

The Promises and Pitfalls of Using Chat GPT for Self-Determined Learning in Higher Education: An Argumentative Review

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Abstract

The potential of artificial intelligence language models, such as Chat GPT, to support self-determined learning in higher education has garnered increasing attention from educators, researchers, and policymakers. However, the promises and pitfalls of using Chat GPT for self-determined learning remain subject to debate and warrant further exploration. In this argumentative review, we examine the central questions and statements of the problem related to the use of Chat GPT for self-determined learning in higher education. We synthesise and critically evaluate the existing literature on the potential of Chat GPT to support self-directed and self-determined learning and highlight the main challenges and concerns associated with its use. According to our analysis, Chat GPT promises to improve self-determined learning by offering individualised feedback, resources, and assistance to learners that can foster their acquisition of knowledge and skills. However, using Chat GPT in self-determined learning also raises ethical and pragmatic concerns. These include issues about privacy, data security, and algorithmic bias, which could compromise the effectiveness and reliability of Chat GPT-based interventions. We posit that while the potential benefits of Chat GPT for self-determined learning are significant, they must be weighed against its potential drawbacks. As such, the design, implementation, and assessment of Chat GPT-based higher education interventions must be carefully considered. Our results indicate that the advancement of Chat GPT-based interventions for self-determined learning in higher education necessitates a nuanced and multidisciplinary approach that considers the viewpoints of educators, researchers, learners, and other interested stakeholders.

Keywords: Artificial intelligence; Chat GPT; Heutagogy; Higher education; Self-determined learning

1. Introduction

The emergence of Artificial Intelligence (AI) has opened up a range of possibilities for educational research, allowing for the development of personalised and self-directed learning experiences within higher education (Alam, 2021b, 2021a, 2022). AI has been increasingly incorporated into the educational sector, utilising Chat GPT and other intelligent systems to facilitate teaching and learning (Baidoo-Anu & Owusu Ansah, 2023; Mhlanga, 2023; Zhai, 2022). Chat GPT has become particularly popular due to its language processing capabilities and ability to generate human-like responses.

The utilisation of Chat GPT in higher education warrants contemplation about its capacity for advancing self-regulated learning. Self-regulated learning is a student-centred methodology that focuses on individual freedom, decision, and contemplation in the learning procedure (Matsuyama et al., 2019; Michalsky, 2020; Wang, 2021). Self-regulated students take accountability for their learning and proactively search for assets and criticism that can improve their aptitudes and information (Hensley et al., 2022; Öztürk & Çakıroğlu, 2021; Segaran & Hasim, 2021).

While Chat GPT has the potential to support self-determined learning by providing learners with personalised feedback, resources, and support, its use also raises ethical and practical concerns. For instance, using Chat GPT raises privacy, data security, and algorithmic bias issues, which could compromise the effectiveness and reliability of Chat GPT-based interventions.

This paper seeks to synthesise and evaluate the existing literature about the potential of Chat GPT for self-determined learning in higher education, identify the main challenges and concerns associated with its use, and offer recommendations for future research and practice. Given the possible advantages and difficulties associated with deploying Chat GPT for self-determined learning in higher education, it is essential to explore this topic further.

This paper employs an argumentative review approach to achieve these goals, which involves synthesising and evaluating the existing literature to develop a nuanced and balanced perspective. Studies included in this review focus on using Chat GPT for self-determined learning in higher education, are published in academic journals or conference proceedings and are written in English.

The literature review will define key terms such as heutagogy, self-determined learning, Chat GPT, higher education, and artificial intelligence. It will then provide an overview of the existing literature on the potential of Chat GPT for supporting self-determined learning in higher education, including studies on its use for personalised feedback, resources, and assistance.

The literature review will critically evaluate the strengths and limitations of previous research, highlighting the need for a nuanced and interdisciplinary approach to the study of Chat GPT and self-determined learning in higher education. The review will also examine the potential of Chat GPT for supporting self-determined learning in different contexts and populations and highlight the ethical and practical concerns associated with its use. The argumentative review approach will involve synthesising and evaluating the existing literature on the potential of Chat GPT for self-determined learning, highlighting the main challenges and concerns associated with its use, and proposing recommendations for future research and practice.

This investigation will shed light on the potential of Chat GPT to augment self-directed learning in higher education and the difficulties that arise from its implementation. It will emphasise the necessity of creating a multifaceted and interdisciplinary examination of Chat GPT and self-motivated learning and proffer advice for any additional research or application in this domain.

This paper contributes to the already present studies regarding the potential application of artificial intelligence (AI) to support self-directed learning in higher education by critically analysing the advantages and disadvantages of using Chat GPT for this objective. It should interest educators, researchers, policymakers, and other stakeholders investigating AI's potential in advancing self-governed learning in higher education.

The literature on the potential of Chat GPT for supporting self-determined learning in higher education is still relatively new and emerging. However, a growing body of research has begun to explore the potential of Chat GPT for personalised feedback, resources, and assistance, which could facilitate self-determined learning.

Chat GPT is an artificial intelligence language model that can generate human-like responses based on input (Baidoo-Anu & Owusu Ansah, 2023; Pavlik, 2023; Shen et al., 2023). This language model can process natural language and provide personalised responses to learners based on their individual needs and preferences (Chowdhury, 2023; Gilson et al., 2023; Kasneci et al., 2023). However, despite the potential benefits of Chat GPT for supporting self-determined learning, ethical and practical concerns are associated with its use. For instance, the use of Chat GPT raises issues related to data privacy and security and algorithmic bias, which could compromise the effectiveness and reliability of Chat GPT-based interventions (Zhai, 2022). Furthermore, some studies have also reported limitations and challenges associated with using Chat GPT for self-determined learning in higher education. For example, one study found that learners may become overly reliant on Chat GPT for feedback and resources, which could impede their ability to take ownership of their learning (Qadir, 2022).

Empirical research has evidenced the necessity for a multifaceted and interdisciplinary exploration of Chat GPT and self-regulated learning in tertiary education, encompassing the viewpoints of students, instructors, investigators, and other interested parties. Further, the utilisation of Chat GPT for autonomous learning in higher education prompts inquiries concerning innovation in instruction and the potential effect of AI on the education and learning procedure.

In conclusion, although research into the ability of Chat GPT to promote self-directed learning in tertiary education is still in its infancy, the results of past studies suggest that it may offer personalised feedback, resources and assistance that can help to foster self-guided learning. Nevertheless, its application's moral and practical issues necessitate a holistic and interdisciplinary approach to exploring and integrating Chat GPT-based strategies into tertiary education.

Given the potential advantages and drawbacks associated with using Chat GPT for self-directed learning in higher education, further research to investigate this area is warranted. Future research should aim to analyse the potential of Chat GPT in different educational contexts and populations and address the ethical and practical issues related to its use. Additionally, future investigations should evaluate the possible effect of Chat GPT on the instruction and learning process and the role of technology in education more broadly.

2. Methodology

The present study employs an argumentative review and theoretical analysis approach to examine the potential of Chat GPT for supporting self-determined learning in higher education (Elsbach & van Knippenberg, 2020). This methodology involves analysing and synthesising existing literature on the topic, in order to develop a critical understanding of the potential benefits and challenges associated with the use of Chat GPT for self-determined learning (Cooper et al., 2019).

The argumentative review approach is used to evaluate the literature on Chat GPT and self-determined learning critically and identify critical arguments and perspectives. The theoretical analysis approach is used to examine the theoretical underpinnings of Chat GPT and self-determined learning and to develop a conceptual framework for understanding the potential of Chat GPT in this context.

The argumentative review process involves a comprehensive search of academic databases, including Scopus Q1 level and World of Science, to identify relevant articles and books on Chat GPT and self-determined learning in higher education. The search terms used include "Chat GPT", "self-determined learning", "personalised feedback", "AI", "algorithmic bias", "data privacy", "data security", and "higher education".

The articles and books identified were then appraised according to their pertinence, excellence, and contribution to the literature concerning the topic. Only those articles and books judged to be pertinent, of exceptional quality, and contributing to the literature on Chat GPT and self-determined learning in higher education was incorporated into this review.

The theoretical analysis process necessitates a comprehensive evaluation of the theoretical foundations of Chat GPT and self-determined learning, resulting in the formulation of a conceptual framework to comprehend the capability of Chat GPT in this context. Existing theories and models inform this theoretical framework of self-determined learning and theories about artificial intelligence and machine learning.

The research process of argumentative review and theoretical analysis is ongoing and cyclical, with constant refinement and updating of the analysis and synthesis of the literature. This strategy was selected to provide a thorough and analytical assessment of the potential applications of Chat GPT for self-driven learning in higher education and produce a multifaceted and interdisciplinary comprehension of this topic. This technique is suitable for this research question which seeks to develop an astute cognisance of the possible advantages and difficulties associated with using Chat GPT for self-determined learning in higher education.

This research utilises an argumentative review and theoretical analysis approach to assess the feasibility of Chat GPT comprehensively and critically as a tool for self-directed learning in higher education. This methodology is appropriate for the given research question, enabling a multifaceted and interdisciplinary comprehension of the subject matter.

3. Results and Discussion

3.1 Results

The present study aims to provide a critical analysis of the potential of Chat GPT for supporting self-determined learning in higher education. The following paragraphs provide a detailed discussion of the results of the argumentative review and theoretical analysis of the literature.

The literature review reveals the possibility of Chat GPT to furnish learners with tailored feedback and resources that can bolster their autonomous learning (Cotton et al., 2023; Tlili et al., 2023; Zhai, 2023). Chat GPT has the aptitude to produce customised proposals for learning resources, contingent on learners' particular necessities and preferences. This can facilitate learners in recognising and accessing relevant and engaging resources and personalising their learning experience.

However, the literature also highlights the potential challenges of using Chat GPT for self-determined learning in higher education. One key challenge is the issue of data privacy and security (Borji, 2023; Lund & Wang, 2023; Mijwil et al., 2023). Chat GPT relies on collecting and analysing large amounts of data on learners, which raises concerns about the privacy and security of this data. There is also a risk of algorithmic bias, where the algorithms used by Chat GPT may perpetuate existing biases in the data.

Another key finding of the literature review is the importance of considering the perspectives of all stakeholders in the design, implementation, and evaluation of Chat GPT-based interventions for self-determined learning. This includes the perspectives of learners, educators, researchers, and other stakeholders. It is essential to consider these stakeholders' unique needs and perspectives to ensure that Chat GPT-based interventions are effective and ethical.

The theoretical examination of the literature underscores the possibility of Chat GPT fostering self-directed learning in higher education. Chat GPT can amplify learners' self-regulation and self-determination skills by providing them with the necessary tools and resources to take command of their education. This can generate a more involved and inspired learning experience for learners.

The theoretical analysis further indicates that the utilisation of Chat GPT for self-determined learning may be associated with potential obstacles. For instance, using Chat GPT may lead to declining social interaction and collaboration among students, which could be deleterious to their learning process. Moreover, there is a possibility of over-dependence on technology, causing learners to lack critical thinking and imagination.

The literature review has highlighted the necessity of a multifaceted and interdisciplinary approach to developing Chat GPT-based interventions for self-determined learning. This necessitates considering the varied requirements and perspectives of learners from different backgrounds and contexts and recognising the intricate and multifarious nature of self-determined learning. The literature review results also highlight the importance of ethical considerations in developing and implementing Chat GPT-based interventions for self-determined learning. This includes considerations around data privacy and security, algorithmic bias, and the potential impact of Chat GPT on learners' autonomy and agency.

Overall, the results of the argumentative review and theoretical analysis of the literature suggest that Chat GPT has the potential to support self-determined learning in higher education. However, there are also potential challenges associated with using Chat GPT in this context, including data privacy and security issues, algorithmic bias, and the potential impact on social interaction and collaboration among learners.

To adequately resolve these difficulties, an intricate and extensive approach needs to be implemented to create Chat GPT-based strategies for self-guided learning, taking into account the views of all stakeholders involved in developing, implementing, and assessing these tactics. Ethical protocols and regulations must be established to protect learners' data privacy and security when utilising Chat GPT in higher education, as well as that the algorithms employed by Chat GPT are transparent and free from bias.

In conclusion, this study suggests that Chat GPT has the potential to foster self-directed learning in higher education by providing personalised feedback and resources to learners. However, any benefits of Chat GPT must be weighed against potential difficulties and risks, such as data security, algorithmic bias, and the impact on socialisation and collaboration among students.

To ensure the beneficial and responsible application of Chat GPT for self-directed learning in higher education, further investigation should be conducted to evaluate participants' viewpoints and create guidelines and protocols for using Chat GPT in this setting. Further research could evaluate the effectiveness of Chat GPT-based instruction for self-directed learning and investigate the impact of Chat GPT on learners' self-regulation and autonomy skills.

This study underscored the viability of Chat GPT in facilitating self-governed learning in higher education. However, it also highlighted the necessity of exercising caution and adhering to ethical standards while developing and deploying Chat GPT-based interventions. By adopting a multifaceted and multidisciplinary stance, it could be possible to benefit learners in higher education through the utilisation of Chat GPT.

3.2 Discussion

The discussion section of this paper examines the implications, limitations, and potential for future research associated with utilising Chat GPT for self-regulated learning within post-secondary education. The present study's findings suggest that Chat GPT can enhance self-determined learning in higher education. The personalised feedback and resources provided by Chat GPT may help learners to identify their learning needs and goals and to monitor their progress towards these goals. The study also reveals that using Chat GPT for self-determined learning in higher education raises ethical and practical concerns, such as data privacy and security, algorithmic bias, and the impact on social interaction and collaboration among learners.

One of the implications of the study findings is that careful consideration must be given to the design, implementation, and evaluation of Chat GPT-based interventions in higher education. Guidelines and policies should be developed to ensure the ethical and practical use of Chat GPT for self-determined learning. Another implication of the study is that a nuanced and interdisciplinary approach is necessary for developing and implementing Chat GPT-based interventions. Educators, researchers, learners, and other stakeholders should be involved in developing guidelines and policies and evaluating the effectiveness and ethical implications of Chat GPT-based interventions.

This research underlines the necessity of confronting the potential issues and dangers correlated with using Chat GPT for self-guided learning. Strategies such as data safety protocols, algorithmic clarity, and encouraging social interaction and teamwork among learners should be created and implemented to reduce these hazards.

This study's limitation is that it is based on a theoretical analysis of the literature rather than empirical research. Subsequent studies should investigate the efficacy of Chat GPT-based interventions for self-regulated learning in the context of higher education and should consider the ethical and practical implications of using Chat GPT from the perspective of stakeholders.

Another limitation of the study is that it does not address the potential impact of Chat GPT on learners' motivation and engagement. Future research could investigate the impact of Chat GPT on learners' motivation and engagement and explore the factors that influence the effectiveness of Chat GPT-based interventions in promoting self-determined learning.

The study findings also suggest that developing and implementing Chat GPT-based interventions for self-determined learning in higher education requires a multidisciplinary approach. Educators, researchers, and technology experts must collaborate to develop effective and ethical Chat GPT-based interventions. Moreover, the study underscores the importance of developing learners' digital literacy and critical thinking skills to ensure their effective and ethical use of Chat GPT for self-determined learning. Educators should provide learners with the necessary guidance and support to develop these skills.

The study findings also raise questions about educators' role in using Chat GPT for self-determined learning. Educators may need to shift from a traditional role of knowledge transmission to a more facilitative role of guiding learners in using Chat GPT for self-determined learning. The study findings also suggest that using Chat GPT for self-determined learning may have implications for assessing learning outcomes. Future research could investigate the impact of Chat GPT on the assessment of learning outcomes and explore the development of new assessment methods and tools that consider the use of Chat GPT for self-determined learning.

Another implication of the study is that the use of Chat GPT for self-determined learning may have implications for the design of learning environments. Learning environments should be designed to facilitate the practical and ethical use of Chat GPT, and to promote social interaction and collaboration among learners.

The study results indicate that Chat GPT can facilitate self-directed learning, which necessitates a revision in traditional educational technology approaches. Technology should be seen as an aid to promote learning, and educators must focus on fostering learners' critical thinking abilities, metacognitive processes, and self-regulated learning techniques.

4. Conclusion

The present study provides valuable insight into the potential of Chat GPT for self-determined learning in higher education. The study findings suggest that Chat GPT has the potential to enhance self-determined learning by providing learners with personalised feedback, resources, and support. However, using Chat GPT for self-determined learning also raises ethical and practical concerns that must be carefully considered.

While the study provides a significant contribution to the literature on Chat GPT and self-determined learning, there are some limitations to the study that should be acknowledged. For example, the study did not involve interviews or questionnaires with learners or educators, which could have provided a deeper understanding of their perspectives and experiences.

Future research could build upon the present study by exploring the perspectives of learners and educators on the use of Chat GPT for self-determined learning. Additionally, the research could explore the potential impact of Chat GPT on learners' motivation and engagement, and investigate ways to address the challenges and limitations associated with its use.

The study findings have practical implications for educators and policymakers. Educators can use the findings to inform their teaching strategies and consider the ethical implications of using Chat GPT in their classrooms. Policymakers can use the findings to develop policies and guidelines that ensure the ethical and practical use of Chat GPT in higher education.

In conclusion, the study highlights the potential of Chat GPT for self-determined learning in higher education and the need for careful consideration of its ethical and practical implications. As educators and policymakers continue to explore the potential of Chat GPT, it is essential to prioritise the development of learners' critical thinking skills, metacognition, and self-regulated learning strategies.

This study adds to the ongoing dialogue concerning the role of technology in higher education. It offers a robust understanding of the potential of Chat GPT as a way to boost self-directed learning. Therefore, there is a requirement for further research and utilisation of Chat GPT-based interventions in higher education to guarantee that learners have the abilities and strategies required to succeed in the ever-changing digital atmosphere of higher education.

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