

## Artificial Intelligence as a Catalyst and Constraint for Critical Thinking Development: Examining Perceptions, Benefits, and Limitations among Social Work Students



Abbas Ahmed <sup>a</sup> Aatika Abbas <sup>b</sup> Imran Haider <sup>c</sup>

**Abstract:** *Artificial Intelligence (AI) has revolutionized higher education by affecting student access to information, knowledge building, and learning activities. Although critical thinking was no longer a basic requirement in academic learning and professional practice, it was still a core component of social work education where ethical judgments, reflection and evidence-based decision making had been crucially important. While personalised learning, feedback and reflective practice had been possible with the use of AI tools like ChatGPT and Grammarly, questions about academic integrity, dependency, privacy, and independent thinking have persisted. The link between Artificial Intelligence and critical thinking had been examined from the social work higher education students' viewpoint. This specific qualitative case study design had been used in analyzing the experiences of first year Master of Social Work students at the Excelsia University College. Five students who had experience of using AI applications had been involved in semi-structured interviews and data had been analysed using thematic analysis in the way proposed by Braun and Clarke. The results had shown that both students and instructors have perceived AI as a helpful learning tool, which improved learning efficiency, academic writing, idea organisation and reflective thinking. But challenges around AI dependency, creativity, accuracy, bias, academic integrity had also been raised by participants. The study had highlighted the importance of responsible AI literacy frameworks to ensure ethical technology use and maintain the human element of reasoning and professional judgment.*

**Keywords:** Artificial Intelligence, Critical Thinking, Higher Education, Social Work Education, ChatGPT, Student Perceptions, Generative AI

### Introduction

Effective learning and achievement in today's technology-laden academic world rely on critical thinking skills. It's used in higher education environments to help interpret complex information, evaluate evidence and form reasonable judgments (Hodgson et al., 2022; Goldkind, 2021). Such skills are of paramount importance, especially for young people training to become social workers, for their professional involvement demands careful assessment of evidence, the ability to comprehend differing viewpoints, respect different value systems and to make informed judgements and decisions that will benefit individuals and communities. New opportunities have arisen to support students' learning through the use of Educational Technologies (ET) based on Artificial Intelligence (AI) such as ChatGPT, Grammarly, and Adaptive Learning Technologies (ALT). These technologies allow for immediate feedback, concept clarification and reflection, hence could foster reflective academic and professional practices (Kamoun et al., 2023; Al Rantisi et al., 2024). Overreliance on AI, however, could present a challenge by stifling individual thought, suppressing creativity, and impacting students' ability to immerse themselves in the learning process. In addition, issues surrounding data privacy, academic integrity, and technological access and expertise remain important considerations (Formosa, 2021; James et al., 2024).

<sup>a</sup> Master of Social Work, Excelsia University College, Sydney, Australia.

<sup>b</sup> M.Phil. IR, Department of International Relation, University of Sargodha, Sargodha, Punjab, Pakistan.

<sup>c</sup> Secondary School Teacher, School Education Department, Punjab, Pakistan.

Hence, this study explored social work students' perceptions of the role of critical thinking in their learning experiences at Excelsia University College and the benefits and limitations of implementing Artificial Intelligence tools in education. The study answered these aspects with the below-listed research questions:

1. What is the perception of students of Excelsia University College on critical thinking with respect to their academic practice?
2. What benefits do they see in developing critical thinking?
3. What are potential drawbacks and limitations when they use AI to support academic learning?

Answers to these questions help the study contribute to the new field of Artificial Intelligence in Higher Education, to elucidate how digital technologies can be used in social work education.

## Literature Review

Today, with the advent of Artificial Intelligence (AI), it has ushered in a new era in the field of Higher Education, impacting the pedagogies of teaching and learning processes, assessment and production of knowledge. This is the definition of critical thinking: examine and question data and resources to develop personal judgments on information consumed, an important trait for teachers, and one that AI is deeply involved in. The advent of generations of AI tools (e.g., ChatGPT) and AI-enhanced learning apps comes with new opportunities and potential challenges for fostering analytical capabilities in students and issues about academic integrity, independence, and AI algorithms. AI in education is not just technology and tools; it's a catalyst for revolutionizing access to information, argument development, processing and absorption of knowledge in higher education. The literature has more complex discussions on the relationship between AI and critical thinking, such as using AI to support personalized learning, feedback and reflective practice; and how AI can result in reading without critical thinking. In other areas such as social work education, moral implications and human judgment and reflective decision making have had an impact. Given this context, the literature review to follow (in the next section) will emphasize the dynamic nature of thinking, the thinking process and the use of AI tools in higher education and the implications and opportunities of using AI tools for meaningful and ethical learning.

## Critical Thinking and AI in Higher Education

This section delves into the evolving field of Artificial Intelligence (AI) and its implications on educating and developing critical thinking in higher education. It explores the latest research on the potential impact of the new tools of generative AI like ChatGPT on information analysis and reflective thinking, as well as knowledge-building skills of students. The focus is on how AI can enhance reflective learning opportunities and concerns about fostering students' independence, ethical use of AI, and academic integrity. Clear from the work of Darwin et al. (2024) that the use of the notion of critical thinking in tertiary education is in the process of change, as AI technologies are becoming increasingly ubiquitous. Although these systems can help students develop their research on an idea, examine information, and think outside the box, they can also foster negative changes in critical thinking if students are easily persuaded by the information produced by artificial intelligence.

In the traditional context, critical thinking is associated with challenging assumptions, examining evidence and making reasoned decisions. With the advent of generative AI, this concept has opened up to include the ability to critically analyze, validate, and draw inferences from AI-generated output. The question at hand is not if but how AI can be integrated into the educational landscape to facilitate responsible, thoughtful, and enriching learning experiences, as Darwin et al. (2024) pointed out. This is particularly important in education for social work, where human judgment and reasoning about ethics and context are key to professional practice. Students understand the potential benefits of AI tools, but they also stress the need to use them transparently, responsibly, and in a collaborative way. This is in line with the general conflict between technologization and ethical pedagogical practice (Asakura et al., 2020). The double-edged sword of AI is that it can make knowledge more accessible and enable new ways of cognitive engagement, but can

also promote passive learning and reduced critical inquiry if not reflected on and supervised (Kamoun et al., 2024).

### **Role of Artificial Intelligence in Supporting Critical Thinking**

This section examines the available literature on the possible benefits of the use of Artificial Intelligence (AI) in Higher Education. In the context of higher education, generative AI tools such as ChatGPT and Grammarly can be employed to support teachers and students in learning more efficiently by offering personalized assistance, enhancing feedback, fostering reflection, and facilitating academic writing development. In higher education, generative AI can support teachers and students with personalised assistance, better feedback, reflection, and the development of academic writing skills, thereby supporting more efficient learning processes. These technologies can aid the structuring of ideas, the development of arguments and the enhancement of analytical skills essential to critical thinking if they are used wisely.

Darwin et al. (2024) also list some of the educational benefits of AI integration: Students were more confident and self-efficacious, especially in contexts where English wasn't the first language. Participants saw AI tools as learning partners to give immediate explanations and instructions before reaching out to instructors. Likewise, studies conducted in Palestine show that AI tools can be used to further improve the quality and timeliness of feedback, as well as provide more personalized learning experiences, for social work educators (Al Rantisi et al., 2024).

Kamoun et al. (2024) point out that AI systems can help cultivate organized thinking processes within the learning environment by showing and enabling logical thinking frameworks for learners' analytical writing. Social workers, especially, are students who are taught theories, make decisions regarding ethics, and consider themselves in their practice; AI can be a useful instrument to enhance reflective learning in social work. Goldkind (2021) suggests that when learners are encouraged to critically evaluate information generated by AI instead of taking it on faith, this can help reinforce professional values as learners responsibly interact with technology. AI's role in education is, however, highly reliant on proper academic guidance, digital literacy, and critical thinking. If students do not have these bases, they can grow to be dependent on automated systems. Thus, the potential of AI in education is best realized when it helps students develop metacognitive skills, allowing them to self-monitor, self-evaluate, and self-regulate their learning processes (Darwin et al., 2024).

### **Drawbacks and Practical Limitations**

This part discusses the difficulties and limitations of integrating Artificial Intelligence (AI) into education. While AI has the potential to revolutionize the learning landscape, there are also relevant questions regarding academic honesty, data privacy, algorithmic bias, and overreliance on AI tools by students. Furthermore, issues of access to technology, digital literacy, and institutional capacity could hinder the implementation of AI-powered learning tools. Darwin et al. (2024) found that students were concerned with the originality and reliability of AI-generated content, and were unsure if the use of AI-generated tools could lead to unintentionally breaching academic integrity norms. Students also pointed to a concern about balancing the use of AI as a learning tool with the use of technology for students to do their work for them. Likewise, Fleckenstein et al. (2023) reported that teachers and schools often fail to accurately identify AI-generated work, posing challenges for developing strategies to preserve the authenticity of AI assessment.

A number of previous studies have also highlighted algorithmic bias, accountability and the shortcomings of algorithm-based decision support systems (Formosa, 2021; James et al., 2024). The ethical, empathetic, interpersonal, and professional judgement aspects of practice are important in social work education, and these issues are especially relevant in that context. Overreliance on the responses generated by AI could potentially undermine opportunities for students to learn to think independently and to use a human approach to problem-solving. So, AI should be seen as a tool to enhance learning and education, not a

substitute for the real, relevant and thoughtful engagement with others and professional responsibilities (Hodgson et al., 2022).

Overall, the literature on the transformative potential and potential risks of the adoption of AI in education is balanced. While AI has the potential to support critical thinking by accessing information, offering structured feedback, and providing enhanced learning support, maintaining fairness, creativity, authenticity, and learner autonomy in AI's role within education is important. The concept of integrating AI should be to augment the cognition of human beings and NOT to depress the value of thinking and thinking capacity (Darwin et al., 2024).

### **Theoretical Framework**

This study is based on theory on how to understand the relationship between the use of Artificial Intelligence, critical thinking skills and educational practice. The use of the framework is based on the idea of critical thinking as a complex and multi-faceted skill as outlined by Abrami et al. (2015) and Bezanilla et al. (2019), which includes aspects of analysis, interpretation, making connections, evaluation of evidence and reasoned decision-making.

The Institutional Theory is suggested by DiMaggio and Powell (1983) and offers concepts on the role that an organisation's structure, policy and institutional expectations will have on the usage and incorporation of AI in HE. In this research, the theory is applied in the investigation to get insights about the potential influence of the institutional setting (AI policies and educational approaches of Excelsia University College) on all interactions between students and AI tools and the development of reflective learning styles.

Technology Acceptance Model (TAM) is also added to analyse students' attitudes and behavioural intention with AI-empowered learning technologies. Based on TAM, users' perception of usefulness and ease of use is likely to have a significant impact on technology acceptance (Kamoun et al., 2024). The implications of this model for social work education are that it could be used to explore the meaning and ethical responsibility, privacy and expectations of these types of AI services as they pertain to social work education, such as ChatGPT.

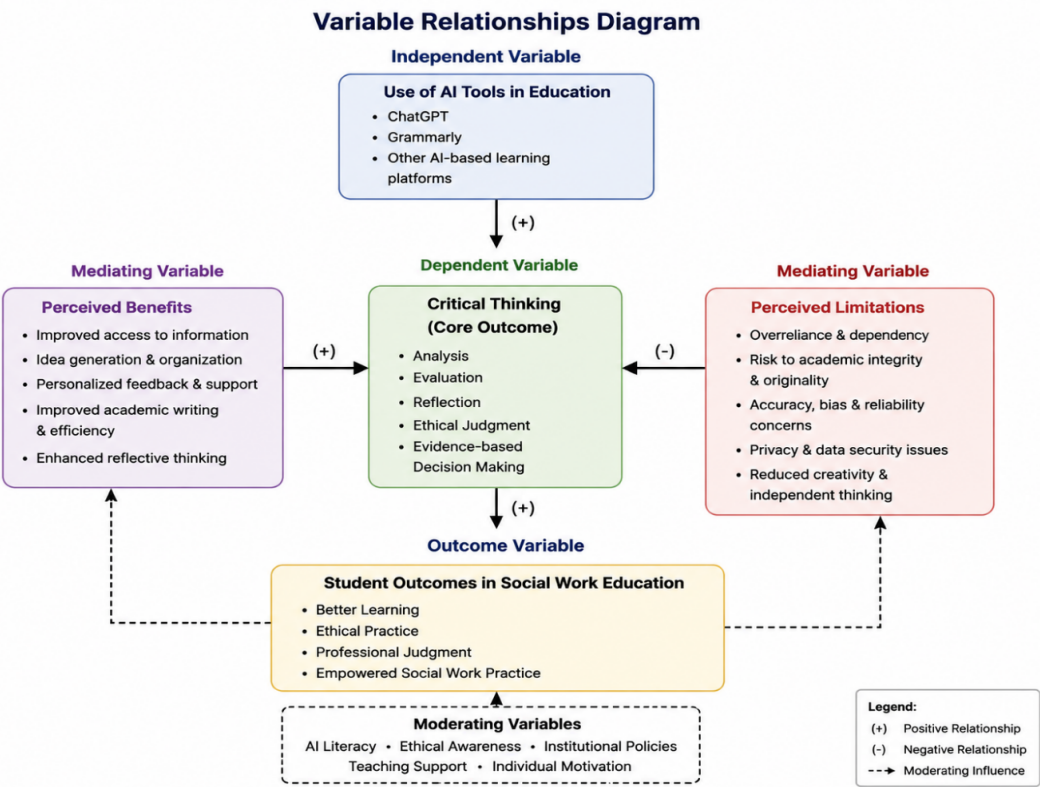
### **Conceptual Framework**

This study's conceptual framework investigated the relationship between the use of artificial intelligence, critical thinking formation and educational outcomes of social work students. Artificial Intelligence (AI) tools such as ChatGPT and grammatical analysis tools such as Grammarly are perceived as the technology enablers that most impact students' learning experiences and critical thinking around information.

The framework acknowledges the facilitative and limiting nature of using AI. The benefits include increased opportunity to know, individual feedback, academic assistance and reflective learning opportunities. Conversely, it's feared that there's a risk of overreliance on AI, algorithmic bias, integrity concerns, and a reduction in the ability to think independently.

In this context, critical thinking is the main result variable, which is defined as the students' capability to assess information, make ethical decisions, analyse complex issues and use knowledge in professional situations. The framework also provides a list of moderating issues, which include issues around AI literacy, ethical awareness, institutional guidelines and teacher support that may influence the impact of the use of AI. Elements can play a large role in shaping their usage of AI as a reflective and autonomous learning tool or reducing their cognitive engagement.

**Figurer 1**  
Conceptual Framework of the Study



**Research Method**

**Research Design**

A qualitative case study design was used to understand the experiences and views about the use of Artificial Intelligence (AI) and its impact on the critical thinking skills of first-year Master of Social Work students at Excelsia University College, and the relationship between the use of AI and the development of critical thinking in their academic studies. A qualitative approach was chosen because it allows for a deeper understanding of participants' perceptions, experiences and interpretations of a complex educational phenomenon. The methodology enabled the researcher to explore students' perceptions of the opportunities, challenges, and implications of AI use in their learning environment, thereby providing a thorough understanding of the students' perspectives on the subject (Darwin et al., 2024).

**Research Participants**

The subject of the study was five first-year Master of Social Work (MSW) students at Excelsia University College. Convenience sampling was used as participants were selected based on their availability, willingness, and previous exposure to educational applications based on AI such as ChatGPT and Grammarly. In order to protect the confidentiality of the participants, each participant was given a pseudonym ranging from P1 – P5. Prior to participation, students were given information about the purpose of the research, that they were participating voluntarily, and that they were free to withdraw at any time without any negative consequences. Informed consent was sought from all interviewees prior to the interviews.

**Research Instrument**

A semi-structured interview method was used, which produced a structured but flexible interview style that would allow students' experiences and perspectives to be examined. This approach facilitated the participants' freely expressing their views, as well as maintaining focus upon the research objectives. The interview

protocol was based on the literature of Darwin et al (2024) and Hodgson et al (2022). The questions had three main themes: (1) Students' understanding and experience with critical thinking; (2) difficulties, constraints, and opportunities associated with positive impacts of the use of AI in education and the development of critical thinking; (3) difficulties, needs and ethical concerns using AI in education.

### **Data Collection Procedure**

The interviews were held onsite at Excelsia University College. The researcher had a quick orientation with each of the interviewees, stated the purpose of this study and asked for their permission to tape the interview as well as maintain the confidentiality of information. The interviews were of about 20 minutes' duration. These discussions began by inquiring about participants' perceptions of critical thinking, their experience using AI tools and their beliefs about the potential of AI to help their students learn. The discussion started with the participants' views on critical thinking, then their experience with how AI tools are used and a reflection on the positive and negative impacts of AI-supported learning. As well, the researcher made notes/in field observations which were brief in nature, to gain extra observations and background info in the interviews. During each interview, all interviews were filled and recorded, after which they were literally transcribed. To find themes and patterns of meaning, the data were then subjected to a thematic analysis following the steps of thematic analysis set forth by Braun and Clarke (2006).

### **Data Analysis**

Thematic analysis describing the framework of Braun and Clarke (2006) was used to analyse the interview data, using a thematic case study approach. The analysis process used a systematic approach to finding patterns in the participants' responses, including identification, organisation and interpretation. The data were familiarized to the researcher by repeatedly reading the interview transcripts. Afterwards, initial codes were created by recognizing significant statements and concepts that were linked with the research questions. Codes were then checked and compared, and general themes were identified to represent the main ideas that were developing based on participants' experiences. These themes gave insights into the students' perceptions of the use of AI and critical thinking, and the impact of it in social work education.

### **Ethical Considerations**

This research received ethical approval from the SWM112 Course Coordinator at Excelsia University College. Ethics approval documentation was read and approved prior to data collection. The purpose of the research, the procedures, measures to ensure confidentiality, rights of the research participants, etc. were all explained to all participants. There was 100% voluntary participation of the participants, and informed consent was obtained before the interviews. Participants were also told that they were free to leave the study at any time. Anonymity and confidentiality were maintained throughout the research, and all the collected data were kept securely and handled ethically.

### **Findings and Results**

The results are presented in three main themes corresponding to the research objectives: (1) students' perception and critical thinking understanding; (2) the perceived contributions of Artificial Intelligence (AI) tools to the development of critical thinking; and (3) the perceived limitations and concerns regarding the use of AI in relation to critical thinking. Quotes from the interviews of participants are included to illustrate and corroborate the themes identified.

Thematic analysis of interviews with MSW students at Excelsia University College used a structured coding and theming of transcripts. The preliminary coding of the interview data helped identify common themes, ideas, and viewpoints on the use of AI and critical thinking. The themes and supporting categories that emerged as a result of this are summarized in Table 1.

**Table 1**  
*Summary of Main Themes and Emerging Subthemes*

| Research Question                                     | Main Theme                                              | Emerging Subthemes                                                                      | Explanation of Main Theme                                                                                                                                                                                            |
|-------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RQ1: How do students perceive critical thinking?      | Students' Views on Critical Thinking                    | Definition of Critical Thinking<br>Importance in Academics<br>Challenges in Application | Students described critical thinking as analysing information, questioning sources, and making fair and ethical judgements. They saw it as essential for effective academic work and decision-making in social work. |
| RQ2: What benefits do students see in using AI tools? | Perceived Benefits of AI in Fostering Critical Thinking | AI as a Learning Aid<br>Innovative Approaches to Problem-Solving                        | Students viewed AI as a supportive learning partner that helps organise ideas, improve efficiency, and strengthen reflection and confidence in academic work.                                                        |
| RQ3: What limitations and ethical concerns exist?     | Perceived Limitations and Drawbacks of AI               | Technological Limitations<br>Pedagogical Shortcomings<br>Dependency Issues              | Students were aware that relying too much on AI can reduce creativity, originality, and ethical awareness.                                                                                                           |

In analyzing the participants' description and usage of critical thinking in their programs for Research Question 1, which explored an understanding of critical thinking for social work students, the researchers focused on how the students described critical thinking and how they applied it. The overall themes which emerged out of this process were: Definition and Understanding of Critical Thinking, Application in Academic Practice, Ethical and Professional Relevance and Institutional Support and Barriers.

In the context of Research Question 2, where the benefits of AI in the development of critical thinking were explored. In this case, the coding was done regarding the perception of students towards AI as a study and reflection tool. The key findings for this section were the following themes: AI as a Learning Aid, Efficiency and Academic Support, Reflective and Critical Support and Confidence and Balanced Use of AI. In the analysis of Research Question 3, which focused on the constraints and ethical problems of AI, the concerns and negative AI experiences of students were examined. Themes generated from this part are: Technological Limitations, Reduced Creativity, dependency and reduced independent thinking, lack of empathy and ethical understanding, and responsible and ethical use of AI.

**Students' Views on Critical Thinking**

The results showed that students of Excelsia University College saw critical thinking as an academic skill that is complex and important, requiring analysis, evaluation, reflection, and well-calculated decision-making. The participants perceived critical thinking as not merely comprehending information, but the thinking practice of examining evidence, challenging presumptions, comparing different viewpoints, and drawing reasoned conclusions. The result showed that students identified the significance of critical thinking in handling a complex academic problem in which there are many different perspectives and uncertainties. This indicated that students saw critical thinking as a stateful cognitive exercise which enables them to think independently and be more engaged with learning. Additionally, the focus on questioning and verification showed that students appreciated the importance of scepticism and reasoning from evidence in the academic

enterprise. In general, this theme emphasized that critical thinking is one of the essential skills in student success and the preparation of professional competence.

### **Perceived Benefits of AI in Fostering Critical Thinking**

**Research Question 2:** What are the perceptions of students in terms of the advantages of AI in enhancing critical thinking?

The results indicated that Artificial Intelligence (AI) is regarded as a supportive learning tool that helped students to think critically, providing easy access to information, assisting with information analysis, and enabling reflective learning. Students perceived AI systems to be useful for organising complex information, explaining challenging concepts, summarizing academic material and helping them construct arguments. The results indicated that AI lessened the cognitive strain of repetitive academic tasks, freeing up more time for pupils to spend on interpreting, evaluating, and better understanding topics. Further, students saw the role of AI as integrating the understanding of different viewpoints and fostering evidence-based reasoning. The findings, however, also showed that the learners were not seen using AI as a substitute for humans but rather as an addition. This interpretation posits that a positive contribution of AI systems to critical thinking development can be observed where a deliberate relationship exists between students and information - information that is generated using an AI system, and to which they interact, evaluate, and reflect.

### **Perceived Limitations and Drawbacks of AI**

**Research Question 3:** What are limitations that students identify in using AI for critical thinking?

The findings showed that there were some issues pertaining to the limitations of using AI in developing critical thinking in students. While students recognized the benefits of AI, there was an awareness that over-dependence on AI technologies may hinder independent thought, creativity, and the critical assessment of information. The results showed issues with bias in algorithms, limited access to a wider range of viewpoints, and a risk of accepting AI-generated information without verifying it. Learners recognised the potential for AI systems to provide misleading or incomplete information, highlighting the importance of human judgement, interpretation and insight. Furthermore, the findings suggested that overdependence on AI could result in a passive learning approach, thereby undermining the students' ability to analyze and evaluate a problem. In this theme, students showed that the responsible use of AI tools is of paramount importance, and that essential thinking skills cannot be replaced by technology.

### **Overarching Theme**

Overall, the results show that Excelsia University students view AI as a two-sided tool. It can be helpful in understanding and writing but can be negatively reinforcing without critical thinking. Students also supported the idea that AI must encourage human reflection, which supports the concept of composed care (Darwin et al., 2024).

### **Discussion**

The aim of this study was to gain a better understanding of what Master of Social Work students at Excelsia University College think about critical thinking, look at what they see as the advantages of using Artificial Intelligence (AI) in their learning and consider the problems encountered and the ethical issues raised by the use of AI. The results were presented in three major themes: (1) students' understanding of critical thinking, (2) the role of AI tools in learning and reflective thinking, and (3) the boundaries and ethical issues regarding the use of AI. This section describes the findings in the context of the literature presented in Section 2 and outlines the implications of the use of AI in social work education.

### **Excelsia University College Students' Views on Critical Thinking**

The results show that the participants had an understanding of critical thinking as a process of multidimensionality, analysis, evaluation, reflection and ethical judgment. P1 said critical thinking is the skill

of evaluating evidence, weighing information and making thoughtful decisions, while P5 maintained that critical thinking is the process of examining evidence, evaluating information, and making decisions. These are similar to the definitions given by Abrami et al. (2015) and Bezanilla et al. (2019), who state that critical thinking is a blend of cognitive abilities and reflective processes. Additionally, participants linked critical thinking to fairness, awareness in context, and sensitivity to human situations, emphasizing the ethical aspects of critical thinking in social work practice (Hodgson et al., 2022).

Participants P2 and P3 emphasized the need for critical thinking by questioning assumptions and remaining skeptical. Their perspectives are similar to previous studies that found that successful critical thinkers need to question existing beliefs, consider other points of view, and analyze material from various angles (Slavin et al., 2021; Alsaleh, 2020). Structured approaches and logical thinking in analysing evidence were highlighted by Participant P4. In this regard, the conclusions of Mohseni et al. (2020) and Shaw et al. (2020) are in line with the results of this study, which indicate that systematic reasoning helps with making better judgements, communicating ideas in the academic context, and making decisions based on evidence. In general, they did not only see critical thinking as a thinking process but also as moral because of its concepts of fairness, responsibility and consciousness of social contexts.

### **Perceived Benefits of AI in Fostering Critical Thinking**

The overall attitude of the participants towards AI was positive, viewing it as a valuable tool for education that can help to increase understanding, improve efficiency, and facilitate reflective learning. Participants P1 and P3 said that they used ChatGPT and Grammarly to organise their thoughts, summarize lengthy information, and manage their academic work better. The results support those of Raharjana et al. (2021) and Duman and Akdemir (2021) that AI-assisted learning tools have the potential to alleviate cognitive load and enable students to concentrate on higher-order learning tasks. AI was also reported as a learning assistant which helps to promote access to explanations and academic support (Darwin et al., 2024).

Participant P2 saw the benefit of using AI as a tool to review theories and investigate evidence-based opinions, suggesting the potential for AI to help with the process of analytical learning (Mathisen et al., 2019; Halpern & Dunn, 2021). P4 and P5 also noted that AI helped them compare various sources, synthesize the information, and do reflective work. The results are aligned with the previous studies that showed that AI-supported educational technologies can stimulate active engagement and deep reflection in learning when being applied properly (Anggraini et al., 2022; Hafifah et al., 2021). Participants, however, stressed the importance of responsible use of AI, the necessity of human judgment, and the need to keep developing an ability to think independently.

### **Perceived Limitations and Drawbacks of AI**

The results indicated that there were some problems related to the limitations of using AI for the critical thinking skills of students. There was an understanding that AI tools can stifle students' thinking and creativity, and their ability to critically evaluate information, though the students found the AI tools useful. The findings revealed that algorithms were biased, there was restricted access to a broader spectrum of perspectives, and a possibility of blindly accepting AI-generated content. Students learned how AI systems might be flawed with incorrect or incomplete information, highlighting the importance of human judgment and oversight. Furthermore, the findings showed that an excessive dependence on AI can result in a passive learning approach, where instead of analyzing the data, students tend to go with the AI's solution. In this theme, students showed that the responsible use of AI tools is of paramount importance, and that essential thinking skills cannot be replaced by technology.

### **Research Implications**

Main findings from this research have relevance in social work education arenas as well as institutional practice when it comes to implementing AI. The results emphasize the need to incorporate awareness of

critical thinking and the use of ICT in education. Raising implications can be done at the behavioural and institutional policy level.

### **Behavioural Implications**

Overall, the findings suggested that the students at the college (Excelsia University) seem to have a fairly balanced approach to utilizing AI tools, where technology plays a significant role while room for reflection exists. This indicates a way of learning, where students learn and think along with AI. This might then be extended with students analysing and identifying potential inaccuracies and algorithmic biases for teachers. This concurs with Hodgson et al. (2022), who assert that mankind ought to learn morality as much as it is a matter of philosophy as often as it can be done. In the context of social work education, students could be encouraged to keep reflective journals to record their experiences of how they use AI tools and how technology is impacting their thinking. These may help to raise future social workers' ethical awareness, their sense of professional responsibility and reflective practice.

### **Policy Implications**

At the institutional level, Excelsia University College may explore the possibility of creating an extensive framework on AI literacy to support responsible AI use in education and learning. In this regard, there should be matters of proper use, education on academic honesty, staff training and student education and awareness campaigns on digital ethics (Abrami et al., 2015).

In alignment with the findings of Al Rantisi et al. (2024), it is recommended that synergy and collaboration should take place between the educator and technology to guarantee transparency, equity and effective utilization of AI. Varying levels of digital equity are also important considerations: not every student has all they need to access a good internet connection and other technological resources. Access to AI-supported learning is a prerequisite for equal opportunities in education, or otherwise the education gaps will increase as a result of technology gaps. Establishing guidelines that encourage the adoption of AI in a responsible and ethical manner would support Excelsia University College's goals of promoting responsible and inclusive digital education.

### **Limitations**

This study has some restrictions that should be considered when interpreting this study's findings. Firstly, the study was limited to a small number of participants and their own self-reported experiences, which could limit the transferability of the findings to other cohorts of social work students. In addition, the qualitative design focused on depth and context issues instead of statistical generalisation. Future studies could overcome these shortcomings by expanding the sample and diversity of subjects or by using a combination of hybrid or qualitative research and quantitative evaluation.

### **Conclusion and recommendations**

This study aimed to examine the concept of critical thinking from the perspective of the social work students at Excelsia University College regarding the critical thinking approach in learning related to AI. The results show that in general, students feel that AI has an ethical and positive role as a learning tool. There are some things that AI cannot replace, such as the human element of judgment, ethics, and professional responsibilities, which must not be overlooked when considering its role in enhancing learning outcomes, supporting learners, and aiding in reflection. In the future, there is a need to continually review promoting AI literacy and responsible use of technology and what can be done more responsibly in the social work curriculum to achieve this. This combination of AI and the principles of academic integrity, social responsibility, and human-centered learning will enable students to responsibly leverage new technologies and instill values of empathy, authenticity and self-directed critical thinking.

## References

- Abrami, P. C., Bernard, R. M., Borokhovski, E., Waddington, D. I., Wade, C. A., & Persson, T. (2015). Strategies for teaching students to think critically: A meta-analysis. *Review of Educational Research*, 85(2), 275–314. <https://doi.org/10.3102/0034654314551063>
- Alsaleh, N. J. (2020). Teaching critical thinking skills: Literature review. *Turkish Online Journal of Educational Technology*, 19(1), 21–39. <https://eric.ed.gov/?id=EJ1239945>
- Asakura, K., Occhiuto, K., Todd, S., Leithead, C., & Clapperton, R. (2020). A call to action on artificial intelligence and social work education: Lessons learned from a simulation project using natural language processing. *Journal of Teaching in Social Work*, 40(5), 501–518. <https://doi.org/10.1080/08841233.2020.1813234>
- Bezanilla, M. J., Fernández-Nogueira, D., Poblete, M., & Galindo-Domínguez, H. (2019). Methodologies for teaching-learning critical thinking in higher education: The teacher's view. *Thinking Skills and Creativity*, 33, 100584. <https://doi.org/10.1016/j.tsc.2019.100584>
- Darwin, D., Rusdin, D., Mukminatien, N., Suryati, N., Laksmi, E. D., & Marzuki. (2024). Critical thinking in the AI era: An exploration of EFL students' perceptions, benefits, and limitations. *Cogent Education*, 11(1), 2290342. <https://doi.org/10.1080/2331186X.2023.2290342>
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147–160. <https://doi.org/10.2307/2095101>
- Formosa, P. (2021). Robot autonomy vs. human autonomy: Social robots, artificial intelligence (AI), and the nature of autonomy. *Minds and Machines*, 31(4), 595–616. <https://doi.org/10.1007/s11023-021-09579-2>
- Goldkind, L. (2021). Social work and artificial intelligence: Into the matrix. *Social Work*, 66(4), 372–374. <https://doi.org/10.1093/sw/swab028>
- Halpern, D. F., & Dunn, D. S. (2021). Critical thinking: A model of intelligence for solving real-world problems. *Journal of Intelligence*, 9(2), 22. <https://doi.org/10.3390/jintelligence9020022>
- Hodgson, D., Boddy, J., Watts, L., Goldingay, S., & Nipperess, S. (2022). Problematising artificial intelligence in social work education: Challenges, issues and possibilities. *The British Journal of Social Work*, 52(4), 1878–1895. <https://doi.org/10.1093/bjsw/bcab168>
- James, P., Lal, J., Liao, A., Magee, L., & Soldatic, K. (2024). Algorithmic decision-making in social work practice and pedagogy: Confronting the competency/critique dilemma. *Social Work Education*, 43(6), 1552–1569. <https://doi.org/10.1080/02615479.2023.2195425>
- Kamoun, F., El Ayeb, W., Jabari, I., Sifi, S., & Iqbal, F. (2024). Exploring students' and faculty's knowledge, attitudes, and perceptions towards ChatGPT: A cross-sectional empirical study. *Journal of Information Technology Education: Research*, 23, Article 4. <https://doi.org/10.28945/5239>