ACGR Good Practice Guidelines for

Generative Artificial Intelligence Use in Graduate Research Training

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AUSTRALIAN COUNCIL OF GRADUATE RESEARCH

About these guidelines

The development and use of AI (Artificial Intelligence) technologies and tools are evolving rapidly. Recent advances in generative AI (GenAI) technologies have accelerated both the access to, and implementation of, AI within research and research training. However, despite the novel and exciting applications of AI, these advances warrant careful consideration of how to adopt these technologies equitably, responsibly, and productively.

Using these guidelines

The ACGR Good Practice Guidelines for Generative AI (GenAI) Use in Graduate Research Training concern activities that are specific to higher degrees by research, that is, to graduate research. The Guidelines, therefore, do not address the use of GenAI in all research or higher education activities. Similarly, the Guidelines are not a comprehensive overview of AI technologies. Accordingly, the advice should be supplemented with other frameworks that support research, teaching, learning, and other contexts within and beyond the institution. Universities Australia has collated a range of resources to support the adoption of AI in universities.

This document is part of a suite of ACGR Good Practice Guidelines, which are designed to support institutions as they develop their strategies and practices around graduate research. These Guidelines support the Australian Graduate Research Good Practice Principles—a set of standards deemed essential to the delivery of graduate research programs.

Guiding Principles

The use of GenAI must be responsible, ethical, and consistent with the core principles of research integrity that appear in the Australian Code for the Responsible Conduct of Research. Universities should empower researchers, supervisors, and candidates to collaborate and to reflect upon how to apply these principles to all research activities.

The use of GenAI should also comply with Australia's AI Ethics Principles, a resource developed by the Department of Industry, Science, and Resources. This framework delineates key principles around the ethical use of GenAI—including the principle that AI tools should benefit humans, society, and the environment, the principle that AI tools should not discriminate against specific individuals or communities, the principle that AI tools should respect privacy, and the principle that people who are responsible for AI systems should be accountable.

Although GenAI can streamline, expedite, personalise, and enhance many activities in graduate research, the risks of this technology are emerging and extensive. First, the

use of GenAI may compromise research integrity, raising questions about authorship, data governance, and responsibility. Second, the use of GenAI may compromise the validity of research, partly because the apparent plausibility of AI responses can belie the inaccuracies of AI output. Third, a reliance on GenAI can impair the development of graduate attributes. Fourth, GenAI can sustain, and even amplify, inequities and discrimination. For example, access to AI tools or education around digital literacy may not be equally available to all graduate researchers, and the data that inform the output of AI tools may be biased. These concerns, coupled with many other risks, were the primary motivations to produce these Guidelines.

The Higher Education Standards Framework outlines expectations of higher education providers on the delivery and management of Higher Degree by Research programs. As the regulating body, the Tertiary Education Quality and Standards Agency (TESQA) guides higher education institutions on the adoption of Gen AI. The Australian Qualification Framework (AQF) outlines the skills, knowledge, and attributes that graduates should demonstrate. GenAI may be utilised to facilitate and enhance, but not to limit or circumvent, the development of these capabilities or how they are assessed.

Recommendations

ACGR makes the following recommendations to universities:

Institutional Governance

1. Ensure that institution governance and management practices encourage and enforce the ethical and responsible use of GenAI in graduate research. This governance and management should include:
    - A clear position on which uses of GenAI are permitted or prohibited in research training—including the responsibilities of researchers, supervisors, and graduate research candidates—coupled with prominent directives that any use of GenAI must be transparent, responsible, and ethical;
    - Assurance that rules, policies, and procedures that govern the use of GenAI in graduate research training comply with relevant legislative, regulatory, and best-practice guidelines;
    - A set of governance and management practices that are designed to prevent the misuse of GenAI, supplemented with policies, procedures, and avenues to monitor, investigate, and report concerns around misuse.

Training and Development

2. Provide current, clear, and accessible information and guidelines on the appropriate and responsible use of GenAI. Such information should:

- Be consistent with overarching institutional rules, policies, procedures, and position statements;
- Be disseminated effectively to graduate research applicants, candidates, supervisors, examiners, industry partners and all staff that support graduate research. These staff include graduate research leaders, assessors, reviewers, library staff, learning advisors, staff in graduate research schools, members of ethics committees, and members of other relevant committees.
- Offer guidance around key concerns, including matters around authorship, copyright, intellectual property, ownership, acknowledgement of GenAI use, as well as the responsibility of individuals to identify, and to not communicate, false, unreliable, or misleading material. This guidance should also encourage uses of GenAI that comply with other relevant codes and requirements, such as the Code for the Responsible Conduct of Research, standards for editorial guidance, and frameworks around data governance.

3. Offer ongoing training and professional development to candidates, supervisors, and other relevant staff on the appropriate, responsible, and effective use of GenAI. At a minimum, this topic should be embedded in inductions, integrity training, and other training of candidates and supervisors. This professional development of candidates and supervisors should:
   - Outline institutional policy rules and positions around the use of GenAI, as well as limitations, risks, and cautions around GenAI in graduate research;
   - Encourage ongoing, interdisciplinary dialogue around developments in GenAI;
   - Encourage candidates and staff across the institution to share successful and responsible uses of GenAI in research, such as use cases or sandboxes where candidates, alongside their supervisors, can experiment with AI tools;
   - Delineate the range of GenAI tools that are available to candidates, supervisors, and other individuals who support graduate research;
   - Disseminate opportunities for further training and development including trusted sources of information on GenAI.

Curriculum Design

4. Ensure that the graduate research curriculum enables candidates to develop and demonstrate the skills, knowledge, and attributes that correspond to the relevant AQF level. This curriculum should include:
   - Opportunities for candidates to develop their capacity to generate original knowledge, to critically locate, synthesise, evaluate, and apply knowledge, to design and conduct research with rigour and independence, and to communicate effectively;

- Graduate attributes or learning outcomes that address digital literacy, including appropriate and responsible engagement with AI technologies that are relevant to the candidate's fields of research;
- Assessment design that evidences appropriate assurance of learning and graduate attributes;
- The procurement and promotion of AI tools that, ethically and responsibly, facilitate the development and critical thinking of candidates—such as tools that help candidates generate ideas, analyse complex data, and write proficiently;
- Sufficient and appropriate resourcing to support this training, development, and procurement of tools that enable excellent pedagogy.

5. Ensure that course progression, plans, and milestones are designed to support early and regular discussion around the benefits, boundaries, and transparency in the use of GenAI. Considerations include:
   - Facilitation of open, transparent, and ongoing discussion between candidates and supervisors on the use of GenAI in graduate research;
   - Early agreement on which uses of GenAI in graduate research are appropriate and inappropriate; these should be recorded in relevant documents, such as agreements between candidates and supervisors, publication plans, and progress reviews.
   - Early agreement between candidates and supervisors on how to declare or acknowledge the use of GenAI in works that have formal status—such as assessments, research proposals, ethics applications, and theses—as well as other works, such as draft documents or emails.
   - Iterative and constructive feedback from supervisors on how candidates may use AI.

Assessment, Thesis Submission and Examination

6. Ensure that assessment and examination requirements provide assurance of learning at the relevant AQF level. Universities should:
   - Consider assessments that complement the thesis or exegesis and enable candidates to demonstrate their autonomy, knowledge, and achievements during the degree, such as an oral examination or *viva voce;*
   - Introduce reasonable measures to confirm that submitted work has been prepared appropriately. Although a range of tools can be applied to identify plagiarised or re-used text in submitted work, these tools cannot as effectively uncover text that was produced by GenAI. Therefore, the principal supervisor should be asked to confirm that, to the best of their knowledge,

the candidates have acknowledged and declared their use of GenAI accurately;

- Provide guidance to supervisors on how they might satisfy themselves that their candidates have used GenAI appropriately. For example, where candidates have declared text to have been corrected but not significantly modified by AI, they can seek evidence such as comparisons of original and modified text. Supervisors and advisory committees should be encouraged to ask candidates to verbally explain material if they are not confident that it is the candidate's work;
- Clarify to candidates, supervisors, assessors, and examiners how the use of AI should be acknowledged in assessments, theses, exegeses, or other submitted works in graduate research:
    - Whenever candidates use GenAI in their research or thesis, they should clearly acknowledge the use of these tools in the document. This acknowledgment should be detailed enough to enable the reader to gauge the extent to which AI had shaped the final product;
    - If candidates had not used GenAI in their research or thesis, they should, to remove any doubt, clearly state that no GenAI had been utilised;
    - Some authors use GenAI to modify or to correct their text or other outputs. A responsible practice is to footnote or acknowledge all content in the thesis that was enhanced by a GenAI tool. If content has been significantly modified, the original, as written or produced by the candidate, can be shown to the supervisors or where appropriate may be included as an addendum.

7. Disseminate clear guidance to any external reviewers or examiners of work that graduate research candidates submit. This guidance should:
    - Clarify University expectations around GenAI use within graduate research to align the expectations of the examiners and the Institution;
    - Advise these individuals not to use GenAI tools to assess the thesis or to prepare the recommend outcomes—and seek written confirmation that they have observed this directive;
    - Discuss privacy concerns and the risks of submitting thesis materials into online tools;
    - Encourage candidates to express any concerns around research integrity in their report, including but not limited to the undeclared use of GenAI.