

Academic Integrity Issues for Tertiary Music Education Providers in the Era of Generative Artificial Intelligence

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Academic misconduct in the form of contract cheating has attracted significant attention in the media and higher education literature in recent times. While contract cheating is not a new concept, outsourcing academic assessment has become more prevalent or perhaps efficient with advances in information technology. The disruption to on-campus studies due to COVID-19 saw a speedy transition to digital learning and online assessment platforms which increased the opportunity for cheating.

The tertiary sector in Australia continues to be sensitive to the potential threat of the misuse of generative artificial intelligence and industrial-scale cheating. Coaldrake (2023) states that the “rapid enhancement in AI presents significant opportunities to support learning and increase efficiency in a range of ways. Institutions must balance the best way to leverage the benefits while mitigating the risks that generative AI presents to academic integrity.”

In March 2023, *OpenAI* released the latest versions of ChatGPT-4 and GPTplus, an artificial intelligence (AI) program that draws upon a large language database to generate responses from text-based inputs. While AI programs had existed for several years before the release of ChatGPT, the perceived quality and sophistication of its outputs has sparked major academic integrity concerns in the Higher education community about how students might use these tools inappropriately for assessments.

Less than two months after its initial 2022 release, some academics have detected up to one-fifth of students using AI programs in assessment tasks (Cassidy, 2023). The actual rate of student use may already be much higher. A survey of over one thousand university students in January 2023 reported that over one-third were using ChatGPT for assessment writing. Of these students, 75% thought it counted as cheating but did so anyway (Intelligent, 2023). These student behaviours led some universities to ban the use of ChatGPT and prompted some academics to describe such tools as a “threat” and a “plague on education” (Weissman, 2023)

As a language model, ChatGPT is trained on a vast corpus of text data, such as books, articles, and websites, using a technique called unsupervised learning. Sawahel (2023) notes that the *GPT* in ChatGPT stands for “Generative Pretrained Transformer,” which refers to the architecture of the model. GPT models are designed to generate human-like language by predicting the next word in a sequence of text.

The Australian Tertiary Education Quality Standards Agency (TEQSA) does not mandate a particular form of assessment must be used - the *Higher Education Standards Framework (Threshold Standards) 2021* simply requires institutions to assess a student’s knowledge and understanding of the subject. The increasing sophistication of AI might mean that some assessment tasks are redesigned to ensure students cannot substitute student work with material produced by AI. “Redesigning assessments is an appropriate response to the risks posed by AI and is one that TEQSA supports.” (TEQSA, 2023)

Generative AI holds transformative potential for the music industry, acting as a catalyst for creativity and innovation. In this domain, it can create new compositions, generating novel melodies, harmonies and rhythms that can inspire or aid musicians in their work. Marr (2024) states that artists and producers can leverage AI tools to explore diverse musical styles and experiment with unique sounds, thereby expanding the boundaries of musical genres. Moreover, generative AI can personalize music for different audiences, tailoring tracks to individual tastes and preferences. In recent years, we have seen a plethora of AI music

platforms emerge, including Meta's Audiocraft, OpenAI's MuseNet, Soundful, Soundraw, Boomy, Amper and Loudly, among others. These allow anybody to create and customize music.

Using technology in education is nothing new. A bridge between classrooms and real-world experiences, technological advances have helped reshape education in the twenty-first century, changing the roles of faculty and students. Be it the early days of instructional television and radio, or the days of computers and the internet, to the fourth industrial revolution, era of big data, machine learning and AI, technology has been a tremendous boon to education.

AMPA has identified areas that Artificial Intelligence (AI) may be able to affect the academic integrity of the course assessment and delivery.

1. Music creation and composition
2. Aural recognition
3. Academic Research Papers
4. Online Examinations
5. Automated Grading

Music Creation

A number of 2023 startups such as 'Amper Music', 'Ecrett Music', 'Melodrive' and 'Jukedek' have focused on the development of artificial intelligence that is capable of composing music. AI music composers generate original, copyright-free music.

Most of this content sounds very generic and has all of the aural indicators of 'elevator music' that has been similarly mass-produced for decades.

ChatGPT is theoretically capable of generating lyrics for a song, or even complete a song by assigning a title or a theme. It can also be utilized in music to generate melodies and chord progressions or even generate entire compositions. While it can produce music, Koe (2023) further notes that it is not a music composition software nor "a replacement for human creativity" and musical know-how. "It can be used as an inspiration tool or a tool to generate new ideas, but the quality of the output will depend on the input and the specific use-case."

All Music Production and Classical Composition students have a weekly individual 1 hour lesson with a specialist staff member. This personalised relationship has eliminated the significant use of generative AI. It may still be used as a stimulus for an initial idea but then this is developed and uniquely worked on by the student under the staff member's guidance.

Another recent example is where a postgraduate student effectively incorporated AI into their composition process where after composing and recording a song, the vocal mix was uploaded into the 'Grimes' online vocal encoder algorithm and then remixed into the final submission.

The addition of requiring all production and composition students to record the creative process in an Exegesis also allows the appropriate use of AI tools to be incorporated legitimately in their assessment submissions.

Aural Recognition

One of the Assessment tools in Music is the 'Listening Exam'. Students are required to be able to recognise approximately 20 – 30 different works for each unit of study in the academic disciplines of the degree.

It was discovered that the application *Shazam* was being used rather than aurally recognising the works in the assessment.

To render this app useless, AMPA now modifies the pitch and tempo of each piece by +/- 2.5% which doesn't affect human recognition but due to the mathematical algorithm used by

music recognition software this is enough to render the application useless for academic misconduct.

Academic Research Papers

The increasing sophistication of generative AI has further justified AMPA's long-term modification of some assessment tasks to ensure students cannot substitute student work with material produced by AI or other external means.

This has involved incorporating alternatives to traditional research papers such as:

- Structured reflective reports
- specific and personalised research topics
- In class seminar presentations

Like calculator-use or even the use of URLs such as Wikipedia, AI tools must be pre-defined to students and faculty before they can be incorporated or used in classrooms or in research. AMPA has taken the approach to educate rather than outright ban their use.

Online Examinations

AMPA is intentionally moving away from online examinations and returning to f2f on-campus examinations. To reduce the potential for students 'cutting and pasting' text from external digital resources (such as ChatGPT and online texts), AMPA incorporated a limitation in text box entry in the Moodle-based Learning Management System (LMS) *eCon*. Any text that is pasted into the answer fields is automatically highlighted in the assessors' marking view screen.

Automated Grading

AMPA has not utilized the automatic grading functions inherent within *eCon* with the exception of multiple-choice answers. All other forms of assessment are human based. This is also made by the unit lecturer directly and not outsourced to other internal or external staff.

ChatGPT and other AI platforms may threaten academic integrity it is important that music education institutions do not ban it, but instead embrace it and adapt assessment methodologies to protect it from being used to cheat in creative assessments and research tasks.

Higher Education Providers of performing and creative arts programs need to release the ideals of the Conservatoire models, where emphasis is on conserving the ways of the past and instead focus on producing future-ready graduates through an updated suite of holistic 21st Century education assessment tools, whereas Sawahel (2023) recognises that the emphasis is on "developing students' capabilities in ethical and professional use of modern technologies for complex problem-solving through creative and critical thinking."

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