

Repositioning GenAI as a Dialogic Learning Partner: A Reflective Participatory Study with students using chatbots in seminar preparation

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Abstract

The integration of generative AI (GenAI) into educational environments has presented significant epistemological and heutagogical challenges, particularly in redefining traditional teacher–student roles. As part of the UCL Changemakers Teaching Dialogue project, this paper draws on Schon’s concept of Reflection on Action (1983) and utilises the lens of critical practitioner reflection to explore how repositioning GenAI from a simple knowledge provider to a collaborative, equal learning partner can transform student engagement and learning. Key findings indicate that such a shift fosters critical thinking and enhances student engagement more so than when students are tasked only with critically analysing information generated by the chatbot. These results underscore the need for deliberate strategies to integrate GenAI effectively, offering new avenues for heutagogical innovation in higher education.

Keywords: GenAI; heutagogy; epistemology; higher education; learning partner; dialogic learning.

Introduction

The integration of generative AI (GenAI) into educational environments has presented many important epistemological and heutagogical challenges. The altered dynamics of knowledge creation since the advent of easily accessible GenAI have forced educationalists to rethink many foundational concepts in learning, such as the nature of knowledge, the process of justification, and the role of human judgement (Rodriguez Cuellar, 2023 and Tzirides et al., 2024). In addition, AI has altered the speed and scale at which information is created and distributed. While this can democratise access to information, it also makes it harder to control the quality and accuracy of the knowledge being spread (Jolls and Johnson, 2018). As a result, relying on AI-generated information in educational settings raises concerns related to accuracy, bias, and the way it can shape the understanding of truth (Farrelly and Baker, 2023). In addition, its use also has implications pertaining to intellectual property and academic integrity (Farrelly and Baker, 2023), with additional concerns around the potential for students to become increasingly dependent on GenAI to generate ideas, thereby endangering their critical thinking and independent problem-solving skills (Zhai, Wibowo and Li, 2024).

Alongside the epistemological concerns, the use of GenAI simultaneously challenges and enhances the principles of heutagogy, which emphasizes learner autonomy, self-determination, and the development of metacognitive skills (Yang et al., 2024; Blaschke and Hase, 2019). The main concerns relate to over-reliance on AI-generated responses, thereby leading to a reduction in learner agency, with students deferring to the AI's perceived authority or expertise rather than trusting their own judgement. When students perceive AI as an authoritative source of knowledge, it can reinforce a more passive reception of information rather than active engagement (Shum, 2024). An over-reliance can therefore undermine the development of autonomy and the ability to critically assess one's own learning. In addition to these concerns, there is a correlated reduction in non-linear learning pathways, as AI tends to guide learners in a more structured manner, offering information and suggestions shaped by algorithms that prioritize specific and predetermined pathways (Lai, 2024). Admittedly, while this structured guidance can be beneficial in certain circumstances, it may also restrict the learner's exploration and serendipitous discovery of new concepts, both of which are integral to self-determined learning. This perspective allows us to understand how such challenges have been navigated by learners when using chatbots as study partners.

Although it is not practically possible to address all of these concerns, this paper explores how some of these issues have been managed by students when using chatbots to prepare for seminars. It focuses specifically upon learner autonomy, the development of critical skills, and the process of knowledge justification, serving to highlight the importance of the deliberate repositioning of GenAI. The focus is upon the importance of transitioning GenAI from the position of a knowledge provider towards that of a collaborative learning partner.

The objectives of this project were twofold:

1. To explore whether rehearsing with chatbots helps students articulate their thoughts more effectively and build the confidence needed for meaningful contributions during live seminars, reducing barriers to participation.
2. To assess the effectiveness of a pedagogical model in which chatbots function as supplementary voices rather than authoritative sources. This model challenges the prevailing narrative that positions technology as the ultimate authority by reframing the chatbot as one voice among many, rather than the primary or sole authority.

The aim is to maintain a human-centered approach in education, emphasizing the role of technology as a tool that supports, rather than replaces, human expertise and critical thinking.

The paper draws on two key educational theories that appear to offer insight into how chatbots impact student learning and interaction. These are Vygotsky's (1978) concept of the "More Knowledgeable Other" (MKO) and Bakhtin's dialogic model (1981). Vygotsky's (1978) MKO emphasizes the importance of social interaction in learning, where individuals develop understanding through collaboration with a more knowledgeable partner (MKO). Bakhtin's dialogic model (1981), on the other hand, highlights the importance of dialogue in meaning-making, stressing that knowledge emerges through open, interactive exchanges. These theories provide the foundation for rethinking the role of GenAI as a collaborative participant in the co-construction of meaning, rather than an authoritative source of knowledge.

Vygotsky's concept of "More Knowledgeable Other"

Vygotsky's (1978) theoretical framework provides a useful lens for understanding how GenAI might be leveraged in education, with the concepts of MKO and scaffolding being of particular interest in the case study presented in this paper. Vygotsky (1978) posits learning as a social process, where the learner's understanding is enriched through interactions with more knowledgeable others (MKOs). Traditionally, MKOs have been viewed as authoritative figures, such as teachers. However, Vygotsky's conception of the MKO is more expansive, accommodating not only human instructors but also peers, books, journals, and more recently, digital tools (Stojanov, 2023). This flexibility challenges conventional ideas of authority in learning, suggesting that the essence of MKOs lies not in their human status but in their ability to guide learners effectively within their zone of proximal development (ZPD), where learners can perform a task with guidance that they could not yet accomplish independently (Vygotsky, 1978). This idea of an MKO therefore extends beyond human instructors to include digital resources and tools. The primary function of an MKO is not to provide direct answers but to scaffold the learner's progress. Scaffolding involves facilitating the transition from the learner's current level of understanding, referred to as the zone of actual development (ZAD), to their ZPD. This process embodies co-construction, where knowledge is not passively transferred but actively built through reciprocal engagement (Vygotsky, 1978). The MKOs adapt support based on the learners' needs, encouraging active participation and promoting deeper and more meaningful understanding. Vygotsky's vision of learning as co-constructed knowledge thus emphasizes the dynamic nature of the learner-MKO interaction, underscoring that effective learning arises from this adaptive and dialogic process. It is this dialogic and adaptive process offered by GenAI chatbots as MKOs that this sandbox pilot study explored.

By functioning as an MKO, ChatGPT can scaffold student understanding through immediate feedback and tailored responses, facilitating exploration and problem-solving within a learner's ZPD. This positioning allows ChatGPT to not only answer queries but also prompt critical thinking by encouraging further questions and exploration. Such engagement aligns with Vygotsky's view of collaborative learning, where meaning is co-constructed through dialogic exchange rather than passive reception of knowledge. It is this interaction between the MKO and the learner that is key. The MKO does not simply tell the learner the answer; instead, there is a sense of co-creation in relation to the knowledge. In this way the approach is interactive, with the learner actively participating and the MKO adjusting help based on the learner's current level.

Bakhtin's dialogic model

Bakhtin's (1981) perspective also helps portray GenAI as a dynamic learning partner through the concept of dialogic agents. Central to this view is Bakhtin's (1981) concept of heteroglossia, which highlights the inherently dialogic nature of language that emerges from the coexistence and integration of multiple voices and viewpoints. Tang (2024) extends this idea into the educational domain, presenting two key arguments to illustrate this alignment.

Firstly, the operational basis of GenAI reflects heteroglossia, as it synthesises a multiplicity of viewpoints through the computational processes of large language models (LLMs) (Tang, 2024). Most GenAI systems utilise LLMs to analyse vast patterns in linguistic data, predicting subsequent words or phrases based on probabilistic models. This synthesis involves complex juxtaposition and integration of information from diverse sources, resulting in outputs that reflect a mosaic of perspectives without the intentionality or conscious understanding present in human cognition (Tang, 2024). Despite the absence of genuine comprehension, GenAI's responses still represent an amalgamation of varied voices, thus simulating the heteroglossic nature of language through its interwoven and multi-perspectival outputs.

Secondly, the interaction between users and GenAI exemplifies Bakhtin's notion of dialogue, as each response from GenAI is shaped by and responsive to prior user input. Bakhtin (1981) asserts that no utterance exists in isolation; every statement is contextualised within a chain of previous dialogues, shaping its meaning. Similarly, the interplay between user prompts and AI responses illustrates a continuous and reciprocal exchange of ideas, where GenAI outputs are constructed in response to the learners' inputs, serving the role of a 'virtual participant' in the dialogue (Kim and Adolf, 2023,

p. 43). This dialogic interaction positions GenAI as a collaborative partner in meaning-making processes, rather than a mere tool, aligning with Bakhtin's view of language as an ongoing, socially mediated process.

Repositioning AI through perspectives of Vygotsky and Bakhtin

Vygotsky's (1978) focus on social interaction as a key driver of learning is also relevant to the way learners engage with GenAI. While AI lacks human intentionality, its interaction with users—responding to prompts, refining suggestions, and providing feedback—can be seen as facilitating a kind of dialogic exchange that stimulates cognitive development. Studies such as Mercer's (2008) work on dialogic teaching emphasize the importance of continuous dialogue for deep learning. Similarly, the interaction between learners and GenAI promotes cognitive growth by exposing students to new ideas, alternative formulations, and problem-solving strategies. This engagement reflects Vygotsky's theory that knowledge construction is deeply embedded in social contexts and exchanges.

In addition, recent research supports the idea that digital tools like GenAI can play a significant role in collaborative learning environments. For instance, Luckin (2017) argues that AI-based systems can provide adaptive learning experiences that are responsive to learners' needs, effectively creating individualised scaffolding that can enhance learning outcomes. Through adaptive feedback and content generation, GenAI aligns with Vygotsky's idea of responsive and tailored guidance, supporting learners as they work within their ZPD.

By drawing on the work of Vygotsky and Bakhtin, the case study repositions AI, moving from its typical role as an authoritative source of knowledge to that of a collaborative participant in the co-construction of meaning. In this framework, AI works alongside students to enrich their learning experience, emphasizing the dialogic nature of education. Rather than replacing human critical thinking and autonomy, the AI becomes a tool that supports and enhances these skills, and this approach empowers students by fostering confidence and critical thinking through dialogue. By promoting engagement and self-reliance in seminar discussions, it reduces the risk of over-reliance on AI while encouraging the development of independent, critical thought. In sum, applying Vygotsky's and Bakhtin's frameworks to GenAI in education opens its potential as a powerful tool for scaffolding and supporting social interaction, as well as advancing cognitive development.

Methodology

Chatbots are increasingly reshaping the way students engage with educational

content, providing new opportunities for learning and interaction. As part of the UCL Changemakers initiative, the researchers in this project (some of whom are also the authors of this paper) included both the participating teacher and students. This dual role as both researchers and participants allowed for a deeper, first-hand engagement with the process, aligning with the participatory ethos of the project. In line with this, Schon's concept of Reflection on Action (1983) was employed as a key component of the methodological approach of the study. Schon describes reflection on action as the process of critically analysing decisions and practices after they have occurred, allowing practitioners to evaluate outcomes and consider how actions might be improved in the future.

Therefore, the researcher group reviewed and evaluated the interactions between the students and the chatbots. Together they critically reflected upon how the chatbots prompts, responses, and the dialogic structure of the interactions influence the learning process. The work of Vygotsky and Bakhtin was applied as an interpretive framework to analyse this feedback, offering insights into how chatbots impacted student learning and interactions. The chatbots identified for use were Mizou, an educational chatbot designed for use in schools and universities, and Pi.AI, a personal assistant known for its conversational and user-friendly interactions. These tools were chosen for two different reasons – Mizou (Mizou.com) was used because of its development specifically for academic contexts, and Pi.ai (Pi.ai.com) was chosen for its friendly conversational approach. Importantly, you can chat using both voice and typed responses to both.

Emerging Themes and Outcomes

Initially, users expected the chatbot to function as an authoritative source of information. However, they quickly discovered that a passive approach—accepting the chatbot's responses as inherently true—resulted in less effective learning and, in some cases, overreliance on incorrect information.

I can't just like try give my full trust into what this AI is telling me because it may not be up to date [and] it may not be relevant anymore (Participant 1).

For example, they initially used it as something to glean information from but found that it was not providing them with the nuance they required for their university-level study.

For more factual subjects or areas ... I feel that it worked better because it was just dealing with facts and regurgitating what she learnt. [...] But as soon as we moved onto more subjective topics within humanities and social sciences ... I

could see that it sort of move[d] away from the academic [and] towards a more conversational, opinion based. (Participant 2)

However, the students recognized the limitations of the chatbot's knowledge, and rather than accept what they were told, they found that challenging its responses enhanced their learning. By viewing the chatbot's contributions as "provisional" rather than settled, they treated it as a supplementary voice to be questioned and debated rather than an authoritative source to be accepted without scrutiny. Initially one commented "In terms of fact-checking, it is not very reliable, and I would sort of stay away from it" (Participant 1) but others were a little more forgiving saying that they "would still need to go back to my readings and other materials to double-check if what I'm saying is actually right or if it's relevant to my own topic" (Participant 2). In essence, the chatbot became as if it were another student rather than an especially trusted source of authority.

I also do think that the practice of going back and forth, sort of like calling it out if it's wrong or answering the bots' questions, helps you critically analyse more and just be ready. [...] for the questions that the seminar leader might be asking you as well, so it's a good exercise in building confidence and to sort of understand the setting better. (Participant 2)

As a result, the students moved the role of the AI to study partner and shifted their interactions with it toward a dialogic approach (Bakhtin, 1981). Rather than the students asking the chatbots for answers, they asked it to question them. They asked the chatbot what it had understood of what they had said and asked it to repeat it to them in bullet points. This then led to them requesting suggestions on improving the way they were articulating themselves for clarity rather than asking for the chatbot to provide academic content.

I could kind of have a practice formulating my thoughts. Reorganise all these ideas in my head and actually say it aloud [...] it may not be the most useful tool to fact-check ... but it helps me to polish my response and just double-check if what I'm saying actually makes sense. (Participant 1)

This approach was found to be beneficial for seminar preparation, and they reported it deepened their understanding of the material. Importantly, the students saw the chatbot as an adjunct to their lecturers and seminar leaders, not as a replacement for them.

It creates a safe space for them to practise before the seminar so that they'd feel more confident to do so in the actual class. (Participant 2)

It is a good exercise and practice in terms of getting started and sort of getting to familiarise yourself with a seminar setting because I know it's very new for students. (Participant 1)

Implications for Education

The ability of the chatbot's trial to act as a "friend, guide, or philosopher" (Chatterjee and Dethlefs, 2023) appears to have helped with student confidence, enabling them to feel more prepared and ultimately more able to participate in seminars, having 'rehearsed' the potential content with the chatbots beforehand. The process demonstrated that chatbots can play a valuable role in supporting student engagement and confidence in face-to-face seminars, particularly when used as part of a dialogic, human-centered approach to learning. By repositioning the chatbot as a collaborative participant rather than an authority, students were able to develop critical thinking skills and approach their learning with greater autonomy. Through their interactions with chatbots, students learnt to value the integration of diverse perspectives, including those generated by AI. Rather than merely accepting information from technology, they engaged in active dialogue with chatbots, collaboratively constructing meaning. Also, throughout this process, students critically assessed the accuracy and relevance of the chatbot's responses, reflecting a shift in 'epistemic authority' (Tang et al., 2024, p. 494), which extended beyond GenAI to the wider learning community. This shift underscores the essential role of human judgement in verifying and contextualising knowledge within the use of GenAI (Tang et al., 2024). This therefore highlights the potential for chatbots to enhance, rather than replace, the human elements of education, reinforcing the importance of maintaining a human-centred approach in technologically integrated learning environments.

From learning tools to cognitive partners

While GenAI holds potential as a cognitive partner that enhances student engagement and critical thinking, it is important to acknowledge these advantages can be tempered by challenges that educators would need to carefully address. One of the most prominent concerns for educators is the potential impact of GenAI on academic integrity (Naumova, 2023; Supiano, 2023). With its ability to generate extensive responses and even entire essays,

GenAI poses a risk if used as 'end-products' (Kim and Adolf, 2023, p. 43) rather than as learning aids, and when students rely on GenAI-generated content without adequate oversight, the boundary between independent work and AI assistance becomes blurred, raising ethical concerns around originality and authorship. This is an especially prescient issue in education given the limitations of current detection methods that struggle to reliably differentiate AI-generated content from human work, leaving educators with limited tools to ensure that assessments reflect authentic student learning (Supiano, 2023).

Another critical implication of GenAI involves its limitations regarding information accuracy. Although GenAI can simulate human-like dialogue and provide responses across a wide range of topics, it lacks the inherent ability to verify the accuracy of the information it generates. AI tools draw on pre-existing data, which can carry biases, inaccuracies, and outdated information, posing risks when students uncritically accept AI responses as factual (Kim and Adolf, 2023). These inaccuracies can mislead students, leading to misunderstandings and misconceptions that may undermine their learning.

Conclusion

This practitioner's critical reflection highlights the transformative potential of repositioning GenAI as a dialogic partner in learning. By moving beyond the traditional view of AI as a mere provider or transmitter of information, the participants—students and the chatbots—co-created a dynamic learning experience, one that emphasized interaction and critical thinking. Therefore, shifting towards GenAI as a dialogic learning partner not only has the potential to enhance student engagement and confidence in seminar discussions but could also mitigate the risks of over-reliance on AI by fostering a deeper, more reflective approach that engages critical thinking and autonomy.

In conclusion, GenAI chatbots can be said to have the potential to enrich learning through their facilitation of dialogue. Their use of bots in this instance affirmed the value of co-construction and the interplay of multiple voices in meaning-making, as well as foregrounding human judgment and agency when navigating the outputs of AI. Through emphasizing the role that GenAI can play in the dialogic nature of learning, it can support the development of human critical thinking and autonomy; therefore, it can be meaningfully integrated into seminar preparation. The recommendation of this research is that in educational settings, GenAI should be reconceptualised by all stakeholders, moving it away from being a 'knowledge' transmitter or advanced search engine and towards engaging with it as a collaborative learning partner that fosters students' confidence and critical thinking through meaningful dialogues.

Abbreviations

MKO: More Knowledgeable Other
AI: Artificial Intelligence
GenAI: Generative Artificial Intelligence
ZAD: Zone of Actual Development
ZPD: Zone of Proximal Development

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