

Integrating Generative AI Text Generation Tools into Contemporary Teaching and Learning

Craig Ellis

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From the early 2020's artificial intelligence has become a constant and increasingly visible – and sometimes invisible – presence in our everyday lives. Few areas are experiencing as rapid a transformation as higher education. Among the various forms of generative artificial intelligence (GenAI) – namely text, image, sound, video, and coding generation – text generation tools including *ChatGPT*, *Claude*, *Gemini*, and *DeepSeek* have arguably had the most immediate impact on how higher education institutions approach teaching, and on how students approach learning.

The effective integration of GenAI text generation technologies in contemporary higher education requires careful consideration of how it supports academic staff and students alike. Equitable access to, and training in, the effective use of these technologies additionally requires some deliberation.

As the disruption to all manner of industry from the increasingly ubiquitous nature of GenAI becomes more apparent, this short work examines how GenAI text generation tools are being incorporated into contemporary teaching and learning practice in higher education.

Adapting and Applying GenAI in Higher Education

While a traditional university education has historically emphasised instruction in specialist knowledge, the free access to information online is effectively forcing higher education institutions towards purposefully integrating skills-based training to prepare students for the workforce. To prepare their graduates for workplaces that will inevitably employ various GenAI tools, “it shall be compulsory to have students understand at least basic principles and terminology regarding AI” (Thurzo et al., 2023, p3 as cited in Lee *et al.*, 2024).

GenAI text generation tools are arguably currently the most widely used form of generative AI across higher education and business environments alike. For academics, GenAI text generation tools offer potentially powerful opportunities to improve efficiency and expand teaching capabilities, including by aiding to draft lecture outlines and content; creating structured lesson plans; generating discussion questions and case study scenarios that can stimulate student engagement; drafting different iterations of multiple-choice questions on a given subject area; generating alternative explanations for concepts that challenge individual students; and by and summarising complex readings into accessible explanations for students, among other applications.

Given that academic work is often characterised by heavy workloads involving not only teaching, but also administration, research, and student consultation and feedback, GenAI text generation may be used as a support tool that reduces time spent on repetitive writing tasks. By leveraging the academic's disciplinary and professional expertise, GenAI text generation tools offer the potential to enrich teaching practice by providing diverse ways to present content.

Instead therefore of attempting to prohibit GenAI tools, many higher education institutions are beginning to explore ways of designing assessments that explicitly and transparently incorporate the ethical use of GenAI – that is to say, in ways that preserves academic integrity, transparency, fairness, and intellectual responsibility. Assessment tasks may for example require students to critique GenAI responses for their factual accuracy; reflect on

how GenAI assisted their [the students'] work; re-write an essay or case study drafted completely by GenAI; or demonstrate the entire process behind their [the student's] writing from the prompts used, through the initial GenAI output, to the final submission. Used in this way, GenAI becomes an integral part of the learning process rather than a shortcut that undermines it. In support of this argument Schleicher (2026) goes on to recommend that through appropriate policy and investment, governments can ensure that GenAI is used with intent, to enrich learning and not replace cognitive effort or reduce teacher professional judgement, thereby strengthening teaching and learning while aiding students' development of the GenAI literacy capabilities they will need to succeed in future labour markets and in wider social contexts.

Viewed in this way the integration of GenAI text generation tools into teaching and learning is shifting in what higher education institutions value and assess. Rather than focusing on the final written submission, academic teaching staff now place greater emphasis on the thought processes behind the work. Skills such as critical analysis, creativity, ethical judgement, and the ability to collaborate effectively with GenAI tools are becoming central to learning outcome design.

Technology-Enabled Personalised Learning

The greatest contribution of GenAI to student success in contemporary higher education is arguably its capacity to aid in the design and delivery of personalised learning strategies and materials. Technology-enhanced personalised learning has been demonstrated to be highly effective by various authors including Hooshyar *et al* (2024) and Merino-Campos (2025).

Providing detailed, personalised feedback on assessment tasks can be an extremely time-consuming task for academics, particularly those teaching in large classes. Often times too academics find themselves writing variations of the same comment when multiple students make the same or similar errors. From an educator point of view, GenAI text generation tools can assist academics by helping them draft structured feedback templates or suggesting constructive phrasing that encourages student improvement. Emerging practise in higher education institutions is for GenAI systems that assist academics in analysing student submissions and identifying common areas of misunderstanding, thereby allowing academic staff to adjust instruction accordingly effectively in 'real-time'.

From the student perspective, GenAI text generation tools can function as powerful learning companions. Many students already use GenAI tools to help them understand complex ideas, generate study notes, or organise their thoughts before beginning an assignment. As well as asking GenAI text generation tools to write questions and responses to prompts, students can employ GenAI as an on-demand 'virtual tutor' to explain concepts in different ways until they [the student] understand them. This is particularly valuable in higher education, where students often encounter challenging theoretical material and must develop independent learning skills. Understanding how their tools are being used by students, GenAI text generation platforms including *ChatGPT* and *Gemini* in particular now offer an in-built virtual tutor option for users with a personal account.

Students are also using GenAI text generation tools to generate sample quizzes based on an identified topic, or uploaded materials. As part of a two-part exercise, GenAI is used in part one to generate the quiz without the answer key, and part two – after they have attempted the quiz – is for the student to ask the GenAI tool to generate the answer key including explanations for the correct answers. Students wishing to challenge themselves further are also directing GenAI text generation tools to write quizzes that are more stimulating by incorporating questions that require higher-level thinking (e.g. evaluation, synthesis, analysis), or by including short-answer questions with sample responses.

Similar to their use in creating sample quizzes, students are also using GenAI text generation tools to generate flashcards that can be used to improve memory and active

recall of facts, concepts, or definitions for a less formally structured self-directed learning experience.

GenAI text generation tools can also support students during the writing process. Instead of producing a finished essay immediately, students are using GenAI tools to brainstorm ideas, develop outlines, or generate example arguments that help them clarify their thinking. Academic writing is often one of the most difficult skills for students undertaking higher education to master, and GenAI text generation tools can provide guidance on structure, tone, and clarity. For example, a student might ask the GenAI tool to review a paragraph and suggest improvements to make their argument more coherent.

Another important, yet frequently understated, benefit of GenAI text generation for students is accessibility. Students who struggle with language barriers (e.g. undertaking higher education in a language that is not their native tongue), with learning differences, or unfamiliar academic conventions are likewise finding GenAI text generation tools helpful. Supplementary to explaining complex terminology, simplifying difficult readings, or aiding students transform their ideas into formal academic language, a common application of GenAI text generation for international students is to accurately translate text into the student's native tongue.

Blind Corner. Proceed with Caution

Despite the numerous identified advantages of GenAI text generation tools for teaching and learning, its application is not without challenge nor potential risk.

A primary challenge is that while the educational potential of GenAI text generation tools is significant, its meaningful integration across the higher education sector requires substantial investment in digital infrastructure. In the Australian context and with specific regard to accessibility, ensuring equitable access to GenAI-enabled learning environments is particularly important for less advantaged student groups, including those from low socio-economic backgrounds, rural and regional areas, First Nations students, and students with disabilities. These groups are widely recognised in Australian higher education equity policy as populations that experience structural barriers to participation and success in tertiary education.

Recent national data illustrates the scale of these equity cohorts within the higher education system. According to the Australian Government's *Selected Higher Education Statistics 2024*, there were 165,883 domestic students from low socio-economic (SES) areas and 206,667 students from regional or remote areas enrolled in Australian higher education.¹ The statistics also highlight significant overlap between these groups, namely that over 44% of low-SES students are also from regional or remote areas – thus demonstrating the intersection of economic and geographic disadvantage. These data indicate that a substantial proportion of the national student population faces multiple barriers to participation in technology-enabled learning environments.

In light of these figures and based on current enrolment data, it is reasonable to postulate that up to 500,000 Australian higher education students belong to equity cohorts that may require additional support to participate fully in GenAI-enhanced learning.

Fully supporting these students however requires more than simply providing access to GenAI software. Higher education institutions will also need to ensure access to appropriate hardware, reliable internet connectivity, secure GenAI platforms, updated learning management systems, as well as governance structures and training to support the effective

¹ <https://www.education.gov.au/higher-education-statistics/student-data/selected-higher-education-statistics-2024-student-data/key-findings-2024-higher-education-student-statistics>

and ethical use of GenAI text generation tools. In light of the reported USD17mil investment by California State University in 2025 just to provide nearly half a million students and faculty access to *ChatGPT Edu* – OpenAI’s university-specific version of *ChatGPT* – (Kahn, 2026), the additional cost for higher education institutions, beyond simply providing access to secure GenAI software, is significant and arguably beyond the beyond the immediate capability of most higher education institutions.

Despite however the substantial additional cost to institutions, the estimated additional costs nonetheless reflect the reality that support for GenAI capability is increasingly becoming a foundational element of contemporary educational infrastructure, comparable to libraries (digital or physical), computer labs, digital learning platforms and other supports. Such investment should therefore be understood not simply as expenditure on technology, but as a commitment to educational equity. Without targeted infrastructure and support, the benefits of GenAI-assisted learning may be unevenly distributed, reinforcing existing digital divides rather than reducing them. Strategic investment across the whole of the Australian higher education sector therefore represents an opportunity to ensure that GenAI technologies enhance participation, innovation, and learning outcomes for all students.

Setting aside the risks to academic integrity of GenAI text generation tools, which has been discussed at length elsewhere – including by this author² – a risk of the widespread integration of GenAI-enabled learning is of GenAI replacing students’ skill development rather than supporting it. The OECD’s *Digital Education Outlook* (OECD, 2026) reasons for instance that when GenAI removes the productive struggle essential for learning, students may complete tasks faster and achieve better immediate results, but their understanding may be less deeply consolidated. This can diminish cognitive stamina, deep reading, sustained attention and perseverance. Without a clear pedagogical purpose, GenAI can foster what researchers call “metacognitive laziness” and “cognitive offloading” as students disengage with their studies (Chen et al., 2025, as cited in OECD, 2026, p23).

Whilst avoiding “cognitive offloading”, students must also develop critical awareness when using GenAI text generation tools as these do not always produce accurate or reliable information. For this reason, students are learning to evaluate GenAI outputs carefully and to verify information using credible academic sources. The ability to question, refine, and improve GenAI text generated responses may become an essential academic skill in the future. Quoting from the qualitative comments returned to their survey, Lee *et al* (2024, p7) writes, “Students who learn to use this technology as a genuine tool for learning will fantastically expand their horizons and their potential.” However, “students who use AI to ‘dumb themselves down’ will succeed in doing so”.

² Ellis, C. 2024. ‘You Wouldn’t Steal a Car’, in Whateley, Kopanakis and Bofinger (eds), *UBSS Publication Series: Issue 17, Integrity in Business and Academia*. Sydney: GCA Publications, pp 31-38.

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Professor Craig Ellis is Dean at *Astra Institute of Higher Education* and holds the position of Adjunct Professor at *Universal Business School Sydney*.