Augmenting Case-Based Learning: Exploring the Pedagogical Value of AI-Human Co-Creation in Teaching Business Ethics and Innovation

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***Abstract*—** In the evolving landscape of business education, the case study method remains a cornerstone of experiential learning, yet it faces increasing challenges of scale, contextual relevance, and emotional engagement. This qualitative study explores the potential of AI-human co-created, or "augmented," case studies in enhancing student learning in two ethically complex domains: business ethics and innovation. Drawing on four semesters of teaching MBA and entrepreneurship courses at two Iranian universities, the study compares three formats—traditional instructor-authored cases, fully AI-generated cases, and AI-augmented cases. Through classroom observations, informal interviews, and reflective analysis, the findings reveal that augmented cases consistently outperformed the others in narrative resonance, reflective engagement, and instructional agility. Unlike AI-only outputs, which often lacked depth, or personal cases limited by scope, augmented cases offered scalable, emotionally compelling, and culturally grounded learning experiences. This paper contributes to the literature on hybrid intelligence in pedagogy and presents a replicable model for educators seeking to harness generative AI as a creative collaborator in case-based teaching. It concludes by reimagining the instructor's role as a curator of learning narratives and calls for broader adoption of AI-assisted case design in global business education contexts.

***Keywords*—** AI-augmented case studies, Business ethics education, Innovation pedagogy, Hybrid intelligence in teaching, Experiential learning design.

I. Introduction

In business education, few pedagogical tools have stood the test of time quite like the case study method. Its ability to place students in the shoes of decision-makers, navigating complex trade-offs and moral quandaries, remains one of the most effective ways to simulate the messy realities of organizational life. However, even this stalwart of experiential learning is not immune to the pressures of a rapidly evolving educational landscape—especially amid the rising tide of digital transformation and artificial intelligence (AI) in academia. While generative AI, particularly large language models (LLMs), has swiftly permeated educational practice—from automated grading to personalized tutoring—its deeper potential in content co-creation, especially within the realm of case-based learning, remains vastly underexplored.

This study sets out to fill that gap. It examines how AI-human co-created case studies—what we term "augmented case studies"—can enhance student learning in two conceptually demanding and ethically sensitive domains: business ethics and innovation in entrepreneurship. Based on four semesters of field research involving 105 MBA and entrepreneurship students in two Iranian universities, this paper presents empirical insights into how AI-augmented case studies compare with both traditional, instructor-written cases and fully AI-generated ones in terms of pedagogical impact, student engagement, and instructional agility.

The crux of this inquiry lies in rethinking the educator's role—not as a sole architect of classroom content, but as a curator, editor, and co-creator who works in tandem with AI to design more diverse, relevant, and human-centered learning experiences. As generative AI continues to evolve, it challenges long-held assumptions about authorship, creativity, and educational labor. Yet it also opens new pedagogical possibilities: educators can now design high-quality case studies more efficiently, tailor them to specific cultural or contextual needs, and even infuse a degree of novelty or humor that enhances classroom dynamics. However, as we shall argue, the quality of these augmented cases—and their impact on learning—hinges on a deliberate, iterative, and humanizing process that transforms LLM outputs into emotionally resonant, cognitively engaging narratives.

This study emerged from a pragmatic need: to teach business ethics and innovation courses more dynamically, responsively, and engagingly—without sacrificing depth or quality. Between 2021 and 2024, the author conducted a series of teaching experiments across four semesters at two Iranian universities, integrating three case development modes: (1) traditional human-authored personal case studies; (2) fully AI-generated cases prompted and refined by the instructor; and (3) AI-augmented co-created cases, in which the instructor developed the original idea, had the LLM elaborate it, and then revised and localized the narrative for cultural and pedagogical relevance. Through qualitative methods (student interviews, reflection papers, classroom observations) we evaluated how each mode performed across a range of indicators. The consistent pattern that emerged was that augmented case studies outperformed both other types—not only in cognitive impact, but also in emotional resonance,

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perceived realism, and student enjoyment.

This paper contributes to the fields of management education, AI-assisted pedagogy, and case-based learning in several important ways. First, it offers one of the first empirical studies of LLM-augmented case design in higher education, moving beyond theoretical speculation to evidence-based insights. Second, it reframes the case-writing process itself as a form of human-AI collaboration, illustrating a replicable, iterative workflow that educators can adopt across disciplines. Third, it brings a culturally situated perspective from a non-Western educational context, expanding the global discourse on AI in the classroom and challenging the assumption that educational innovation is confined to technologically advanced or resource-rich environments.

In a world where content is increasingly commodified and attention spans are fragmented, the ability to produce timely, engaging, and ethically relevant learning materials at scale is no longer a luxury—it is a pedagogical imperative. AI offers a new set of tools toward that goal. But the value of those tools depends, ultimately, on how humans choose to wield them. This paper is, above all, an invitation to rethink what it means to teach, to create, and to learn in the age of intelligent machines.

II. Literature Review

The case method has long served as the cornerstone of business education, offering students a simulated environment to navigate real-world complexity. Its origins in Harvard Business School's early 20th-century pedagogy [1] have since expanded globally, positioning cases as tools for applied reasoning, ethical reflection, and innovation strategy formulation. Yet despite its enduring relevance, the method is not without critique. Case development is time-consuming, often lacks contextual diversity [2], and can become outdated in fast-evolving fields like entrepreneurship and technology ethics.

Recent critiques also emphasize the "thinness" of many case narratives when it comes to ethical nuance and cultural realism [3]. This is particularly problematic in non-Western contexts, where imported case materials fail to resonate with students's lived realities. Furthermore, the traditional reliance on textbook-style storytelling limits personalization and emotional engagement—both of which are critical for fostering reflective judgment and ethical decision-making [4, 5].

To address these limitations, scholars and educators have begun exploring innovations in case pedagogy. Interactive simulations, live case writing, and student-generated cases [6] have broadened the methodological toolkit. However, these approaches often demand substantial faculty time and institutional support—resources that may not be readily available, especially in resource-constrained or emerging academic settings.

The arrival of generative AI and large language models (LLMs) such as ChatGPT marks a turning point in educational content creation. While much early discourse has focused on issues of academic integrity, a growing body of research is investigating how LLMs can be used positively—especially in curriculum design, tutoring, and instructional augmentation [7]. Studies have begun to demonstrate that, when used thoughtfully, AI can personalize learning, provide scalable feedback, and reduce faculty workload[8, 9].

Despite this momentum, empirical work remains scarce on how LLMs can be integrated into case study pedagogy. The limited literature has explored AI-generated case vignettes [10], but these are often treated as isolated tools rather than components of a collaborative pedagogical process [7]. Moreover, questions of narrative depth, ethical subtlety, and cultural localization in AI-generated texts have yet to be systematically addressed.

The concept of hybrid intelligence—the collaborative interplay between human and machine cognition—offers a valuable lens for examining AI's role in education [11]. Rather than viewing AI as a replacement for human expertise, this perspective emphasizes complementarity: humans provide contextual judgment, emotional nuance, and ethical reasoning, while AI contributes speed, pattern recognition, and linguistic fluency [12, 13]. In this model, the educator functions less as a content provider and more as a creative editor and learning architect.

Co-creation frameworks from design thinking and education [14] also inform our approach. Co-creating with AI mirrors the collaborative design process between instructors and students, where iterative refinement and feedback loops are essential.

Research shows that emotionally compelling stories improve retention, deepen moral reasoning, and enhance critical thinking [15]. AI alone often generates abstract or generic narratives; human editing is required to inject authenticity, tone, and cultural subtlety [16].

Reflective engagement is enhanced when students encounter morally gray scenarios, conflicting stakeholder interests, or unforeseen innovation outcomes [17]. AI-augmented cases can support this by presenting multifaceted dilemmas that are easily customized to provoke class discussion, role-playing, or debate.

III. Methodology

A. Research Design

This study employed a qualitative, exploratory case study design to investigate how different case study formats—traditional human-authored, AI-generated, and AI-human co-created (augmented)—influence teaching and learning dynamics in MBA courses focused on business ethics and innovation in entrepreneurship discipline. Rather than testing predetermined hypotheses, the goal was to explore emergent patterns in student responses, classroom interactions, and pedagogical experiences over the course of four academic semesters.

The approach was grounded in interpretivist epistemology, emphasizing meaning-making in context. Case-based learning,

by its nature, thrives on dialogue, ambiguity, and personal interpretation—making a qualitative method particularly appropriate for capturing the depth and complexity of how students engage with AI-influenced pedagogical materials.

B. Context and Participants

The research took place between 2022 and 2025 across two public universities in Iran, in four separate MBA and entrepreneurship course cohorts. The same instructor (also the author of this study) facilitated all classes, ensuring consistency in teaching style and instructional objectives. Across the four semesters, a total of 105 postgraduate students participated. Each semester introduced one of three distinct case types:

- Traditional Cases: Developed solely by the instructor, often drawing from lived professional experiences or local industry dilemmas.
- AI-Generated Cases: Prompted and written by a large language model (LLM), used with minimal editing.
- AI-Augmented Cases: Developed through an iterative process in which the instructor conceived the case idea, used the LLM to elaborate the content, and then revised and humanized the narrative to enhance cultural resonance, emotional depth, and pedagogical relevance.

Students were not formally divided into groups for research purposes, and no comparative evaluations or control experiments were conducted. Instead, the study relied on naturalistic observation and informal, semi-structured interviews to explore how each case type influenced classroom learning.

C. Data Collection

Three primary qualitative data sources informed this study:

- Classroom Observations: Throughout the teaching of each course, the instructor maintained detailed reflective field notes on classroom dynamics, student reactions, types of questions raised, and moments of peak engagement or confusion. Particular attention was paid to the kinds of dilemmas that triggered moral reasoning, innovative thinking, or emotional responses.
- Student Work and Discussions: Although no formal assessments were collected for research purposes, students submitted reflective writings and participated in group dialogues after each case. These informal materials were reviewed post-semester to identify recurring themes, shifts in reasoning, and moments of surprise, resistance, or ethical conflict.
- Interviews: A total of 11 students were interviewed in an informal and conversational manner. These interviews were not scheduled as part of a structured research protocol but emerged from follow-up conversations with students who had shown notable enthusiasm or critical feedback during the course. The conversations focused on how students perceived each type of case study, which cases they remembered most vividly, and whether the source or style of the case affected their thinking. Despite their informal nature, these interviews proved highly insightful in revealing student preferences, discomforts, and perceptions of learning value.

D. Data Analysis

Analysis followed an inductive thematic approach, drawing from grounded theory principles. After the conclusion of the fourth semester, the instructor reviewed all field notes, discussion summaries, and interview documentation. Initial codes were generated based on repeated language, emotional reactions, or patterns in student reflection. These were then grouped into higher-order categories aligned with three emergent themes:

- Narrative Resonance: Cases that "stuck" with students emotionally or sparked deep discussion.
- Reflective Engagement: Cases that led students to question their assumptions, challenge ethical norms, or connect with personal values.
- Instructional Agility: Observations about the ease or difficulty of producing, customizing, and adapting each case type, from the instructor's perspective.

This iterative coding process was supported by peer debriefing with two fellow educators familiar with the courses, helping to refine interpretations and reduce researcher bias.

E. Ethical Considerations

Although the research was informal and classroom-based, care was taken to maintain ethical sensitivity. students were not informed of the study during the course to avoid influencing behavior. No student identities were recorded or linked to specific opinions. Interviews were conversational and fully voluntary. All reported insights are anonymized, and the instructor was transparent about the use of findings for pedagogical research after course completion.

IV. Finding and Discussion

Use The findings from this study are organized around three thematic insights that emerged across classroom observations, student work, and informal interviews: (1) narrative resonance, (2) reflective engagement, and (3) instructional agility. Together, these themes illuminate the strengths and limitations of each case study approach, while highlighting the unique pedagogical value of AI-human co-created (augmented) cases in teaching ethically and strategically complex material.

A. Narrative Resonance: "The Ones We Remember"

Across all four semesters, a consistent pattern emerged: students more vividly recalled and emotionally connected with augmented case studies. These were the stories they referred to during later sessions, cited in unrelated discussions, and brought up during interviews—often with strong affective reactions. One student said, "That case about the new female CEO and the corrupt supplier—I could see her face in my mind. It felt real. It made me angry, like it wasn't just an

exercise." This case had been co-created through the AI-augmented method: the initial idea came from a local startup's experience, the LLM expanded it into a dilemma-filled narrative, and the instructor added emotional cues, cultural references, and a rich backstory.

In contrast, students found AI-only cases to be less engaging. Although the content was often well-structured and grammatically flawless, it lacked depth. "It felt like reading a Wikipedia story," one student remarked. "The company was there, the decisions were there, but I didn't feel anything." Several students noted that the names and settings felt generic, even when the ethical or strategic issues were relevant.

Instructor-written cases, particularly those drawn from personal consulting experience, occasionally achieved high resonance, especially when localized. However, the main limitation was scale: the small number of such cases made it hard to diversify learning experiences. This often led to repetitiveness or oversaturation of certain industry contexts. Moreover, as they comes from personal experience, they, sometimes did not provide required information for students which make them confused and lost.

The augmented cases thus achieved a unique balance—combining structural clarity and novelty from the LLM with emotional realism and cultural grounding provided by the instructor. This fusion enhanced the *narrative fidelity*, making students more likely to suspend disbelief and immerse themselves in the case.

B. Reflective Engagement: Thinking in the Grey

Another defining characteristic of the augmented cases was their ability to provoke more layered ethical reasoning and reflective debate. The ethical and innovation-related dilemmas embedded in these cases often lacked clear right or wrong answers, pushing students to explore conflicting stakeholder interests, unintended consequences, and value-based tradeoffs.

For example, in a case involving an entrepreneur who must choose between accepting funding from a politically controversial figure or delaying product launch, students expressed conflicting responses—some focused on ethical purity, others on market timing and survival. Several students changed their stance mid-discussion after hearing opposing views. One commented, "I realized I was too idealistic at first. But then I saw how someone else's context made the risk more acceptable."

In contrast, AI-only cases tended to resolve dilemmas too neatly, often ending with a clear moral or business resolution that limited critical tension. This led students to adopt surface-level positions without much deliberation. As one interviewee noted, "It felt like there was an answer the case wanted us to find."

Personal cases, while sometimes richer in complexity, were bound by the instructor's own biases and experiences. In some situations, students deferred to the instructor's implicit "correct answer" rather than exploring the ambiguity. Augmented cases, by contrast, created a safe space for disagreement—they felt less owned by the instructor, and therefore more open to interpretation.

These findings reinforce the theoretical view that constructivist and experiential learning thrives in ambiguity, not certainty. The AI-augmented method provided just enough structure to make the cases accessible, while leaving space for genuine moral and strategic exploration. This enhanced students' sense of ethical agency, a core goal in both business ethics and innovation education.

C. Instructional Agility: Teaching at Scale, Without Sacrificing Depth

From the instructor's perspective, one of the most significant advantages of the augmented approach was its scalability. Traditionally, writing a good case takes hours—sometimes days—especially when it requires realism, character development, and multiple decision points. With the support of an LLM, the instructor could produce a draft in minutes and spend the saved time on critical pedagogical tasks: localization, emotional framing, and aligning the case with course objectives.

This shift in workflow proved especially useful in semesters with higher teaching loads or when needing to address urgent or emerging topics. For example, when a local tech firm faced a public data ethics scandal, the instructor was able to quickly produce a timely, culturally grounded case that echoed real-world events. Students appreciated the relevance: "It felt like this just happened yesterday," said one.

However, the process was not without challenges. The initial drafts from the LLM were often too polished in tone—"too corporate" or "too American," as some students described them. Moreover, the AI occasionally introduced unrealistic stakeholder dynamics or culturally inappropriate references, requiring significant rewriting. Yet rather than viewing these as setbacks, the instructor came to see them as opportunities for creative editing, akin to a film director refining a script.

This shift in perspective—from author to curator and enhancer—allowed for greater responsiveness and creativity in course design. Rather than relying on a few static cases, the instructor could deliver a dynamic, evolving case library tailored to student interests, societal context, and learning needs.

In sum, the findings suggest that AI-augmented case studies uniquely combine emotional engagement, ethical depth, and production efficiency in ways that neither human-only nor AI-only approaches fully achieve. The students responded most favorably when they could feel the realism of the situation, sense the moral stakes, and participate in a debate that was open-ended and culturally situated.

This aligns with recent discussions in AI and education that advocate for hybrid intelligence, where human creativity and machine capabilities co-evolve rather than compete [18, 19]. In the classroom, this means embracing LLMs not as final authors but as narrative partners—tools that support, not replace, the educator's vision.

V. Conclusion and Implications

This study set out to explore the pedagogical value of AI-human co-created (augmented) case studies in the context of teaching business ethics and innovation to MBA students. By drawing on four semesters of teaching experience, classroom observations, and informal student interviews across two Iranian universities, we examined how different approaches to case design—human-authored, AI-generated, and AI-augmented—shaped student engagement, reflective thinking, and instructional effectiveness.

The evidence, though qualitative and exploratory, points clearly to the promise of AI-augmented case design. Among the three methods, augmented cases consistently delivered stronger narrative resonance, deeper reflective engagement, and significantly greater instructional agility. Students responded most powerfully when the case story was grounded in emotional authenticity, situated in a recognizable cultural or ethical dilemma, and allowed for open-ended debate. At the same time, instructors benefited from the ability to produce rich, diverse, and timely learning materials at a much faster pace—without sacrificing depth or relevance.

A. Rethinking the Role of Educators in the Age of AI

One of the most compelling insights from this study concerns the changing role of educators in AI-supported teaching environments. In the traditional model, the instructor is the primary content creator—tasked with designing case studies from scratch, often based on personal or second-hand business knowledge. In the AI-only model, by contrast, the instructor becomes a mere content selector or editor, relying heavily on machine-generated output that may lack pedagogical nuance.

The augmented model offers a more productive middle path: here, the instructor acts as a creative director, initiating the narrative vision, collaborating with the LLM to explore alternative plotlines or stakeholder dynamics, and refining the final product to meet pedagogical goals. This role preserves academic intentionality while leveraging machine speed and narrative variety. It represents a move from authoring to curating, from control to co-creation.

This shift also aligns with broader educational trends that call for more adaptive, inclusive, and context-sensitive teaching materials. In regions like Iran or other emerging economies—where access to high-quality, culturally relevant business cases is limited—AI-augmented case writing may offer a scalable solution to longstanding content gaps.

B. Practical Implications for Educators and Institutions

For instructors in business schools and entrepreneurship programs, this study provides a replicable method for integrating AI-augmented case development into the curriculum:

- Start with a clear pedagogical objective or dilemma. Use your own experience or student interests to frame the moral or strategic tension.
- Prompt the LLM to elaborate the scenario, characters, and conflicts. Don't expect a finished product—expect raw material.
- Revise, localize, and humanize the draft**.** Inject emotional realism, align it with the course context, and design targeted discussion prompts.
- Iterate quickly and diversify. Build a library of cases that span industries, moral challenges, and cultural settings.

Institutions can further support this process by offering faculty development programs in AI literacy for pedagogy, creating internal repositories of augmented cases, and facilitating communities of practice where educators share effective prompts, editing workflows, and teaching outcomes.

C. Theoretical Contribution

While the empirical scope of this study is limited, it contributes conceptually to ongoing conversations in both educational theory and human-AI collaboration. Specifically, it supports the notion of hybrid intelligence as a pedagogical asset, showing that meaningful learning outcomes emerge not from AI alone, but from structured and intentional human-AI co-design. It also adds to the evolving theory of case-based learning by introducing augmentation as a methodological innovation—one that addresses both the emotional limitations of AI and the resource constraints of traditional case writing.

D. Limitations and Future Directions

This study was conducted in a specific cultural and academic context, using qualitative methods and a single-instructor framework. While this provided depth and contextual insight, it limits generalizability. Future research could:

- Involve multiple instructors to compare augmentation styles and outcomes.
- Use pre- and post-intervention studies to measure learning impact more rigorously.
- Explore student co-creation with AI as a further evolution of participatory case design.
- Investigate ethical considerations around AI use in values-based education.

Moreover, as LLMs evolve in sophistication and multilingual capacity, their role in cross-cultural education—especially in non-English speaking regions—warrants deeper investigation.

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