Mitigating University Students' Reliance on ChatGPT

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Abstract. ChatGPT, an AI-powered chatbot, is equipped with advanced natural language processing capabilities. While ChatGPT has introduced innovative and convenient learning methods for university students, it has also led to a dependency that manifests in issues like reliance on AI for homework and instances of plagiarism. To address this issue, this paper explores how to mitigate the impact of ChatGPT on students' learning abilities. It proposes a series of strategies from multiple perspectives including fostering students' autonomous learning capabilities, critical thinking, deep learning, teacher guidance, creativity, and information literacy skills. These strategies aim to help students use ChatGPT appropriately and reduce their dependency on the tool.

Keywords: Autonomous Learning Ability; Critical Thinking; Information Literacy; ChatGPT; Creativity Development.

1   Introduction

Artificial Intelligence has greatly revolutionized education in many aspects. Today, AI-enabled language models, such as ChatGPT, are gaining popularity due to their characteristics and benefits. ChatGPT's presence is on the rise, with continuous advancements in artificial intelligence technologies and expanding application scenarios. It is expected to further broaden its deployment in future contexts. ChatGPT has been widely adopted internationally, with numerous high-tech companies investing in its research and development. In China, the government supports the digital transformation of education, where ChatGPT, as a large language model, fits perfectly due to its foundation in natural language processing. The model within ChatGPT can perform probabilistic statistics on word sequence distributions, allowing for the construction of new textual models. The market prospects for ChatGPT are vast, with a diversified business model. Currently, ChatGPT is used extensively across some main areas[9].

In terms of language, ChatGPT can perform translation tasks. It proves more useful than traditional translators, supporting a majority of languages. Even within sentences that incorporate two or more languages, ChatGPT can facilitate translation. University students can consult ChatGPT for inquiries related to foreign languages, such as grammar, which can significantly aid their learning.

From a writing perspective, ChatGPT can generate articles based on keywords or perform re-creation based on the user's input background and data, producing new

textual content. Users can select the desired type of writing, such as reflections, speeches, explanatory texts, novels, or news reports. Unlike other AI writing tools, ChatGPT can refine its generated text, enhancing sentence flow and expanding the word count. It can also act as a critic; users can upload their written content for ChatGPT to review and provide suggestions for improvement.

From the aspect of answering, ChatGPT can play the role of life, users can treat ChatGPT as a friend, and chat with it, for example, you can talk to ChatGPT about the bad things in life, ChatGPT can simulate human conversation, put forward the corresponding suggestions, which is conducive to easing the user's mood, and give the user psychological comfort. you can also let ChatGPT give advice on their own life, ChatGPT can be based on the analysis of big data to give the user the most reasonable plan. for example: users with a cold or a fever, you can ask ChatGPT what medicine you should take, ChatGPT will quickly give the symptoms of the fever, and the different symptoms of different corresponding medicine.

In terms of function, in fact, in other professional fields, ChatGPT can also come in handy, now similar to the "flush" to see the stock buy online software, have installed ai to see the stock market fluctuations, ai analysis of the stock. ai customers can be based on ai stock market quotes provided by ai analysis of the stock market trend, to choose their own to buy. ChatGPT promising future, the application of the scene will only become more and more, for example, intelligent education, intelligent medical care, intelligent financial, and so on.

2   Negative Impacts on University Students

2.1   Limiting the Depth and Breadth of Learning

Depth of learning refers to a deeper understanding and analysis of knowledge, not just superficial acquaintance; breadth of learning refers to the range of knowledge recognized. Because both the depth and breadth of learning significantly affect university students, deep learning enables students to understand some knowledge more profoundly and thoroughly, while breadth allows students to have a wider range of knowledge. For example, ChatGPT has a certain negative impact on the depth and breadth of students' learning. ChatGPT significantly impacts the digitalized learning process as many students prefer to use ChatGPT to handle tasks[8]. Excessive reliance on ChatGPT, using it to cheat or copy answers to complete assignments, only aims for superficially correct answers without a deep understanding of the knowledge, thus failing to expand their knowledge base. Consequently, the potential for stimulating and utilizing the depth and breadth of students' learning is diminished.

2.2   Restricting the Thinking and Cognition

Thinking is the process of understanding objective things, and cognition involves the brain's high-speed operation. Critical thinking is a crucial aspect that every university student must develop and enhance. In terms of thinking and cognition, when students use ChatGPT to write papers or search for answers without critically analyzing the

authenticity and objectivity of the information provided, they incorporate these unchecked details into their papers or homework, negatively impacting their cognitive processes. The information provided by ChatGPT may contain errors or inaccuracies, yet critical thinking can enhance students' problem-solving abilities and their assessment of information authenticity. Independent thought is also crucial; without actively thinking about how to solve problems and overly relying on ChatGPT, the solutions obtained may ultimately not truly belong to the students. Thus, ChatGPT significantly negatively affects students' thinking and cognition.

2.3   Weakening the Personal Learning Abilities

It is well known that personal learning ability is an important aspect reflecting a student's academic cultivation. This includes practical skills, communication, creativity, collaboration, imagination, sensory integration, computational skills, etc. In terms of personal learning abilities, excessive and dependent use of artificial intelligence can negatively impact students. For example, if students mimic and copy answers provided by ChatGPT, it significantly limits their innovation and creativity and negatively affects their practical skills since the answers obtained through ChatGPT are not the result of the students' own practical experiences. On the other hand, using ChatGPT long-term for academic problems, without interacting or collaborating with peers or teachers, can also negatively affect students' communication, expression, and cooperation skills. Students should instead cultivate and enhance their personal learning abilities through continuous study, thereby improving their educational cultivation. Thus, ChatGPT also negatively impacts students' personal learning abilities.

3   Strategies about Reducing reliance on AI

3.1   Depth and Breadth of Learning

Establishing Clear Learning Objectives.
    Understanding why one is learning and what they aim to achieve is essential to stimulate motivation, which is vital for promoting autonomous learning. David Ausubel's Achievement Motivation Theory mentions three types of intrinsic motivations: cognitive, self-enhancement, and affiliative drives. Cognitive drive is the desire to understand and master knowledge and solve problems. Self-enhancement drive views achievements as essential for gaining status and self-esteem, whereas affiliative drive is the effort made to gain approval or recognition from others.

Developing a Personalized Study Plan.
    In the digital era, technology is increasingly developing and provides convenience for doing various things, including in terms of learning[5]. Creating a study plan tailored to individual learning goals is a necessary preparation for autonomous learning. The plan should be adaptable to suit personal needs, as overly ambitious or minimal goals can hinder the efficiency of self-directed learning.

Reflecting and Summarizing Learning Outcomes.

Using ChatGPT in education has useful and concerning effects on educational integrity and outcomes. Autonomous learning requires avoiding the trap of complacency that comes with surface-level learning without recognizing errors and omissions. Encouraging students to reflect on and assess their learning process helps them regulate their progress and engage more deeply with the material.

3.2   Critical Thinking and Cognition

Personal Learning Abilities.

Personal learning ability is essential for all university students, encompassing skills such as practical abilities, communication, creativity, collaboration, memory, observation, imagination, sensory integration, computational skills, comprehension, and attention. Each skill plays a crucial role in the personal and comprehensive development of students. If college students rely too much on artificial intelligence, it will lead to the degradation of college students' thinking ability and weaken their personal learning ability[3]. Artificial intelligence decisions and predictions are based on a large amount of data and algorithms, which require a large amount of data for training and learning[1]. As the era of big data progresses, the potential impact of AI on these abilities becomes more significant. For instance, excessive reliance on AI like ChatGPT can lead to cognitive decline and weaken personal learning capacities, potentially leading to psychological dependency on these technologies.

Ethical and Moral Considerations.

While AI enhances the sophistication of political and educational fields, it also presents numerous ethical and moral challenges, such as the erosion of personal agency, emotional detachment, alienation in student development, and risks to personal privacy. Critical thinking enables the evaluation of AI-generated content from ethical and value-based perspectives, encouraging a cautious approach to adopting AI outputs. To reduce the dependence of college students on artificial intelligence and raise awareness of the ethical and moral issues that may arise from artificial intelligence[2].

3.3   Establishing Innovative Thinking

Enhancing Practical Skills.

Practical ability is a key indicator of personal learning capacity, requiring students to continuously engage and reflect during their studies, and accumulate experiences through hands-on activities. For instance, students should participate in various practical projects and activities organized by their institutions, which helps in developing their personal skills beyond theoretical knowledge gained from AI tools like ChatGPT. Recognizing the complexities and importance of ChatGPT usage, teachers and policymakers can keep a balance by leveraging Artificial Intelligence technology to improve practical skills while upholding ethical practices that promote critical thinking, originality, and integrity among students[7].

Fostering Communication and Teamwork.

Communication and teamwork involve the capacity to interact and collaborate effectively with others to achieve common goals. Reducing overreliance on ChatGPT can help maintain and improve these skills. Schools should offer activities that enhance communication and teamwork, encouraging students to engage more actively in discussions and collaborative projects, thus fostering a proactive learning environment. In addition, university teachers can set up the curriculum in the form of group discussions, case studies or project exercises to motivate students to take responsibility and solve problems[4].

Cultivating Creativity.

Creativity involves the ability to think uniquely and innovatively, identifying new problems, methods, and ideas. Maintaining curiosity and challenging oneself in academic pursuits are crucial for developing creativity. Incorporating ChatGPT influenced the students' critical, reflective, and creative thinking skills and their dimensions discernibly[11].Students should critically assess the accuracy and reliability of information provided by AI tools and strive to go beyond merely replicating AI responses. The integration of AI tools such as ChatGPT must be based on solid methodological proposals that integrate their use from a creative and critical perspective that allows learning with the support of these tools and not using them as substitutes for the development of basic student competencies[6].

4   Conclusions

Recent advancements in artificial intelligence (AI) have led to growing interest in understanding its potential applications and implications across various domains[10], and Education is among the most talked about. AI ChatGPT has great potential to change the way students learn by providing adaptive and personal assistance in the learning process. As discussed above, the misuse of ChatGPT by university students can lead to issues such as plagiarism and the inappropriate use of AI tools for assignments and projects, creating a detrimental culture that significantly impacts the integrity of higher education. This paper proposes strategies on two levels to address the issue of 'how to reduce university students' dependency on ChatGPT'. Therefore, reducing students' dependence on ChatGPT requires long-term patience and collaborative efforts from both teachers and students. We firmly believe that by implementing the suggestions outlined above, we can achieve these goals step-by-step.

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