assistance from AI models to finish these creative tasks.

The influence of cognitive dependence on AI models varies according to the methods users make use of the AI model. Overall, while both positive and negative effects exist in applications of AI, greater weight must be given to the disadvantages of AI. This is because users commonly lack the abilities and qualities to correctly use AI as a tool that boosts their study process, and more users rely on emerging results that only contain the creativity and thinking abilities of artificial intelligence. These demands on generative AI are rising, created by the heavy tasks given to individuals in both schools and workplaces, and AI usage is a more efficient and convenient mode to solve this challenge.

7. Conclusion

Overall, this study summarises previous studies, analyses the formation of cognitive dependence on generative AI models, and the potential influence contained in different ways of usage. This study provides many valuable references for future research in this direction, mainly influencing changes in users' attitudes toward generative AI models, independent thinking and creative abilities, and the stress they experience from the external environment in task solving after the popular and convenient access to AI models by the public. Future research should focus more on the effectiveness of methods to use AI tools as helpers that provide positive growth in users' thinking and problem-solving abilities rather than delivering all the tasks and duties to the AI model, and explore this direction in greater depth.

References

[1] Zhong, B. C., & Lin, X. H. (2026). The "revolution of learning" in the era of generative artificial intelligence: Generative self-regulated learning. *Journal of East China Normal University (Educational Sciences), 44*(1), 44.

[2] Castro, R. A. G., Aste, W. M. B., Quezada, J. L. M., & Huanacuni, L. E. A. (2025). Artificial intelligence dependence in academic tasks: Design and validation of the SAID questionnaire. *Online Journal of Communication and Media Technologies, 15*(4), e202529.

[3] Yulianti, P. D., Yandhini, S., Sari, A. D. P., Herawani, I., & Oktarini, I. (2024). The influence of AI on students' mind patterns. *BICC Proceedings, 2*, 183-186.

[4] Baldeo, S. (2026). Generative artificial intelligence reliance and executive function attenuation: Behavioral evidence of cognitive offload in high-use adults. *Technology, Mind, and Behavior*.

[5] Blanco, S. (2025). Human trust in AI: A relationship beyond reliance. *AI and Ethics, 5*(4), 4167-4180.

DOI: 10.54254/2753-7064/2026.BJ38245

[6] Schemmer, M., Kuehl, N., Benz, C., Bartos, A., & Satzger, G. (2023). Appropriate reliance on AI advice: Conceptualization and the effect of explanations. In *Proceedings of the 28th International Conference on Intelligent User Interfaces* (pp. 410–422).
[7] Sahebi, S., & Formosa, P. (2025). The AI-mediated communication dilemma: Epistemic trust, social media, and the challenge of generative artificial intelligence. *Synthese, 205*(3), 128.
[8] Scharowski, N., Perrig, S. A., Svab, M., Opwis, K., & Brühlmann, F. (2023). Exploring the effects of human-centered AI explanations on trust and reliance. *Frontiers in Computer Science, 5*, 1151150.
[9] Eckhardt, S., Kühl, N., Dolata, M., & Schwabe, G. (2025). A survey of AI reliance. *ACM Computing Surveys, 58*(6), 1–37.
[10] Yang, Z., Deng, H., & Jiang, N. (2025). The impact mechanism of artificial intelligence dependence on college students' innovation capability: An empirical study from China. *Frontiers in Psychology, 16*, 1732837.