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Embracing Generative AI for Authentic Learning

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Abstract

With the advent of generative artificial intelligence (gen-AI), the effectiveness of instructional pedagogies for students in higher education needs to be reassessed to make sure they learn authentically—a pedagogical approach of enabling students to learn and acquire knowledge meaningfully within the context of real-world problems relevant to their lives. To achieve this, instructors must redesign their courses to deliver content in ways that encourage participation and engagement within an AI-driven community-of-inquiry type of learning environment. This article proposes a theoretical framework for integrating gen-AI into the design and delivery of courses to promote authentic learning in a gen-AI-driven context by reorganizing the student experience along three axes. The first axis is to create learning activities that are context, task, impact, and value authentic. The second axis is to reconfigure the roles of students and instructors, as well as the latter's pedagogies in ways that promote authentic participation and engagement that develop the student's sense of self-efficacy, emotional engagement, belongingness, and overall well-being. The third axis is fostering a community-of-inquiry type of learning environment, one that is characterized by cognitive presence, social presence, and teaching presence, these being the qualities that facilitate student engagement and participation that lead to authentic learning.

Keywords

Generative AI, Authentic Learning, Pedagogy, Student Engagement, Authentic Participatory Engagement, Community of Inquiry

1. Introduction

Deeply rooted in their historical, social, cultural, and political settings, institutions of higher education establish unique structures, systems, and processes that gradually become institutionalized as established standards and accepted norms.

Heretofore, students enrolled in such institutions are expected to acquire head knowledge and skillsets from their instructors who, as chalk-and-talk sage-on-stage experts, impart their knowledge to students. However, there may be a disconnect between theory and praxis in this model. Contrariwise, if learning is situated or embedded within authentic contexts, knowledge acquisition becomes more meaningful (Brown et al., 1989). But even such situated learning needs to be reconceived now with the advent of gen-AI which can create content by extracting insights from extensive datasets. How to deliver such situated learning in terms of student motivation, student learning and student engagement must presently take into consideration this new technology. While instructors may well fear that gen-AI could short-circuit student learning if used to complete course assignments, it does not gainsay the fact that seen as an alternative source of information, ideation, and expertise that is accessible to students on mobile devices here-and-now, gen-AI does pose a challenge to instructor authority in the classroom. Nevertheless, it cannot be disputed that gen-AI facilitates the easy acquisition of information, ideas, and knowledge, all of which may enhance productivity by offering several ideas and generating multiple solutions. Thus, it clearly can augment student knowledge in one sense, even if it short-circuits learning in another. Given the two sides of one coin, the task for instructors is to think through how to promote authentic learning not by rejecting but rather by incorporating gen-AI in their course design and content delivery.

This paper proceeds as follows. In Section 2, the benefits and challenges that gen-AI brings, which may impact learning, are canvassed briefly. In Section 3, the concept of authentic learning is reviewed. In Section 4, I outline a conceptual framework in which authentic learning is fostered through the reconfiguration of course design and content delivery in ways that promote student participation and engagement in a gen-AI-enabled community-of-inquiry type of learning environment. In Section 5, policy guidelines on the use of gen-AI in the classroom are suggested. The paper then concludes.

2. What Gen-AI Brings

Utilizing the popular gen-AI app called ChatGPT (Chat Generative Pre-trained Transformer) to explain what gen-AI might be, Routley (Routley, 2023) reported that its return said that: "Generative AI refers to a category of artificial intelligence (AI) algorithms that generate new outputs based on the data they have been trained on. Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI creates new content in the form of images, text, audio, and more." Because it pushes the boundaries of human cognition and transforms how people acquire and generate information and knowledge, gen-AI is disrupting existing educational methodologies. By trawling through immense amounts of diverse content, gen-AI can provide facts, figures and opinions quickly, while also synthesizing very rapidly vast amounts of information from huge databases. The information it thus generates can be pre-

sented multimodally as text, image, audio, and video in potentially very creative ways. Therefore, if used in education, it clearly can enhance the overall enterprise by creatively facilitating learning in innovative ways. This means that a collaborative partnership between humans and gen-AI will be needed in education. If so, instructors will need to develop pedagogies based on a good understanding of how gen-AI operates, and also cultivate an appreciation for the abundant opportunities for knowledge generation it offers. After all, effectively utilizing any technology necessitates a certain comfort level with it, which is best attained by proactively learning to appreciate its capabilities and shortcomings, and then deciding to work collaboratively with it (Neeley, 2023).

2.1. Benefits of Gen-AI

Gen-AI can function as a voracious learner, an exceptional transformer, a creative generator of ideas, an amazing worker, an inquisitive assistant, and a personalized communicator.

1) **A voracious learner**: Gen-AI has the ability to learn autonomously from vast databases of texts, images, or audio, fostering its generative and creative capabilities, which will augment human creativity and productivity. Being conversational and interactive in nature, gen-AI can respond to criticisms or suggestions for improvement (OECD, 2021).

2) **An exceptional transformer:** Gen-AI can transform various domains, potentially pushing them to unprecedented levels of performance. For example, it is already being used to generate novel video content that can significantly impact Netflix, YouTube, and TikTok (Gupta & Parker, 2023). In drug discovery, deep gen-AI models can swiftly investigate a wide spectrum of potential therapeutic candidates and optimize them for specific targets or functions (Vert, 2023).

3) **A creative generator**: Not only is it ideationally generative and at unprecedented speeds, to boot, gen-AI such as DALL·E, Midjourney, and Stable Diffusion can transform those ideas in text descriptions into realistic images, generating novel social media visual content at low costs. It can augment creativity through assessing and also refining ideas, fostering divergent thinking, confronting expertise bias, and encouraging collaboration with and among users (Eapen et al., 2023). In augmenting creativity, gen-AI can lead to three possible futures potentially, viz., first, a surge in AI-generated creative content as more people become acquainted with the concept of "prompt engineering," or the skill of formulating precise queries for gen-AI; secondly, an influx of AI-generated content that lowers production costs even in the context of extreme personalization and versioning; and, thirdly, the rise of premium compensation for people who produce authentic and creative content that leverages on an understanding of social and cultural contexts, transcending geographical and temporal boundaries (De Cremer et al., 2023).

4) **An amazing worker:** Gen-AI can produce paragraphs and pages of so-

phisticated writing in mere seconds. Apart from generating such text, gen-AI can also help students complete a four-hour software project in one hour by generating the codes for a startup prototype using code libraries that students may not even be aware of in the first place (Mollick, 2022). Its remarkable ability to produce various forms of written content and accomplish diverse tasks significantly reduces the time and resources needed.

5) An inquisitive assistant: Gen-AI can improve how questions are asked in terms of question velocity, variety, and novelty. First, question velocity is the capacity to pose more questions faster; secondly, question variety involves asking more diverse questions by leveraging on patterns and correlations in massive datasets that AI can identify which humans cannot; thirdly, question novelty entails formulating unique questions that stimulate innovative exploration by applying insights from one domain to a completely different one (Gregersen & Bianzin, 2023).

6) A personalized communicator: Gen AI can generate personalized messages based on the characteristics of the target audience. It can craft messages with an eye on cultural orientation, whether loose or tight; psychological capital elements such as hope, efficacy, resilience, and optimism at varying levels; framing techniques, with either gain or loss frames; distinct focus, whether promoting or preventative; locus of control; and personality traits (Graves, 2023).

2.2. Challenges of Gen-AI

The challenges that gen-AI presents in education involve issues of academic integrity, fear of the unknown, differential access, and the threat to jobs.

1) Threats to academic integrity: The greatest fear that educators have if students were to use gen-AI to do their course assignments and examinations is that of plagiarism. After all, gen-AI is probably better at exams than most students, e.g., GPT-4 scored at the 90th percentile of a bar examination; 93rd percentile for SAT reading and writing sections albeit only the 89th percentile in the math section; the 99th and 80th percentile for the GRE verbal and quantitative sections, but surprisingly only 54th percentile for the writing test (Varanasi, 2023). While some educators may choose to ban ChatGPT to prevent plagiarism, others are thinking of ways to re-design their assessments and course assignments to embrace ChatGPT (Sullivan et al., 2023).

2) Fear of the unknown: The advancement of gen-AI is occurring so rapidly that policymakers in educational institutions can hardly catch up or keep up. The absence of proper regulations in such institutions has left many privacy-related issues and ethical concerns unresolved. For example, how do instructors deal with information that students use that was provided by gen-AI that may be biased, inaccurate, deceptive, or discriminatory? Then there are also data-protection and data privacy issues as well.

3) Differential access: While some gen-AI platforms may be available free of charge, their more advanced versions can only be accessed by paid subscription.

As such, where instructors allow students to use gen-AI to do their course assignments, more well-off students may have a distinct advantage just because they can afford to pay for subscription-based versions of gen-AI with more advanced functions. To provide a level playing field, universities may consider paying for such gen-AI to make it available for all their matriculated students.

4) **Threat to jobs:** That gen-AI will replace workers for certain tasks seems inevitable, likely "white collar occupations requiring high levels of formal education [such as] business professionals, managers, science and engineering professionals, and legal, social and cultural professionals." (OECD, 2021, p. 2)

3. Authentic Learning

Authentic learning matters because students gain confidence as they become acknowledged as "legitimate peripheral participants" within a community of practice, where "legitimate peripheral participation" is the progression in which newcomers evolve into experienced members and, ultimately, seasoned participants in a community of practice (Lave & Wenger, 1991). If they are eventually to succeed in the real world of a competitive global job market, students must acquaint themselves with the complexities of ambiguous real-world issues. It stands to reason that the more they immerse themselves in emulations of authentic situations, the more proficient they are likely to become at navigating ambiguity in real-world scenarios and applying their analytical and communication skills in accordance with the requirements of their professional roles.

Authentic learning involves situating learning within a context that closely replicates real-world scenarios. The establishment of authenticity in learning results from the dynamic interplay among students, learning tasks, and the relevant contexts in which that learning occurs. This empowers students to apply the knowledge they acquire to comparable situations in their future endeavors (Barab et al., 2000; Roach et al., 2018; Zuo et al., 2019; McDermott & Daniels, 2021). To improve the authenticity of learning encounters, learning tasks must be designed so as to imitate closely those activities that might be anticipated in real-world scenarios, considering elements such as complexity, limitations, and possibilities. Moreover, not only must the physical and functional aspects of such tasks be replicated as far as possible, but their psychological, social, and contextual factors ought also to be factored in (Lave & Wenger, 1991; Lowell & Yang, 2022; Lowell & Tagare, 2023). By engaging in such purposefully designed learning tasks, students will have the opportunity to apply pertinent concepts and theories to specific contexts, which would render the learning experience relevant and meaningful. Examples of authentic learning tasks include interviewing a startup entrepreneur, analyzing a news report on business scandals, or undertaking a project to address a real-world problem. By doing all this, students will gain a diverse range of knowledge and skills, preparing them to navigate the complexities and uncertainties inherent in real-life situations. For instance, when tasked with proposing solutions to promote zero-waste in restau-

rants, students must consider the constraints faced by restaurants in implementing their recommended solutions not only in terms of customer preferences but also supplier constraints, regulatory requirements, manpower needs, etc.

According to the theory of situated cognition, learning is shaped by social interactions and cultural elements, which means that the social context in which their learning occurs matters. Ideally, this context ought to be a supportive community of peers and instructors, in which there is shared responsibility in acquiring and constructing knowledge (Scardamalia & Bereiter, 2014). There are affective factors that impact learner attentiveness, presence, and engagement (Um et al., 2012). As such, a supportive learning community that cultivates positive emotions and manages negative emotions during the learning process can heighten the effectiveness of learning.

Building upon the preceding discussion, in the next section, I sketch out a gen-AI driven learning framework that integrates the key elements necessary to realize authentic learning.

4. A Model of Gen-AI Enabled Authentic Learning

Since it might be wiser to try to integrate gen-AI into higher education rather than striving to keep it out, instructors will need to transcend conventional notions of student engagement, participation, and learning. To do so, they will need to look for ways to foster authentic learning that generates experiences that are "personally relevant from the learner's perspective and situated within appropriate social contexts" (Iucu & Marina, 2014, p. 410). The way to do this is to remodel courses by incorporating gen-AI to create authentic learning activities that cultivate authentic participation and engagement, in which student and instructor roles are reconfigured, while instructional pedagogies are also redesigned, all within the context of a community-of-inquiry type of collaborative learning environment (see Figure 1).
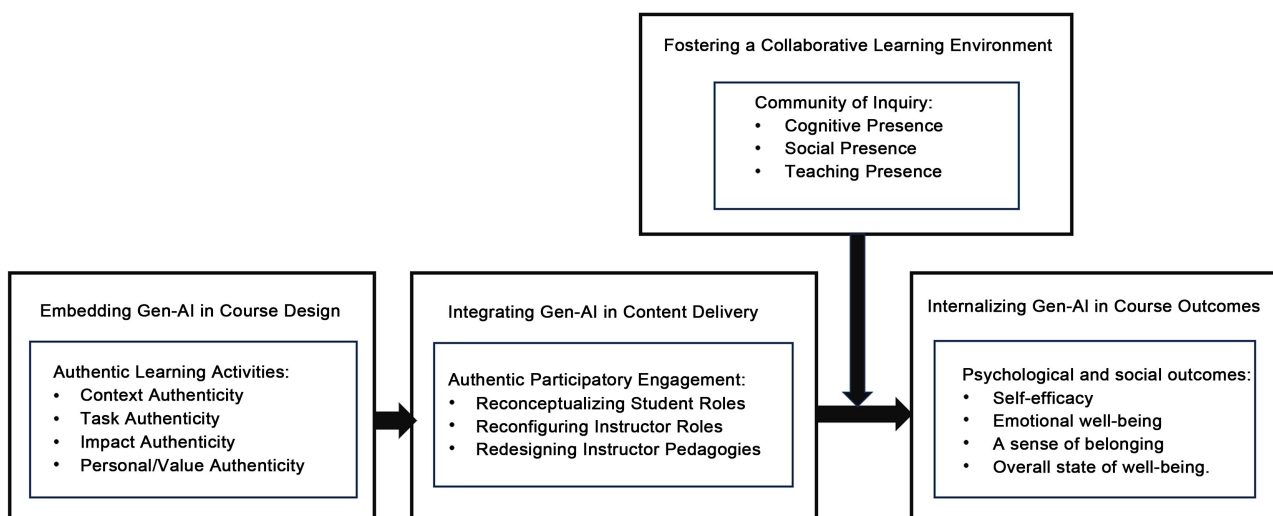
Figure 1. Gen-AI-enabled authentic learning framework.

The various building blocks of this model may be described as follows. In Section 4.1 below, I review how courses may be designed for learning activities that are authentic along four dimensions, namely, context, task, impact, and values authenticity. In Section 4.2 next, I discuss course delivery that fosters authentic participation and engagement of students by way of reconfiguring their roles and those of instructors, as well as the latter's pedagogies. In Section 4.3, what a gen-AI enabled community-of-inquiry type of collaborative learning environment might look like is canvassed, this being one that fosters cognitive, social, and teaching presence. The optimal outcome of the delivery of such redesigned courses is authentic participation and genuine engagement on the part of students within a community-of-inquiry type of collaborative learning environment. In this scenario, there will be authentic learning in which, in addition to garnering head knowledge, students will come to have a sense of self-efficacy, emotional well-being, belongingness, and overall well-being.

4.1. Embedding Gen-AI in Course Design

Traditionally, courses have been designed with an eye on the transfer of knowledge, with generally two implicit philosophies behind that course design, one of which is to decontextualize knowledge into abstract theories and concepts so that they are no longer context-dependent and thus can be generalized across multiple contexts. The other pragmatically weighs the significance of knowledge in terms of the outcomes it generates when applied in real-world situations. However, there is a third way to bridge the gap between learning and practical application, which is the notion "situated cognition" (Brown et al., 1989), i.e., that knowledge is mainly shaped by its context, so knowledge evolves over time through active utilization, that situatedness of knowledge having to do with the fact that not only are content and context inseparable but that they also actually exist in a dialectical relationship (Greeno, 1998; Lave & Wenger, 1991; Cobb & Yackel, 1996). It was this situatedness perspective that led to the development of the simulation and participation model of learning environments to foster authentic learning (Radinsky et al., 2001). This model involves the creation of learning activities that resemble real-world activities in terms of factual, procedural, and task authenticity. First, there is factual authenticity when a particular activity's contextual elements replicate those in a real-world setting. Next, there is procedural authenticity when cognitive processes and problem-solving approaches in an educational setting resemble those in real life situations. Finally, there is task authenticity when classroom tasks are harmonized.

In their literature review, Strobel et al. (Strobel et al., 2013) identified similar dimensions of authenticity, which they labelled somewhat differently as context authenticity, where content is or resembles real-world content; task authenticity, where processes/activities resemble real-world ones; and impact authenticity, where student output is derived from real-world situations such as industry-based projects. The authors added two more dimensions of authenticity, viz.

personal authenticity, where projects are closely related to the personal lives of students; and value authenticity, where activities map onto students' personal values. Now, these dimensions of authenticity may be used to classify the various characteristics of authentic activities that Herrington et al. (Herrington et al., 2003) identified, which would be of help in designing learning activities and learning assessments:

a) Context authenticity

• Real-world relevance: activities promoting the active application of abstract concepts and theories within realistic contexts, matching the real-world tasks of professionals.

b) Task authenticity

• Ill-defined tasks: activities fostering critical thinking to identify and define tasks needed to complete the assigned tasks.

• Challenging tasks: activities demanding sustained efforts and investments in intellectual resources.

• Complex tasks: activities requiring the application of different theoretical perspectives, utilization of different resources, and differentiation of useful and useless information.

• Holistic tasks: activities leading to the completion of an assignment, rather than finishing a partial task as preparation for another activity.

• Multiple possible outcomes: activities that permit multiple interpretations and multiple competing solutions.

c) Impact authenticity

• Collaborative tasks: activities in which collaboration is necessary for the completion of tasks.

• Interdisciplinary orientation: activities in which learning is transferable to other domains, adopting diverse sets of expertise and perspectives.

• Integrated assessment: activities in which assessment of performance is integrated into the tasks assigned.

d) Personal/value authenticity

• Reflective tasks: activities that involve self-reflection.

Given the extensive influence of gen-AI across various realms of knowledge, it is now essential for instructors to integrate gen-AI into their course planning to promote these "authenticities." For example, studying and discussing business cases that took place in a pre-AI era would be less than authentic in this sense. Students must be encouraged to participate and be engaged in such learning activities designed to mimic things in the real world in the gen-AI era, which is where course delivery comes in.

4.2. Integrating Gen-AI in Content Delivery

In attempts to enhance learning effectiveness, it is student engagement that has been found to be critical (e.g., Hartmann et al., 2013; Bakker et al., 2015; Betts, et al., 2010; Fredricks & McColskey, 2012). Nevertheless, theorization about stu-

dent engagement remains unsettled, there being multiple definitions of and theories about the construct itself, with generally no clear delineation of antecedents, states of engagement, and consequences (e.g., Trowler, 2017; Zepke & Leach, 2010; Kahu, 2013). For example, Kuh, et al. (Kuh, et al., 2008, p. 542) defines student engagement to include "both the time and energy students invest in educationally purposeful activities and the effort institutions devote to effective educational practices." Likewise, Xerri et al. (Xerri et al., 2018, p. 590) saw it as "the ability of a student to manage their time; prepare for, and participate in, classroom activities; interact with teaching staff and other students; and complete academic activities." Then there are Snijders et al. (Snijders et al., 2020, p. 3) for whom it is "a positive, fulfilling, work- (study-) related state of mind that is characterized by vigor, dedication, and absorption." What is common to all three definitions is how they all see student engagement too narrowly as student actions within the confines of a teacher-led classroom. By contrast, a broader view of student engagement would transcend behavioral engagement to include emotional engagement (i.e., the emotional responses of students towards others) as well as cognitive engagement, where students demonstrate intrinsic motivation in the process of learning (Fredricks et al., 2004). Socio-culturally and ecologically, student engagement would be the integration of student action with their pre-existing knowledge, personal experiences, and a wide range of socio-cultural elements (Lawson & Lawson, 2013). Likewise, for Kahu (Kahu, 2013), structural and psycho-social antecedents impact the state of student cognitive, emotional, and behavioral engagement, which leads to personal and social consequences.

Conventionally, student engagement is seen in the context of class participation, where the instructor's role is largely that of organizing what issues will be discussed and managing student participation in that discussion. In such classroom settings, instructors tend to see themselves as and play the role of experts who pose questions to students who try to offer answers in the hope that the answers are acceptable. Such superficial classroom interaction is unlikely to engage students authentically to any meaningful extent since authentic learning experiences must contribute to and build up student's sense of autonomy. That is, teaching behaviors that lead to authentic learning experiences ought to contribute to a student's sense of autonomy. Indeed, Reeve and Jang (Reeve & Jang, 2006) found a positive correlation between student's sense of autonomy and eight specific teaching behaviors including listening attentively, assigning tasks that require independent work, allowing students the chance to engage in discussions, acknowledging and praising progress, motivating students to try, offering helpful hints to facilitate progress, responding to inquiries, and recognizing student viewpoints. Three types of instructional behaviors that especially bolstered student autonomy included: engaging students in meaningful tasks that nurture their internal motivation; using informative but non-controlling language to explain rationales and competence-related details; and recognizing

student viewpoints and emotions by showing them that their ideas and opinions during learning tasks are valued. Finally, apart from instructor support of student autonomy, a well-defined course structure also correlates well with student engagement because more precise information about expectations to attain desired learning outcomes allows students to see more clearly how they ought to go about getting to those outcomes (Jang et al., 2010).

In the context of citizen participation in the public policy-making process, there is a certain grounded theory model in the public administration literature that is instructive and worth quoting at some length. In the context of conventional public participation (King et al., 1998, pp 320, 321, 323, 325):

"The citizen is placed at the greatest distance from the issue, the administrative structures and processes are the closest, and the administrator is the agent between the structures and citizens… [The] administrator controls the ability of the citizen to influence the situation or the process, …play[ing] the role of the expert [in a] 'practitioner-client hierarchy.' …. Participation in this context is ineffective and conflictual [whereas] effective participation…is real or authentic, [with] deep and continuous involvement…focus, commitment, trust, and open and honest discussion. [If in conventional] participatory efforts … public administrators become 'interpretive mediators'…they must move beyond the technical issue…by involving citizens in 'dialectical exchange'…by engaging with citizens in discourse…rather than simply getting citizens input. Then, the administrator becomes a cooperative participant, assisting citizens in examining their interests, working together with them to arrive at decisions, and engaging them in open and authentic deliberation…Authentic participation places the citizen next to the issue and…moves the administrator away from a reliance on technical and expertise models of administration and toward meaningful participatory processes. In order to move toward authentic models, all three components of public participation—the administrative structures and processes, the administrators, and the citizens—must be addressed [by] Empowering and Educating Citizens, …Re-educating Administrators [and] Enabling Administrative Structures and Processes."

Building on this model and replacing "administrator" with "instructor," and "student" for "citizen," and, "classroom" for "structures and processes," one may propose the following components for a new model of course delivery involving: reconceptualizing student roles; reconfiguring instructor roles; and redesigning instructional pedagogies.

1) Reconceptualizing student roles: In a classroom setting where students have the opportunity to consult gen-AI at their convenience, students can cease behaving like sponges that simply soak up information their instructors may dole out. On the contrary, they will become engaged learners who may acquire knowledge not only from the instructor but also from on-the-fly gen-AI, thereby enhancing their ability to participate in discussions. In such a scenario, empowering students becomes crucial to cultivating their self-efficacy, which entails

their belief in their ability to accomplish tasks successfully and achieve specific performance goals (Bandura, 1997).

2) Reconfiguring instructor roles: Empowering students in the manner described earlier will require a shift in instructor mindset as well. For instructors to integrate gen-AI into their pedagogies, they will first and foremost have to rid themselves of any notion that if gen-AI empowers students, it must correlatively disempower instructors. After all, instructors can also resort to gen-AI themselves! True, there are now more than the two parties traditionally found in the classroom, i.e., students and instructor, since there is now a third party as well, i.e., gen-AI, whose responses are based on super-extensive databases, so it certainly challenges the instructor's expertise and authority. If instructors are to navigate this challenge, they will need to take off the traditional hat they are so used to wearing, that of the expert whose job is to impart knowledge or prescribe certain ways of thinking. Instead, they will need to put on a new hat, that of the facilitator whose job is to create a learning environment that promotes authentic participatory engagement, fundamentally requiring them to actively acknowledge what students may have to say or share. To foster effective collaboration, group interactions must involve co-regulation of metacognitive activity and advanced content processing, encompassing co-construction of meaning (Volet, et al., 2009). Such a learning environment encourages the social construction of knowledge and meanings through social interactions and thoughtful deliberations among students. So that students participate meaningfully in knowledge sharing, instructors must stay open-minded when listening and responding to them, showing respect for and sincerity in considering what students may voice, including knowledge garnered from gen-AI, which instructors should regard as opinions or viewpoints that just happen to differ from their own.

3) Reconfiguring instructor pedagogies: Gen-AI can play the role of an active partner that augments human intelligence. Therefore, instructors need to teach students how to work with gen-AI. To do so, there is a need to reconfigure not just course structure but also instructor pedagogies in course delivery to enable authentic participation on the part of their students. In terms of course structure, the primary goal of course design is to guide students towards adopting an authentic learning mindset as they participate in authentic learning activities. Take, for instance, a business management course in which students are asked to use gen-AI to help them analyze a real-life problem when Google was sued for alleged racial bias against its black employees (Wakabayashi, 2022). In such an assignment, context authenticity would come from the fact that students are to handle a real-world issue. Then there is task authenticity if students are asked to apply relevant management theories and conceptual frameworks to analyze that situation. Students also hone their critical analysis skills in attempting to assess the quality of the analysis that gen-AI provides for them. Finally, there is impact authenticity if instructors check whether students have understood the various concepts and theoretical frameworks used in their analyses. In-

structors reinforce impact authenticity by getting students to apply that newly acquired knowledge and skills to other hypothetical contexts in their local settings, which also helps them develop agile thinking skills.

In regard to course delivery, developing higher-order thinking skills in students is of paramount importance if they are to excel in executing real-world tasks that may be ill-defined, challenging and complex (Fink 2003; Meyers & Nulty, 2009). To encourage higher-order thinking when integrating gen-AI in course delivery, instructors can adopt an inquiry-based instructional approach that stimulates active thinking, prompts students to engage in higher-order thought processes, builds upon their existing knowledge, and arrives at meaningful conclusions (Minner et al., 2010). Rather than directly presenting specific content to students, instructors can create an environment that encourages students to ask questions of gen-AI about a certain topic, and they then become responsible for assessing gen-AI returns. In this way, students not only learn about a certain topic on their own but also acquire/exercise the analytical skills to evaluate gen-AI returns. For example, to explore the concept of narcissism, a student could pose this question to ChatGPT, "Is Donald Trump a narcissistic individual?" and ChatCPT responds, "*As an AI language model, I can't provide real-time assessments or make diagnoses about specific individuals. Determining whether someone fits the criteria for narcissism requires a comprehensive evaluation conducted by a qualified mental health professional who has personally examined the individual. Public figures, such as Donald Trump, can display a range of personality traits, but making an official diagnosis from a distance is not appropriate or accurate. It's important to approach discussions about individuals' mental health with sensitivity and respect, focusing on observable behaviors and public actions rather than speculating on personal characteristics.*" This response is then used as the focus for an in-depth classroom discussion and thoughtful deliberation about narcissism.

Also building upon King, Felty, and Susel (King et al., 1998), it has been suggested by Bland (Bland, 2018) that in contrast to the direct provision of various services by governmental authorities, it was authentic participatory engagement (APE) in local self-governance processes that optimally advanced social equity among socially disadvantaged populations. Likewise, one may propose in parallel that re-engineered course delivery as suggested above ought to foster student APE as well. But this will take much more than merely urging students to voice their individual opinions. Instead, instructors must actively validate their students' sense of dignity and self-worth. If collaborative relationships are forged between students and instructors, they will co-create meaning and relevance in classroom learning. Instructors can cultivate student enthusiasm for engagement by providing them with opportunities for participation and then acknowledging their contributions. Thus, the quality of the instructor-student relationship is critical. Where student participation is limited or superficial, it is likely that trust in the instructor is low, leading to negative emotional experiences and ultimately

undermining the student's sense of self-efficacy, belonging, and overall well-being. Conversely, it is a trusting relationship between student and instructor that enhances student self-efficacy, emotional well-being, sense of belonging, and overall state of wellness. And for students to develop a sense of trust in their instructors, there must be mutual understanding and agreement between them regarding what the purpose of their participation might be and how their performance will be assessed or monitored.

4.3. Fostering a Collaborative Learning Environment

When implementing an inquiry-based instructional approach in the classroom, it is vital for instructors to cultivate genuine and active involvement that motivates every student to participate meaningfully. To do so, it is important for instructors to not only reconfigure course design and reform course delivery but also build a community of inquiry to enthuse students, so that they willingly invest the necessary time and effort into the learning process. In this, instructor behaviors must be those that support student autonomy, self-confidence, emotional well-being, feeling of inclusion, and overall state of well-being.

Every piece of knowledge is influenced by the specific physical, social, cultural, political, and economic circumstances in which it exists, students interpret and understand knowledge based on their own life contexts, which include personal experiences, subjective thoughts, emotions, and prior knowledge. When acquiring knowledge in a classroom, students are influenced by their collective social interactions and relationships. Collaborative learning plays a significant role in fostering a sense of ownership, making the course content relevant and enriching of student learning experience (Nelson, 1999; Jonassen, 1999; Reigeluth, 2009).

A supportive learning community is vital for creating a learner-centered environment where students are actively engaged in the learning process. Students must feel safe and comfortable in sharing their ideas and opinions in classroom discussion and deliberation (Bentrim & Henning, 2022). A sense of belonging will influence students' motivation and persistence in learning (Freeman et al., 2007). The level of support within a learning community is dependent on the strength of the relationships among its members. Xerri, Radford, and Shacklock (Xerri et al., 2018) found that student engagement was significantly influenced by three factors: peer relationships, relationships between instructors and students, and the students' motivation and determination to pursue their academic degrees.

This sort of secure social setting fosters the development of self-confidence, promotes positive emotions, a sense of belonging, and enhances the overall well-being of students. Thus, attention must be paid to fostering closer relationships among students and between instructors and students. To do so, instructors and students, comprising a learning community that fosters a supportive environment, should offer one another emotional, appraisal, instrumental, and informational support (House, 1981). Firstly, emotional support from peers, such as expressions of empathy and care, tends to have a protective effect and be

aassociated with mental well-being and academic adaptation among undergraduates. Then there is appraisal support, which includes offering feedback, and helping students manage challenging situations (Cohen & Wills, 1985). Next, there is instrumental support which involves offering tangible aid to students. Morelli et al. (Morelli et al., 2015) found there was instrumental support only if providers were emotionally engaged during the support-giving process. Finally, there is informational support, which involves giving advice and suggestions (Malecki & Demaray, 2003).

Now, whether these four types of social support actually foster a supportive or conducive learning environment depends on instructors creating and sustaining a positive learning environment, by fostering meaningful social interactions. Within their learning community, students relationship with their instructors matters the most, which turns on whether they perceive their instructors to be honest and benevolent. Instructors perceived to be honest are also seen as sincere and trustworthy, while those perceived to be benevolent will also be seen as being genuinely caring about student well-being (Snijders et al., 2022).

With the inclusion of gen-AI in the learning equation, a supportive learning community can exceed itself to become a community of inquiry in which gen-AI speeds up learning and promotes critical thinking. For Garrison, Anderson, and Archer (Garrison et al., 2000), educational encounters within a community of inquiry ought to be characterized by: cognitive, social, and teaching presence. First, cognitive presence is the extent to which students can construct meaning in their learning through collaboration, communication, and reflection, which ought to advance their sense of self-efficacy. In collaborative learning settings, students working in groups acquire the skills of collectively building knowledge and constructing meanings through shared cognitive experiences (Chan, 2012). Next, there is social presence, which involves student's ability to authentically express themselves when interacting with others in the community. This relates to their comfort level within the community of inquiry, their capacity to freely express themselves, and their participation in a meaningful learning experience with emotional support from one's group members (Singh et al., 2022). Finally, teaching presence is related to the design of the educational experience and the facilitation process. The former is created through the selection, organization, and delivery of course content, learning activities, and assessments. And the latter involves guiding and supporting students in their learning journey through a well-defined process, promoting active participation, overseeing discussions, and cultivating collaboration among students. During the facilitation process, students receive appraisal, instrumental, and informational support from the course instructor. With these three presences in place in a community of inquiry, students will develop self-efficacy, positive emotional experiences, a feeling of belonging, and an overall sense of well-being, which conduce to authentic learning,

5. Discussion

This paper contributes to the discussion about authentic learning by providing a

theoretical framework that incorporates gen-AI into that process itself. However, given that ChatGPT was launched only in November 2022, trying to gather empirical data to test this framework is not yet possible. But as gen-AI applications become better and better with ever more widespread use, it is essential for both students and instructors stay current in their understanding and utilization of this technology. Instructors ought to proactively integrate gen-AI into their course delivery instead of focusing primarily on rooting out plagiarism and cheating. Still some attention must be paid to the unethical use of gen-AI in the classroom. In a 64-page document, UNESCO advocated for the avoidance of gen-AI applications that could hinder learners from developing cognitive abilities and social skills. The Colorado School of Mines issued a statement promoting the responsible utilization of gen-AI, emphasizing the building of trust and fostering a sense of community among students. The statement also advocates for guaranteeing fair access to gen-AI, clearly communicating instructor expectations and the relevance of course tasks, and creating assignments that ensure human involvement in learning. In my undergraduate Organizational Behavior course at a university school of business, I provide my students with the following statement concerning the use of gen-AI: "You are permitted to use generative AI in your research. However, it is mandatory for you to check the accuracy of the information provided by the generative AI you use by citing the actual sources of that information. No generative AI tool may be cited as your source of that information. If you have employed any generative AI in your research, you must furnish a declaration at the end of your submission that acknowledges such usage, i.e., 'I declare that I did use generative AI in my research for this submission.' The written assignment should demonstrate your own analysis based on the requirements of the assignments. You are not permitted to use generative AI tools to complete your assignments. Please ensure each assignment that you submit is truly your own work."

To evaluate the efficacy of my course assignments and in-class learning tasks in promoting authentic learning among my students, I have personally used gen-AI to complete those assignments and tasks in advance. The objective was to understand how gen-AI would handle these tasks and identify areas in which its assistance might be less than effective. My initial observation is that gen-AI tends to be less effective with certain types of tasks, particularly those that:

1) require the student to apply to a specific concrete situation the concepts, theories, or frameworks that they had learned previously; and/or

2) involve students recalling their personal experiences and analyzing them; and/or

3) require a deeper understanding of specific contextual factors; and/or

4) demand a tacit understanding of unstated contextual factors; and/or

5) necessitate an understanding of subtle nuances present in a written text, and/or

6) entail collaborative efforts from team members to decide on controversial

issues.

My students were informed that I had used gen-AI to complete various course assignments, and I encouraged them to surpass and outperform gen-AI in completing their own assignments.

6. Conclusion

As gen-AI becomes increasingly accessible, students will need to develop the necessary cognitive skillsets to evaluate the information that gen-AI provides and transcend it by being better critical and creative thinkers. In a gen-AI enabled world, students must learn to be agile in their thinking, pose relevant queries to gen-AI, assess its returns critically, and participate in thoughtful, nuanced discussions for authentic learning. Gen-AI must be harnessed to help in fostering a growth mindset that cultivates new perspectives, guides continuous learning, and promotes adaptation. Beyond individual effort, students should also learn to be good collaborators in sharing knowledge with others and expanding upon one another's ideas as co-learners. Gen-AI can potentially benefit education by amping up student participation and engagement in the learning process if instructors conscientiously reconfigure their course designs and reengineer their pedagogies. In the traditional classroom setting, student participation or student engagement may be merely superficial exercises devoid of authentic engagement. Engaging students in group learning activities may not necessarily result in fruitful collaborative learning, as team interactions might be confined to basic information exchange, sharing of ideas, and clarification of information. Authentic learning, on the other hand, is to be found within an inclusive and respectful community of inquiry in which there is interpersonal interaction and meaningful deliberation on ideas and viewpoints. Instructors ought to be exploring innovative pedagogical strategies that incorporate the use of gen-AI to design authentic learning activities, assignments, and assessments that truly reflect real-world situations. These pedagogical approaches may well include the flipped classroom, inquiry-based learning, and collaborative learning, which have been discussed elsewhere (Lang, 2017, 2021). By guiding students toward deeper learning through collaborative team processes within communities of inquiry, instructors can help connect abstract concepts to their practical applications in the real world. While it is the duty of instructors to create and deliver authentic learning activities, it is the duty of students to respond effectively to such changes in the modes of learning their instructors may design for them for authentic learning.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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