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From Experimentation to Integration: Embedding GenAI in Business Higher Education through the Lens of Constructive Alignment

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Abstract

While emerging literature discusses AI integration in higher education broadly, limited empirical research has examined its practical application and pedagogical impact within business school contexts. This study addresses this gap by analysing 17 cases ofGenAI adoption at a UK Russell Group university during its first year of implementation. Adopting a qualitative case study approach, the research examines current practices of AI integration into the business curriculum, along with the associated benefits, challenges, and influencing factors across cases. The findings suggest that the balance between the pedagogical benefits and associated risks of GenAI use was shaped by the degree of curriculum integration. Constructive integration cases were associated with stronger reported benefits, including student engagement, capability development, and curriculum relevance, while more ad hoc approaches appeared more vulnerable to challenges such as ethical concerns, overreliance, and inequality. The study extends the application of Biggs' theory of constructive alignment in the context of GenAI by showing how AI can be embedded within existing pedagogical strategies without requiring full curriculum redesign. It offers both theoretical insights and practical guidance for aligning GenAI with strategic learning outcomes, supporting more coherent and sustainable adoption in business higher education.

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Practitioner Notes

1. Constructive alignment can help educators connect GenAI use with intended learning aims, teaching activities, and assessment.
2. Embedding generative artificial intelligence into existing pedagogical strategies enhances learning without requiring full curriculum redesign.
3. Fragmented or ad hoc GenAI use increases risks such as overreliance, inequality, and ethical concerns.
4. Constructive GenAI integration approaches can improve student engagement, skill development, and employability outcomes.
5. Institutions should provide clear guidance, staff development, and infrastructure to support sustainable and responsible GenAI integration.

Keywords

generative artificial intelligence, curriculum design, constructive alignment, business higher education

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Introduction

Generative Artificial Intelligence (GenAI) has gained widespread adoption across industries, including higher education (Nikolic, Sandison, et al., 2024). Its ability to generate human-like content from vast datasets has opened new opportunities for innovation, while also raising ethical and pedagogical concerns (Crompton & Burke, 2024; Rashid & Kausik, 2024). In response, universities have begun experimenting with GenAI to develop students' AI literacy and prepare them for a workforce shaped by human-AI collaboration (T. K. F. Chiu, 2024; Hazari, 2024; World Economic Forum, 2025).

Educators play a critical role in shaping how GenAI is integrated into teaching and learning, and their attitudes and practices directly influence institutional adoption strategies and the development of student AI capabilities (Wang et al., 2021; Zhou & Schofield, 2024). Recent evidence suggests that AI is already embedded in students' everyday study practices, but often in ways that do not yet reflect deeper or more critically informed use (Leoste et al., 2024). Large-scale survey evidence indicates that 92% of students report using AI in their learning and 67% use it daily or weekly. However, the most common uses remain searching for information (65%) and getting new ideas or starting a draft (61%), while fewer students report using AI as a learning companion (31%) (Digital Education Council, 2026). At the same time, 65% of students express concern that AI may make learning too shallow and weaken critical thinking and creativity, while sector reports also point to the need for more structured AI literacy support (Digital Education Council, 2026). Together, these patterns suggest that the central challenge is no longer whether students are using AI, but how higher education can guide students towards more purposeful, critical, and educationally valuable use.

The need to integrate AI into courses is increasingly recognised across higher education, both to support responsible use and to prepare students for AI-enabled professional contexts. Recent studies have therefore called for AI learning to be integrated across all levels of the curriculum rather than left as informal or unstructured practice (Leoste et al., 2024). This has been reflected across several dimensions: (1) the use of AI tools is frequently misaligned with learning objectives and intended outcomes (Duron & Jimenez-Preciado, 2025; Eager & Brunton, 2023); (2) there is often a lack of clear guidance and structured progression throughout the student learning journey (Lim et al., 2023; Sidorkin, 2025); and (3) AI literacy is rarely evaluated intentionally or effectively after GenAI tools are introduced into the learning experience (Askarbekuly & Aničić, 2024; Duron & Jimenez-Preciado, 2025). These issues are compounded by uncertainty around graduate expectations and institutional guidance, leading to uneven integration across disciplines (Walter, 2024; Waring, 2024). This concern is sharpened by recent work on AI and cognitive offloading, which suggests that unstructured AI use may allow some learners to bypass essential learning processes, while students with stronger prior knowledge and metacognitive skills are better positioned to use AI in more beneficial ways (Lodge & Loble, 2026). Together, these issues indicate that the challenge is not simply whether AI should be integrated, but how it can be embedded pedagogically in ways that support meaningful learning and reduce uneven outcomes.

Business schools offer a particularly valuable context for examining GenAI integration due to the disciplinary diversity from quantitative analytics to qualitative strategy, which demands adaptable and contextualised pedagogical approaches (Cheng et al., 2024; Plewa et al., 2015). At the same time, business disciplines are at the forefront of AI-driven transformation in industry, with applications emerging in areas such as negotiations, data analysis, sales pitches, and content generation (Gonsalves, 2023). As a result, there is growing pressure for business schools to reflect these technological shifts in their curricula to prepare students for an evolving professional landscape (Duan et al., 2025). Yet, while recent research and sector reports increasingly document widespread student and faculty AI use, empirical evidence on how GenAI is pedagogically integrated in business education, particularly at the level of curriculum design, alignment, and assessment, remains limited.

This study addresses that gap by analysing early cases of GenAI integration in business modules at a UK Russell Group university. It explores how GenAI has been integrated into curricula, what enablers and barriers staff perceive, and what impacts are observed on student learning. The goal is to identify effective strategies for embedding GenAI in business education in ways that align with pedagogical and institutional goals.

The paper proceeds as follows: the next section reviews literature on GenAI in higher education, constructive alignment, and business education; the methodology section outlines the qualitative case study design and analytical approach; the findings section presents patterns of GenAI integration, perceived enablers and barriers, and reported benefits and challenges across cases; the discussion interprets these findings through the lens of constructive alignment, before the paper concludes with implications, limitations, and directions for future research.

Research Questions:

1. How have educators integrated GenAI into the business curriculum?
2. What barriers and enablers do staff perceive in adopting GenAI in their teaching practices?
3. What are the key benefits and challenges of GenAI integration for student learning?

Literature

GenAI in Higher Education and Its Impact

The release of ChatGPT in late 2022 marked a turning point in the integration of Generative AI (GenAI) in higher education. Building on momentum from earlier AI adoption during the COVID-19 pandemic (Crompton & Burke, 2023), institutions have since engaged in widespread experimentation and debate (Chan & Hu, 2023; Kurtz et al., 2024). For example, recent studies have begun examining GenAI's influence on student cognitive development, while on one hand, it is suggested GenAI supports foundational and even higher-order critical thinking through eased cognitive load and self-regulated learning; on the other hand, its limited effectiveness in fostering deeper analytical skills without pedagogical scaffolding and reflective practice has also been highlighted (Essien et al., 2024; Zhou, Teng, et al., 2024).

Despite growing interest, the literature remains student focused. Crompton and Burke (2023) found that only 17% of studies examined educators, and just 11% focused on leadership. This imbalance may explain fragmented implementation and inconsistent outcomes. Recent studies (Aler Tubella et al., 2023; Lee et al., 2024) are beginning to address this gap. For example, in Lee et al.'s (2024) study, educators reported modifying assessments to mitigate AI misuse. These works emphasise that while GenAI tools are increasingly being adopted for administrative and content-generation tasks, such as lesson planning, assessment design, and automated feedback, they also present challenges relating to assessment integrity, workload, and pedagogical coherence (Adiguzel et al., 2023; Nikolic, Wentworth, et al., 2024; Rodrigues et al., 2025; Zhai, 2023).

GenAI is also used to personalise learning and streamline administrative tasks (Rasul et al., 2023; Zhai, 2023). For example, as it is argued in Zhai's research (2023), ChatGPT is effective in generating personalised teaching resources to ensure teaching fits students' personal learning styles and interests, thereby boosting the student-centred approach. Still, concerns persist around academic integrity, overreliance, and misinformation (Vargas-Murillo et al., 2023; Zhou, Zhang, et al., 2024). While some suggest these risks may encourage students to apply critical thinking skills when verifying AI-generated content (Fiialka et al., 2023), many educators remain concerned about the negative impact on academic rigour and the reliability of student outputs (Kurtz et al., 2024; Michel-Villarreal et al., 2023; Vargas-Murillo et al., 2023).

Constructive Alignment and Curriculum Integration of GenAI

Constructive alignment (Biggs, 1996) links intended learning outcomes (ILOs), teaching and learning activities (TLAs), and assessment tasks (ATs) to create coherent curricula. It provides valuable insights to higher education by allowing traditional and structured educational experience links with desired outcomes of work-based disciplines (Walsh, 2007). Constructive alignment has been widely and successfully applied across a range of disciplines and national contexts (Kabouha & Elyas, 2015; Thian et al., 2018; Walsh, 2007). However, challenges arise when alignment is applied in fragmented or superficial ways that neglect the underlying pedagogical intent (Loughlin et al., 2021). The rise of GenAI has prompted calls to reframe integration strategies beyond opportunistic use (T. K. Chiu, 2024; Shailendra et al., 2024). It has been argued that in some disciplines, such as in engineering, educators can sometimes prioritise technical knowledge and skills, overlooking the alignment of learning outcomes (Pereira et al., 2024). Without alignment to outcomes, GenAI risks being adopted as a technological trend rather than a pedagogical tool.

Recent research has begun to propose models and frameworks to guide educators in integrating GenAI into curricula using the principles of constructive alignment. For instance, Pereira et al. (2024) introduced a four-step constructive alignment framework and implemented ChatGPT in the Introduction to Project Management course to align learning outcomes, assessment methods, and active learning activities. However, they acknowledge the need for broader application across subjects to evaluate the framework's effectiveness. Similarly, Schofield and Zhou (2025) proposed a five-step GenAI Curriculum Alignment Model, which extends Biggs' framework by incorporating AI tools into the alignment process, covering stages such as selecting appropriate GenAI technologies and monitoring their impact. These contributions signal growing consensus around embedding GenAI purposefully. However, empirical validation of such models remains limited, and more research is needed to assess their adaptability across disciplines (Duron & Jimenez-Preciado, 2025).

GenAI in Business Education

Despite GenAI's growing use in higher education, research in business education remains sparse. López-Chila et al. (2023) found that out of 870 publications on AI in higher education between 2017 and 2023, only 8% were situated in business, management, or accounting. The majority originated in computer science or engineering. This reflects a broader pattern of uneven GenAI adoption across academic fields (Akhmadieva et al., 2024; Crompton & Burke, 2024), raising questions about the pace and direction of change in business schools. Current research indicates that GenAI integration in business schools tends to centre on postgraduate, tech-driven areas like fintech and analytics (Chen, 2022), often neglecting broader curricular needs at the undergraduate level. The recent AACSB (2024) guidelines for business schools advocate for an objective-oriented and human-centred approach to curriculum design, while also emphasising the need for clear institutional governance in GenAI integration; however, there remains limited empirical evidence demonstrating the effectiveness of these recommendations in practice.

These efforts are typically driven by industry expectations around graduate employability and digital literacy (Essien et al., 2024). Observations of student experiences and learning outcomes in courses where GenAI tools are accessible suggest that students respond more positively to practical, application-based assessments (Xu & Babaian, 2021). While other research also highlights opportunities to use GenAI for critical thinking development and problem-based learning (Essien et al., 2024). Yet these efforts and proposals often remain isolated and conceptual. Educators frequently report encountering barriers such as institutional inertia, unclear policies, or insufficient pedagogical support (Kavalenka & Krivko-Krasko, 2023). These challenges are exacerbated by a lack of discipline-specific guidance on how to design business curricula that meaningfully incorporate AI.

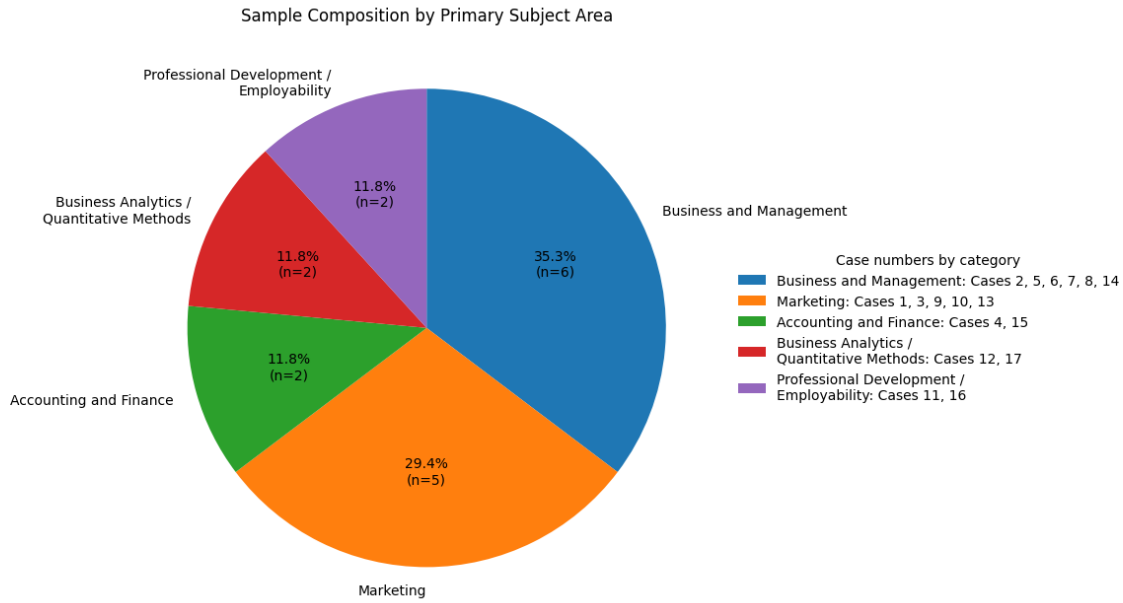
Three main gaps remain: (1) limited understanding of educators' roles in GenAI integration; (2) little empirical evidence on how constructive alignment supports GenAI adoption; and (3) a lack of discipline-specific research linking GenAI with pedagogical priorities in business education. Grounded in Biggs' framework, this study addresses these gaps through a practice-based analysis of GenAI integration in business modules, offering insights into coherent and effective curriculum design.

Method

This study forms part of the project *Creating an open, co-created and co-guided toolkit to support staff integration of AI literacy and skills into the curricula*, funded by the President and Principal's Fund for Education Excellence. Ethical approval for the project was granted in 2024 by the Research Ethics Committee in the School of Business and Management, Queen Mary University of London. The approval covered the collection of primary data from lecturers on their use of AI in teaching, learning, and curriculum design. The study was conducted in accordance with institutional ethical requirements, with participant confidentiality and anonymity maintained throughout. This study investigates how educators embed Generative AI (GenAI) into business curricula, focusing on pedagogical decision-making and curriculum design. A qualitative case study approach was employed, with purposive sampling used to identify participants who had incorporated GenAI into their teaching practices. Seventeen academic staff from a UK Russell Group university were selected based on two criteria: experience using GenAI in teaching and involvement in business-related modules. Participants included lecturers, teaching-focused academics, and programme directors, providing varied perspectives on GenAI adoption. The unit of analysis is the individual educator and their pedagogical approach. These 17 participants contributed insights from 24 business modules spanning undergraduate and postgraduate levels (Levels 3–7), covering a wide range of subject areas, e.g., strategic management, marketing, sustainability, consumer behaviour, financial reporting, and data analytics. This disciplinary and methodological diversity enabled exploration of GenAI integration across different teaching contexts and content types. To provide greater transparency while preserving participant anonymity, Figure 1 summarises the sample by broad subject area, showing the distribution of the 17 cases across the main teaching contexts represented in the study.

Figure 1

Sample Composition by Primary Subject Area



Data were collected through semi-structured interviews conducted via Microsoft Teams. The semi-structured interview schedule covered five main areas: (1) module context and rationale for GenAI integration; (2) approaches to implementation in teaching, learning, and assessment; (3) perceived impact on students, educators, and the curriculum; (4) barriers and enablers of adoption; and (5) reflections and recommendations for future practice. The full interview guide is provided in Appendix A.

Data were analysed thematically using an inductive coding process guided by the study's aims but grounded in participants' narratives (Foroudi & Dennis, 2023). Two authors conducted the interviews and produced case summaries following each interview. The other two authors then led the analysis by reviewing the interview transcripts case by case, coding the data iteratively, and identifying repeated patterns within and across cases. The analysis was organised around a set of parent themes informed by the study aims, namely the use of GenAI, enablers of adoption, barriers of adoption, perceived benefits, and perceived challenges. Within these parent themes, initial codes were generated from the interview data and progressively grouped into broader sub-themes (see Table 1). During this process, the case summaries prepared by the interviewers were revisited to cross-check interpretations, identify any differences in emphasis, and reduce the risk of overlooking important aspects of participants' accounts. As sub-themes emerged, the authors returned repeatedly to the original transcripts to refine the thematic structure and ensure that the analysis remained grounded in the interview data. All coding was conducted manually using Microsoft Excel, facilitating systematic organisation of the dataset and iterative comparison across cases (Ayres et al., 2003).

Table 1

Thematic coding

Parent theme	Code	Sub-theme
Use of GenAI	Self-directed learning assistant Educator-led Learning Activities Learning content co-creation	Pedagogical integration of GenAI
	GenAI tools embedded in the assessment task GenAI tools used towards assessment preparation Assessment and marking rubric creation	Assessment integration of GenAI
	Marking and feedback Administration	Other academic uses
Enablers of adoption	Industry demands Societal preparedness	External enablers
	Institutional encouragement Misconduct mitigation	Institution-centric enablers
	Curriculum branding and promotion Curriculum enhancement Research purpose	Educator-centric enablers
Barriers of adoption	Perceived irrelevance Added complexity for students Early adopter hesitation Ethical and misuse concerns	Educator-centric barriers
	AI hallucination AI tools abundance Function limitation	Tool-centric barriers
	Resource constraints Inadequate guidance and policy	Institution-centric barriers
Perceived benefits	Student performance improvement Enhanced student engagement Skills & employability development Increased student confidence	Student-centric benefits
	Educator performance improvement Efficiency improvement Staff development	Educator-centric benefits
	Curriculum relevance improvement	Curriculum/institution-centric benefits
	Overreliance	Student-centric challenges

Perceived challenges	Inequality Ineffective output Ethical concerns	
	Increased workload Student-lecturer distrust	Educator-centric challenges
	Degree devaluation	Curriculum/institution-centric challenges

The typology of GenAI integration was developed through iterative cross-case comparison. Cases were compared according to the frequency of GenAI use, the breadth of its presence across curriculum elements, and the extent of pedagogical scaffolding surrounding its use. Through this process, three recurring patterns of integration were identified: ad hoc integration, blended integration, and constructive integration. This approach enabled the study to move beyond descriptive accounts of GenAI adoption and to identify broader differences in the degree of pedagogical embedding across cases.

Results

Patterns of GenAI Integration in Curriculum Practice

Interviews revealed that GenAI has been integrated into teaching, assessment, and academic support activities in diverse ways (Table 2). The most consistent application was as a self-directed learning assistant, often coupled with in-class educator-led activities and increasing emphasis on ethical AI use. Some educators used GenAI to update teaching materials or support content creation when existing resources were outdated. A few cases (e.g., Cases 1 and 12) fully embedded GenAI in assessments, requiring students to critically evaluate AI-generated content and co-create with the tools.

Table 1

Case-Level Application of GenAI in Curriculum Practice

	Pedagogical Integration of GenAI			**Assessment Integration of GenAI**			**Other Academic Uses**	
Case number	**Self-directed learning assistant**	**Educator-led learning activities**	**Learning content co-creation**	**GenAI tools embedded in assessment task**	**GenAI tools used towards assessment preparation**	**Assessment and marking rubric creation**	**Marking and feedback**	**Administration**
Case 1	✓	✓		✓	✓			
Case 2	✓	✓			✓			
Case 3	✓	✓	✓		✓			✓
Case 4	✓		✓		✓			
Case 5	✓	✓			✓	✓	✓	
Case 6	✓	✓			✓			
Case 7	✓	✓			✓		✓	

Case 8	✓	✓			✓			
Case 9	✓	✓			✓	✓	✓	
Case 10	✓	✓			✓			✓
Case 11	✓	✓			✓			
Case 12	✓	✓		✓	✓			
Case 13	✓		✓					
Case 14	✓	✓	✓		✓			✓
Case 15	✓	✓	✓		✓			
Case 16	✓	✓			✓			
Case 17	✓	✓	✓					✓

Educators also used GenAI for administrative tasks, including preparing marking rubrics, checking academic integrity, and composing feedback and communications. While integration was widespread, the depth and coherence varied. Two cases reflected sporadic, unaligned use of GenAI. Among the remaining 15 cases, a typology of integration was developed based on frequency, coverage (teaching, learning, assessment), and presence of pedagogical scaffolding (Table 3):

Table 2

Classification of Cases by Level of GenAI Integration in Curriculum

Level of GenAI integration in the curriculum	Description	Cases
Ad hoc integration	GenAI is introduced only sporadically, typically in a single session or task, without explicit pedagogical framing or alignment with broader module outcomes.	Case 4, 13
Blended integration	GenAI is incorporated in some teaching activities and/or assessments in a less consistent manner, without sustained emphasis or integration throughout the module.	Case 3, 5, 6, 7, 9, 10, 14, 15, 17
Constructive integration	GenAI is systematically embedded across teaching, learning, and/or assessment. These modules demonstrated frequent and intentional use of GenAI, accompanied by structured guidance for students and coherent alignment with learning processes or evaluative tasks.	Case 1, 2, 8, 11, 12, 16

Taken together, the criteria used to distinguish these patterns indicate how deeply GenAI had been pedagogically embedded. The distinction between ad hoc, blended, and constructive integration was not simply a matter of how often GenAI appeared in a module, but different degrees to which its use was meaningfully connected to broader curriculum design. In constructively integrated cases, which offered the clearest evidence of stronger constructive alignment, GenAI use was more deliberately connected to intended learning aims, scaffolded through teaching and learning activities, and carried into assessment or evaluative processes.

These cases also showed that more systematic GenAI integration did not usually depend on replacing existing pedagogical models. Rather, GenAI was more often embedded within established approaches. Table 4 presents these cases in greater detail, showing how stronger alignment was achieved through the integration of GenAI within existing curriculum structures.

Table 3

Constructive GenAI Integration into Existing Pedagogical Strategies

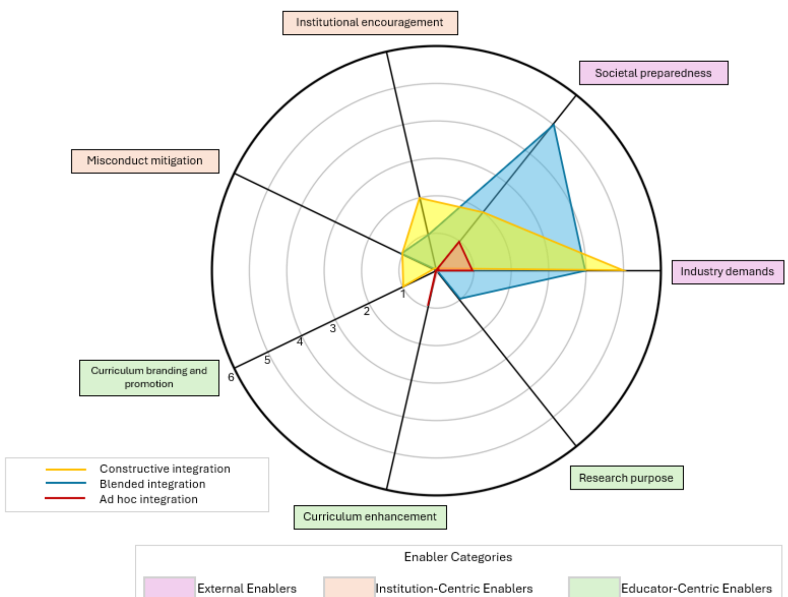
Case	Subject area / module	Pedagogical strategy	ILO / intended capability focus	GenAI-supported learning activity	Assessment / evaluative connection
1	Marketing / live business project module	GenAI augmented Industry-based learning	Application of AI in real business problem-solving; prompt use; critical and ethical awareness in marketing strategy	Students worked on live company projects, used AI tools and prompt skills in workshops and boot camps, and engaged with real business cases and data	AI use was connected to a live business project assessment requiring students to develop AI-informed strategies for companies
2	Strategic management	GenAI augmented Simulation-based learning	Strategic decision-making; analytical skills; prompt design; evaluation of AI-generated solutions	Students translated business data into prompts, used different AI tools to generate options, compared outputs, and reviewed decisions over time in the simulation	AI-supported analysis fed into students' strategic decisions and subsequent evaluation of business performance
8	Live project / project skills	GenAI augmented Project-based and research-supported learning	Research efficiency; information synthesis; higher-order intellectual contribution; ethical use	Students used tools such as Gamma, Elicit, Consensus and Connected Papers to support project profiling, gather evidence, and streamline lower-order tasks while focusing on intellectual input	GenAI supported students' project work and knowledge-building, though the evaluative link appears more indirect than in Cases 1, 2, or 12
11	Careers / employability -related learning	GenAI augmented Reflective and employability-focused learning	Reflection; self-awareness; job analysis; employability development; guided use of AI as a "critical friend"	Students used AI for reflective prompts, role plays, analysing job adverts, and identifying strengths from their own reflections	AI was embedded in preparation and reflective employability tasks, helping students interpret and evaluate career-related evidence
12	Business analytics / working with business data	GenAI augmented Practice-based learning	Data analysis; critical evaluation; comparison of methods; bias and limitation awareness; decision-making	Students were taught prompts for correlation, visualisation, regression, and hypothesis testing, then compared GenAI and Excel outputs in lectures and seminars	Assessment explicitly required students to use both Excel and GenAI, compare results, reflect on limitations and bias, and justify better outcomes
16	Careers / employability -related learning	GenAI augmented Reflective and employability-focused learning	Reflection; self-awareness; job analysis; employability development	AI was used as a scaffold for reflective questioning, employability preparation, and role-based practice	Similar to Case 11, AI supported reflective and preparatory tasks linked to students' career development

Enablers and Barriers in GenAI Integration in Curriculum Practice

Figure 2 presents the frequency of enabling factors across the three levels of GenAI integration. The most consistent driver was external influence, particularly industry expectations. Educators felt a responsibility to align curriculum with market needs: *"It has become essential that marketing graduates are not only aware of these technologies but also proficient in applying them strategically"* (Case 1). Another echoed this industry-aligned motivation: *"Employers are looking for candidates who are AI literate… we must equip students accordingly"* (Case 16).

Figure 2

Enablers of GenAI Integration by Level of Integration

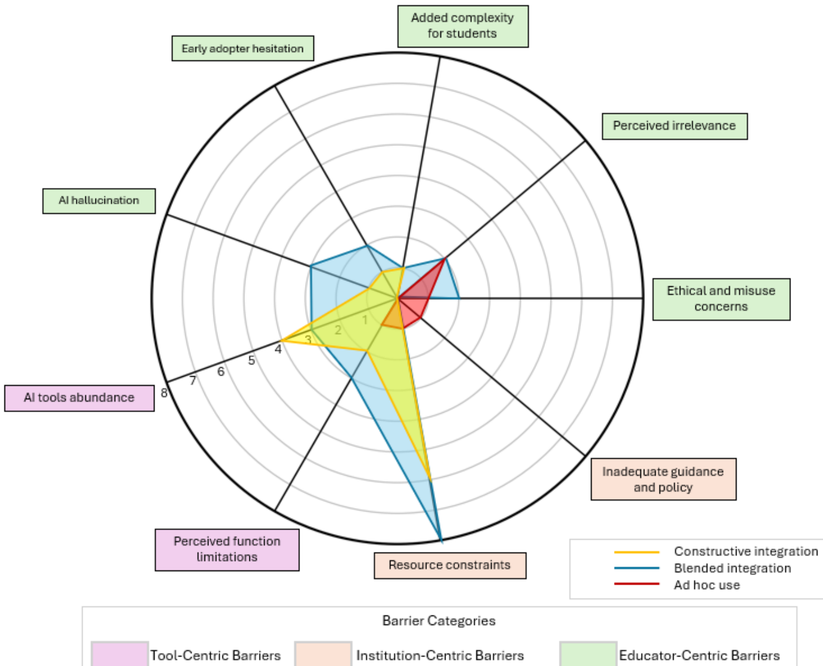


Educators in blended integration cases were motivated but cautious. One stated, *"Prompt writing should be daily practice… something they must know for the job market"* (Case 3). Yet this often translated into advice rather than instructional redesign. Ad hoc adopters showed interest but lacked confidence: *"I'm not an expert in AI tools… I've only used ChatGPT, and I haven't tried others yet"* (Case 4).

Barriers were reported across all levels, with Figure 3 illustrating their distribution. The most prominent was institutional resource constraint, noted in every constructive integration case and most others. These included budget limitations (*"Integrating AI comes at a high cost… we have limited funding"*, Case 15), time pressures (*"I also have to learn how to use it, and teach students how to use it ethically. That's a barrier"*, Case 8), and regulatory bottlenecks (*"We have strict assessment approval processes, so I can't use GenAI there yet"*, Case 17).

Figure 3

Barriers to GenAI Integration by Level of Integration



Tool-related challenges, such as the overabundance and instability of GenAI tools, were cited in advanced cases. *"GenAI is growing so fast… we need to regularly update our content"* (Case 1), and *"So many tools… it might overwhelm students"* (Case 8).

In contrast, educator-centric concerns, such as scepticism and ethical doubt, were more prominent in ad hoc cases. For instance, one educator doubted GenAI's value in accounting: *"Students need to apply international financial reporting standards… they can't just ask ChatGPT for help"* (Case 4). This illustrates how perceived misalignment between subject matter and tool function can limit adoption.

Overall, as shown in Figures 2 and 3, educator scepticism characterises early adoption, while resource and tool-related challenges intensify as integration scales. These findings underscore the need for institutional investment in infrastructure, training, and policy to support meaningful and sustainable GenAI integration.

Benefits and Challenges of GenAI Integration in Business Modules

Educators across the 17 cases identified a wide range of benefits and challenges associated with GenAI integration in business modules. These impacts varied notably by the level of integration and stakeholder group and are summarised in Tables 5 and 6. At the student level, GenAI was widely reported to enhance skills development, engagement, confidence, and overall academic performance. These outcomes were particularly evident in modules with constructive integration, where GenAI was embedded into teaching and assessment processes with clear guidance. Educators also observed that students were more motivated and better prepared for the job market in modules where GenAI supported personalised learning and practical application.

Table 4

GenAI integration benefits across stakeholder groups

Affected Stakeholder	Benefits	Quote
Student	Skills & employability development	Some use their new skills in job interviews, internship, and their dissertations. For example, several students applied Python for data analysis or use ChatGPT to support content creations in marketing campaign." (Case 1)
	Enhanced student engagement	"AI is something that needs to be played and experienced with. How we do that in lessons is interesting. Students wanted to use it in real life." (Case 11)
	Student performance improvement	"Students use AI for their revision, especially for more qualitative subjects. They can just search for additional information, and AI really creates a story behind it to explain the concept." (Case 4)
	Increased student confidence	"So many students told me that they felt more prepared for jobs, especially those in digital marketing data analysis or roles involving AI tools." (Case 1)
Educator	Staff development	Students explore the new AI tools and share with me that which AI tools they find is useful, what is the problem with the tool, and how do they find it and how do they use it. This is really important because it's a co-creation - it's a new areas of new for everybody, staff and students." (Case 12)
	Educator performance improvement	"So in this year, I'm more focused. The first thing we're going to do is to enable the students to try, and if it doesn't work, that's fine. We can accept it as an area of development for next year." (Case 8)
	Efficiency improvement	"I used AI to finalise the feedback. I still go through all of the submissions, and give ideas about what points and comment I want to include in the feedback...I can take time to check my grammar and check my wording and use of AI really helped me to be quickly." (Case 9)
Curriculum/institution	Curriculum relevance improvement	"When I meet prospective students and their parents, we have AI integrated in our program. This is important ... as this is one of the unique selling points of my programme." (Case 2)

For educators, GenAI offered professional development opportunities and pedagogical innovation. Many reported improved focus, efficiency, and co-learning with students, particularly in feedback, assessment design, and curriculum updates. When thoughtfully integrated, GenAI also reduced repetitive tasks and allowed staff to focus on value-added teaching. At the curriculum or institutional level, GenAI integration strengthened programme relevance and market positioning, contributing to curriculum innovation and alignment with industry expectations.

However, these benefits were accompanied by significant challenges. Student-level concerns included overreliance on AI tools, inequality due to access to premium versions, ethical misconduct (e.g., misuse in assessments), and issues with the reliability or appropriateness of AI-generated outputs. These were most prominent in blended or ad hoc integration cases, where pedagogical scaffolding was weaker. For educators, GenAI adoption often introduced a heavier workload, especially when redesigning learning activities or assessments. Institutional barriers, such as lack of policy clarity, approval processes, or access to appropriate tools, further complicated efforts to embed GenAI meaningfully.

Table 5

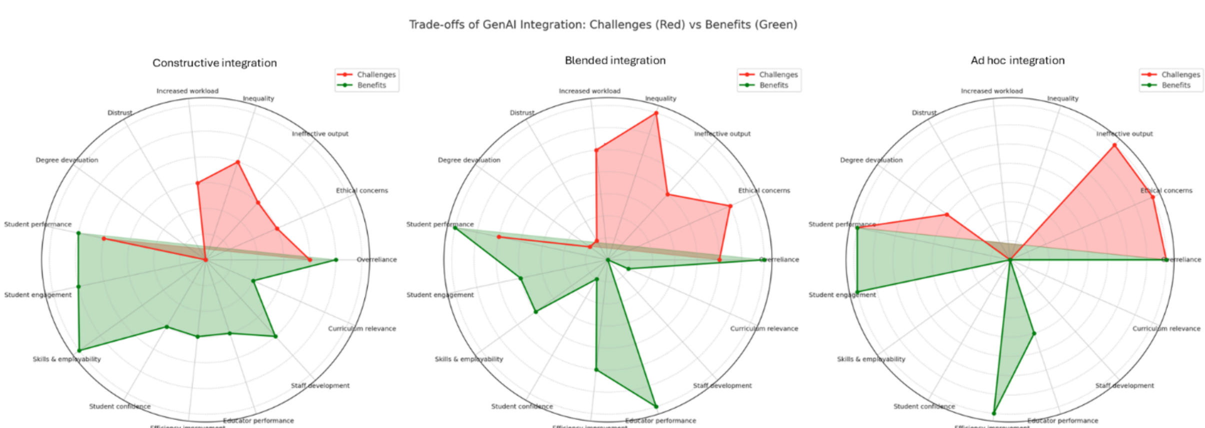
GenAI integration challenges across stakeholder

Affected Stakeholder	Challenges	Quote
Students	Overreliance	"If I use AI to raise the bar of my assessment and my learning expectations to meet those active 80% of the students, how about those 20%? Because the tools are not mandatory to use." (Case 10)
	Inequality	"We know that ChatGPT has a paid version and it is outperforming. But we're trying to use tools that are free. We're very aware of the potential inequality that is happening there." (Case 11)
	Ethical concerns	"Last year I realised a lot of students just simply copied the questions in the generative AI and then copied the answers back to the exam paper." (Case 12)
	Ineffective output	"AI is great, but there are limitations and the personal touch will not be there." (Case 16)
Educator	Increased workload	"As to AI's impacts, I will say that a lot more things, a lot more work we have to do. We have to realign the our learning activities. We have to redesign the assessment activities as well." (Case 2)
Curriculum/Institution	Degree devaluation	"Once students graduate and we give them certificates, we actually ensure that they have achieved the learning outcomes of the program, and they are equipped to go into the industry…if they solely rely on AI to do things, I don't think it justifies the purpose of our degree." (Case 4)

Concerns at the institutional level included the potential devaluation of degrees, particularly if students were perceived to rely excessively on GenAI rather than developing core competencies. To synthesise these variations, Figure 4 presents a radar chart mapping the reported benefits (green) and challenges (red) across the three levels of GenAI integration. Constructively integrated modules demonstrate a more favourable benefit-to-risk profile, suggesting that deep, coherent integration can maximise GenAI's value while minimising negative consequences. In contrast, blended integration and ad hoc uses show inconsistent benefits and more pronounced challenges, especially those related to ethics, output quality, and student dependency.

Figure 4

Trade-offs of GenAI Integration: Challenges (Red) vs Benefits (Green)



Discussion

GenAI Curriculum Integration Practices in Business Modules

In relation to the first research question, the findings showed that educators integrated GenAI into the business curriculum in three main ways: ad hoc integration, blended integration, and constructive integration. The findings suggest that the key difference across the three patterns of GenAI integration was not simply the frequency of use, but the degree of constructive alignment achieved in curriculum practice. In the more systematic cases, GenAI was connected more clearly to intended learning aims, scaffolded through teaching and learning activities, and carried into assessment or evaluative processes. In these cases, capabilities such as critical evaluation, decision-making, disciplinary application, reflective judgement, and employability-related AI literacy were more consistently reinforced through structured learning tasks and evaluative activities. These findings align with the theoretical perspective of constructive alignment (Biggs, 1996; Schofield & Zhou, 2025), affirming that rather than isolated innovation, coherent GenAI integration supports meaningful technology use and deeper student engagement.

In contrast, cases with sporadic or disconnected GenAI integration demonstrated limited student participation, particularly among learners with short-term or outcome-focused motivations. This observation supports existing literature emphasising the critical role of assessment in driving student motivation and learning engagement (Biggs & Tang, 2010). The distinction between the three patterns therefore reflects different degrees of alignment among intended learning aims, teaching and learning activities, and assessment.

Notably, successful GenAI integration commonly occurred within established pedagogical frameworks, such as simulation-based, project-based, or experiential learning environments, suggesting that GenAI acts as a complementary enhancement rather than a disruptive element (Chugh et al., 2023). This extends recent arguments indicating that systematic integration reduces the burden of curriculum redesign while preserving original module objectives (Pereira et al., 2024). It also aligns with Xue's (2020) research finding that educators can be more motivated when engaging technologies does not add workload, which may explain why educators who integrated GenAI into the curriculum, despite being aware of workload pressures, still managed to successfully and deeply embed it. This approach is further consistent with UNESCO's recommendation for AI pedagogy, emphasising reviewing and expanding pedagogical activities based on existing frameworks (Cukurova & Miao, 2024).

Contextualised Motivation and the Role of Institutional Support

In relation to the second research question, the findings indicated that educators' adoption of GenAI was shaped by both external and internal conditions, particularly industry-oriented motivations, disciplinary relevance, and the presence or absence of institutional support. Business educators demonstrated strong awareness of external motivators, notably industry expectations and broader societal trends. Their decisions to integrate GenAI were often driven by the perceived necessity to align curriculum offerings closely with evolving employment market demands. In this sense, external drivers did not simply encourage adoption, but also shaped the kinds of learning aims and capabilities educators prioritised within curriculum design. This finding offers a distinct perspective compared to prior research. For instance, earlier literature primarily highlighted educators' internal motivations, such as enhancing personalised learning experiences or administrative efficiencies, as key drivers for AI adoption (Popenici & Kerr, 2017; Yusuf et al., 2024). This study extends that perspective by suggesting that educators in business disciplines are strongly motivated by externally defined competencies, such as transferable digital literacy and employability skills, echoing the insights provided by Zhou et al. (2020). This external orientation towards industry expectations and career readiness illustrates how disciplinary and professional contexts significantly shape educators' attitudes towards GenAI. The disciplinary and professional contexts further influenced educators' perceptions of GenAI's pedagogical relevance and practical application. Educators teaching modules with strong industry connections, such as marketing, sustainability, and project management, viewed GenAI tools as natural and pragmatic extensions of existing pedagogical frameworks. They demonstrated a clearer sense of how GenAI could enhance their curriculum, bridge theory and practice, and support meaningful, context-relevant learning experiences. This observation aligns with Tondeur et al.'s (2021) assertion that technology integration is more successful when educators can meaningfully relate technological innovation to their specific disciplinary contexts. Moreover, this contextual grounding provided educators with concrete anchors to evaluate and justify GenAI adoption decisions, and to identify where GenAI could support intended learning aims, structured learning activities, and, in stronger cases, assessment design, ultimately supporting both disciplinary coherence and graduate employability outcomes (Mehmet et al., 2015).

Conversely, institutional support emerged as a critical barrier that limited educators' depth of engagement with GenAI. While most integration efforts were initiated individually or through grassroots initiatives, educators frequently identified a lack of structured institutional support, including formal training, clearly articulated policy guidance, and adequate infrastructure, as significant impediments. Such institutional deficiencies constrained educators' abilities to progress beyond initial experimentation toward sustained and comprehensive integration, particularly where this required the more systematic alignment of learning aims, teaching activities, and assessment. This scenario is consistent with findings from Nikolic, Wentworth, et al. (2024) and Kurtz et al. (2024), who emphasise the essential role institutional support plays in transforming individual innovation into systematic, pedagogically sound practices. Without institutional frameworks and supportive environments, educators' capacity for professional growth and confidence in integrating emerging technologies is diminished, leading to fragmented adoption and limiting their ability to embed GenAI coherently across broader curriculum design. The AACSB (2024) underscores the importance of strategic investment in governance and infrastructure as key enablers for effective GenAI adoption, highlighting the need for institutions to proactively facilitate, rather than inadvertently constrain, pedagogical innovation. Overall, motivation and institutional support shaped not only whether educators adopted GenAI, but also how far they were able to align its use with intended learning aims, learning activities, and assessment. With institutional support in place, educators were better able to move from experimentation to aligned constructive integration, consistent with AACSB's emphasis on leadership-driven change, faculty development, and coordinated AI ecosystems rather than isolated individual initiative (AACSB, 2026).

Navigating Benefits and Challenges: The Added Value of GenAI Constructive Integration

In relation to the third research question, the findings suggested that GenAI integration generated both pedagogical benefits and important challenges, and that these were shaped by the coherence of constructive integration. Findings from this study indicate that GenAI integration generates substantial pedagogical benefits, extending to students, educators, and institutions, though accompanied by critical challenges. Importantly, the extent and nature of these benefits and challenges varied according to how coherently GenAI was embedded within curriculum design. Across integration levels, common challenges included student overreliance on GenAI, ethical concerns regarding academic integrity, and limitations related to GenAI's accuracy and output effectiveness. These critical impacts reaffirm the existing literature, confirming ongoing discussions about GenAI's impact on higher education (Crompton & Burke, 2024; Michel-Villarreal et al., 2023; Zhai, 2023). However, the study also suggests that more systematic and coherent embedding of GenAI within curriculum design enhanced its pedagogical value by linking intended learning aims, teaching and learning activities, and assessment more clearly. Modules exhibiting deeper, structured integration reported additional benefits, including increased educator professional development and enhanced curriculum relevance. Furthermore, systematic integration appeared to distribute potential challenges more evenly across stakeholders, making it easier for educators and institutions to predict, mitigate, and manage them proactively. Therefore, although systematic GenAI integration does not eliminate all challenges, it provides a more balanced framework for leveraging its educational potential while maintaining pedagogical coherence and integrity.

Educators benefited notably from professional development opportunities arising from systematic GenAI use. Those employing constructive alignment principles to integrate GenAI reported enhanced understanding of both technological functionalities and their pedagogical implications. Regular engagement with GenAI tools fostered the development of educators' technological pedagogical knowledge, facilitating the creation of more responsive, innovative, and contextually meaningful learning experiences. This was particularly evident where educators moved beyond experimentation and used GenAI to connect intended learning aims more explicitly with classroom tasks and evaluative practice. These findings corroborate Koehler and Mishra's (2005) research, emphasising that effective technology integration occurs at the intersection of technology, pedagogy, and disciplinary content. Additionally, the findings echo Celik's (2023) assertion that meaningful interactions with educational technologies encourage reflective practice and reorientation toward enhanced teaching strategies. Moreover, educators' reflections highlighted strong intrinsic motivation, confidence, and self-efficacy, which are known to significantly enhance technology adoption in pedagogical contexts (Zhou et al., 2020). Curriculum and institutional-level benefits were also pronounced, notably through increased curriculum relevance and marketability. Educators reported that integrating GenAI enhanced the perceived attractiveness and industry alignment of their modules, directly addressing increasing demands for GenAI competencies in the employment market (Mehmet et al., 2025). As students increasingly recognise these skills as essential to career readiness, GenAI integration provided educators and institutions with valuable opportunities to position their modules competitively within higher education markets.

Theoretical and Practical Implications

This study makes several theoretical contributions by contextualising Biggs' constructive alignment theory within the evolving context of generative AI integration in business education. In particular, the findings advance understanding of constructive alignment in the GenAI context by showing that the key differences across cases lay not simply in the presence of AI, but in the degree to which its use was connected to intended learning aims, teaching and learning activities, and assessment. Specifically, the study shows how constructive alignment can inform a practical and incremental approach to GenAI adoption within established curriculum frameworks. Rather than suggesting a complete curriculum overhaul, the findings illustrate that constructive integration can be achieved by embedding AI within existing pedagogical approaches, including project-based, case-based, and industry-linked learning, in ways that maintain coherence across learning aims, teaching activities, and assessment. Consequently, this reinforces the relevance and utility of constructive alignment as a foundational framework for digitally enhanced curriculum design. Secondly, this research provides empirical insights into how GenAI integration influences educator learning, identifying a reciprocal mechanism through which constructive alignment is continuously reinforced. As educators systematically embed GenAI into their teaching, they concurrently develop deeper technological pedagogical knowledge, which subsequently strengthens their capability to further implement constructive alignment principles. Finally, the study addresses a critical gap in the empirical research on systematic GenAI integration within higher education contexts. While existing theoretical models have outlined structured approaches to GenAI adoption, empirical evidence evaluating their practical application remains scarce. By examining cases across three distinct levels of GenAI integration including ad hoc integration, blended integration, and constructive integration, this research provides a nuanced understanding of the practical trade-offs, underscoring the importance of strategically aligning GenAI use with clearly defined pedagogical objectives. In doing so, the study clarifies how constructive alignment helps explain variation in the coherence, benefits, and challenges of GenAI integration in business education.

Practically, this research provides valuable insights for educators and institutional leaders on effective and meaningful GenAI adoption. Findings underscore that educators utilise GenAI not merely as technological novelty, but as a strategic enhancement to pedagogical methods aimed at supporting student learning outcomes and skills development. By deliberately embedding GenAI within existing pedagogical contexts, educators improved student engagement, skill acquisition, and assessment coherence. The study further highlights the importance of contextualised goal setting and decision-making, guiding educators towards intentional GenAI practices informed by disciplinary focus and professional relevance. From an institutional perspective, findings emphasise the necessity of systemic support structures to transition from experimental and fragmented use towards sustainable GenAI integration. To address common barriers, such as limited access to training, insufficient infrastructure, and unclear policies, institutions should strategically invest in resources, staff development, and inclusive digital policies. These findings also provide timely empirical insights in response to the guidelines of AACSB (2024) and UNESCO (Cukurova & Miao, 2024), which call for goal-oriented, human-centred GenAI curriculum design and robust institutional governance. While such recommendations are increasingly shaping business school strategies, this study addresses the current lack of empirical research evaluating how these principles can be effectively enacted in practice. By establishing clear strategic priorities and enabling conditions, universities can empower educators to engage with GenAI confidently, reflectively, and sustainably across the curriculum, thereby supporting more coherent curriculum-level GenAI integration.

Conclusion

This study examined 17 cases of GenAI integration in business higher education, revealing diverse approaches ranging from constructive integration to blended and ad hoc integration. In relation to the three research questions, the findings showed that educators integrated GenAI through varying degrees of pedagogical embedding, that adoption was shaped by a combination of disciplinary, institutional, and employability-related factors, and that the benefits and challenges of GenAI use depended substantially on the coherence of curriculum integration. Overall, the findings highlight that constructively aligned integration, where GenAI use is deliberately connected to learning outcomes, teaching activities, and assessments, yields the most educational benefit. These modules reported stronger student engagement, enhanced skill development, and improved employability, while also managing challenges such as overreliance and inequality more effectively. In this respect, the study contributes to understanding constructive alignment in the GenAI context by showing that differences in integration quality were shaped less by the mere presence of AI than by the degree of pedagogical alignment achieved across the curriculum.

However, the study has several limitations. First, the analysis is based solely on educator perspectives, which may reflect subjective interpretations or limited familiarity with GenAI tools. Future research should incorporate student viewpoints through mixed-method designs to better understand GenAI's impact on learning experiences and outcomes. Second, as a single-institution case study during early-stage adoption, the findings may not be generalisable. Broader, cross-institutional research is needed to explore how contextual factors, such as institutional policy, digital readiness, and disciplinary norms, influence adoption patterns. Finally, given the rapid evolution of GenAI, longitudinal research is necessary to track changes in integration strategies, assess sustained pedagogical impact, and evaluate institutional support over time.

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The authors have not used artificial intelligence in the ideation, design, or write-up of this research as per Crawford et al. (2023), but ChatGPT-4, developed by OpenAI, was used during the editorial preparation of this manuscript. ChatGPT-4 was employed to support proofreading and language enhancement, including improving effectiveness, clarity, refining tone, and correcting grammar. All content generated by ChatGPT-4 was critically reviewed, edited, and approved by the author. The research design, data collection, analysis, and interpretation were conducted independently and without the assistance of AI tools.

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Appendix A. Semi-Structured Interview Guide

1. Module context and introduction
   - Can you briefly describe the module(s) in which you used GenAI?
   - What level is the module and what type of students is it designed for?
   - What kinds of AI-related skills or capabilities were you aiming to develop in this module?

- Which dimensions of AI literacy were relevant in your module, and how were these introduced?

2. Responding to a need

- What issue, challenge, or opportunity led you to introduce GenAI into this module?
- Were you responding to a particular pedagogical need, such as student engagement, progression, employability, or curriculum enhancement?
- Did external factors, such as industry expectations, institutional priorities, or student demand, shape this decision?

3. Approach used

- What GenAI tools did you use in this module?
- How were these tools designed into teaching, learning, and/or assessment?
- What teaching and learning activities were involved?
- How was the approach implemented in practice?
- Did the design involve co-creation, pilot testing, or student participation? If so, how?
- How many dimensions of AI literacy were introduced, and how were they connected to module aims?

4. Impact

- What changed as a result of this approach?
- What impact did you observe on students' learning, engagement, confidence, or skill development?
- What impact, if any, did this have on your own teaching practice or curriculum design?
- Were there any short-term benefits that were immediately visible?
- Were there any medium-term or longer-term outcomes that emerged or were anticipated?
- What forms of evidence, if any, informed your evaluation of impact (e.g. student performance, student feedback, informal observation, progression, satisfaction)?

5. Recommendations and reflections

- What barriers or challenges did you encounter when implementing this approach?
- What important considerations should educators keep in mind when integrating GenAI into similar modules?
- What recommendations would you offer to other educators who want to implement a similar approach?
- Looking back, what would you retain, adapt, or change in future iterations?