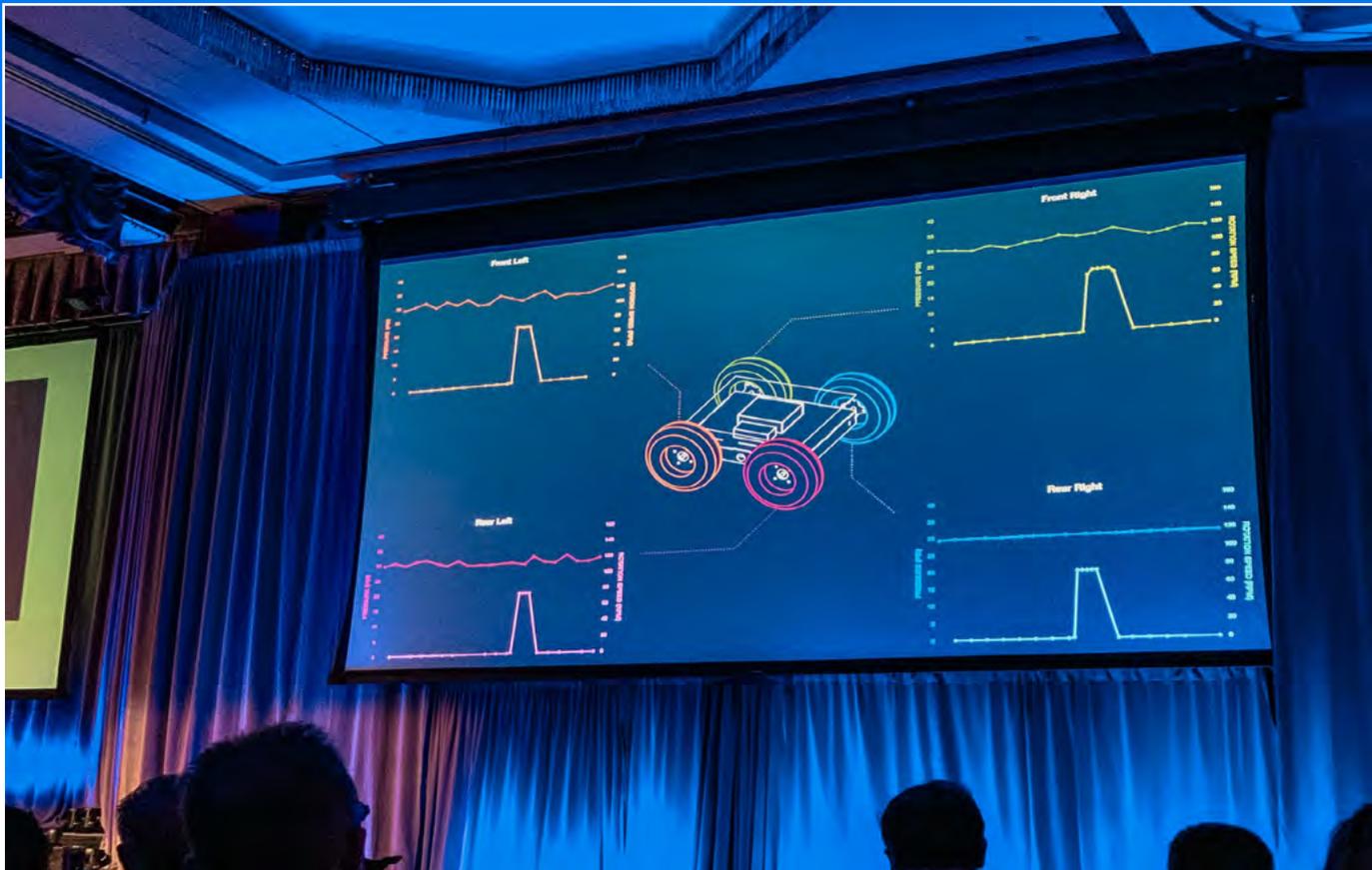


Generative Artificial Intelligence: Guidelines for Educators



QQI

Quality and Qualifications Ireland
Dearbhú Cáilíochta agus Cáilíochtaí Éireann

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Introduction



Introduction

These **Generative Artificial Intelligence (GenAI) Guidelines for Educators** have been developed by a National Academic Integrity Network (NAIN) Working Group, as a response to the swiftly evolving and developing field of GenAI and the challenges that it may pose for academic integrity to educators and their students.

They are designed to help support educators in their understanding of the potential uses of Generative AI, both in supporting learning for their students, and most critically, in providing a potential 'short cut' to students in the fulfilment of required tasks for assessment. The guidelines have been written to provide support and advice for educators to reflect on, and as appropriate, to share and discuss with their students to enable them to understand and appreciate what is and isn't permitted. The overall goal is to enable an understanding of what GenAI can and can't offer, and thereby, to ensure an ethical basis for the use of GenAI tools, helping students to build their own self-awareness and knowledge, and avoid breaches of academic integrity.

The Guidelines are structured so that Part 1 contains a list of Recommendations, classified under the four headings:

- What everyone needs to know
- What lecturers and other educators need to know and do
- What programme managers and institutional leaders need to do
- What students need to know and do

Part 2 provides the detailed guidelines for each of the four headings.

Part 3 provides a list of further reading, links, and resources.

These Guidelines are not intended to replicate what is currently available to educators, but to provide practical advice which can be applied to the design of programmes including assessments, and be incorporated into teaching practice. This area is a dynamic one which is developing at a very fast pace; this means that these Guidelines, which will be published online, may well need to be regularly reviewed and updated.

We hope however that they will provide some practical support for everyone involved in tertiary education and that they will have a positive impact in supporting high quality teaching, learning and assessment policies and practices.

Billy Kelly

Chair, National Academic Integrity Network,
July 2023



NNN



01

Recommendations



Part 1: Recommendations

What everyone needs to know

- 1) Tools which include Artificial Intelligence (AI) can produce impressive outputs, whether well-structured and fluently written reports, images and graphics, computer code, or mathematical solutions. They have a huge potential range of applications.
- 2) This technology is becoming ubiquitous, embedded within major software suites (such as Microsoft Office, Google Workspace, etc) and browsers, and has spurred the development of a large number of new apps and tools proffered by a myriad of start-ups and project teams.
- 3) It is crucially important for everyone to be aware that these tools generally are based on mimicry and reproduction of content, style, and genre and are not always optimised to provide factually correct answers. Nor should their speed, conversational interface, and apparent quality of their output be taken as evidence of any 'intelligence' or subject expertise.
- 4) There are concerns about how the tools are developed and trained (around copyright, intellectual property, wellbeing of those hired to screen and label content, energy usage, etc) as well as how they may be misused or misapplied.
- 5) It is important that everyone is familiar with their current institutional policy on the use of GenAI, bearing that it is likely to be updated on a regular basis.

What lecturers and other educators need to know and do

- 1) Be familiar with these tools and their availability, and recognise their limitations and affordances.
- 2) As soon as you can, review all your assessments, replacing or modifying any which may be completed satisfactorily by someone using AI without an appropriate level of understanding of the subject, or which are vulnerable to breaches of integrity or security. If you identify a particular appropriate role for GenAI in your courses, then ensure that students are aware of what constitutes authorised and unauthorised use.
- 3) Work with colleagues, and within disciplinary communities, to design assessments which have strong validity (i.e., clearly aligned with the learning outcomes and the skills which they are meant to demonstrate) and in which there is an appropriate balance of credit between the process of preparing for and undertaking the assessment and the final product, helping students develop self-efficacy, critical thinking, and a professional disposition.
- 4) Take the opportunity, at programme level, to review overall assessment volume, range of assessment types, and alignment with intended programme outcomes across the complete programme and year cohorts, identifying any vulnerabilities, over-assessment, and opportunities for enhancement.
- 5) Be consistent in your approaches to student training, assessment practice,

and in the implementation of institutional academic integrity policies, data protection, and assessment regulations. There must be clear information for students that unauthorised submission of the output of GenAI as their own work constitutes academic misconduct and will be treated accordingly.

- 6) In your partnership with students, emphasise values such as integrity, trust, and truthfulness as being at the heart of learning, knowledge discovery and creativity.

What programme managers and institutional leaders need to do

- 1) Ensure that there is up-to-date and regular training for all staff and students on academic integrity, AI, and assessment, and that appropriate resources are allocated to this area to ensure that all avail of it.
- 2) Programme leaders should work with colleagues to plan and undertake a comprehensive review of assessment, focusing on validity, range of types, and volume, with a view to enhancing both the programme design and the student learning experience.
- 3) Update, and regularly refresh, policies on academic integrity, including the use of GenAI, and assessment to more effectively reflect and respond to these issues and take the opportunity to reiterate the valuable educational purposes of assessment.
- 4) Develop an institutional ethos and culture which emphasises integrity, honesty, trust, and respect, rather than let the conversations be dominated by suspicion, surveillance, and distrust. Workshops and training events which promote dialogue and engagement can be valuable in this regard.

What students need to know and do

- 1) AI tools are appearing everywhere these days: embedded within packages that are used to write text, produce slide-decks; or in new apps and services that get promoted on social media. They can be useful for many types of tasks, but they also have serious limitations and can give unreliable answers whilst appearing confident and convincing.
- 2) It is crucial to be aware of what these tools can and cannot do, as well as recognise the ethical concerns associated with their development and use.
- 3) Assessment is meant to provide the student with an opportunity to demonstrate achievement of the intended learning outcomes of the module or programme, to the standard required. Lecturers often use assessment tasks as a means of helping students focus on the key knowledge and skills that they need to develop and encourage them to practice and build their confidence. It is important that students submit work that they have produced and acknowledge the sources used, as well as paying close attention to

the requirements of the task and policies on academic integrity.

- 4) In reality, assessment can be stressful, but to maintain integrity (both personal integrity and that of the qualifications), students should resist any attempts to take 'shortcuts' or engage in any form of misconduct (copying, plagiarism, submitting materials produced largely by GenAI, etc). If a student feels unable to complete the assessment for whatever reason, they should discuss this with their lecturer, counsellor, SU Officer or appropriate person and see what alternative arrangements can be made.

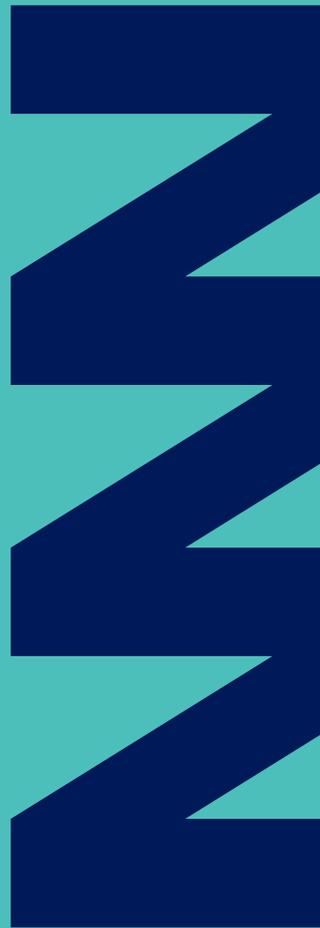


WWW



02

Detailed Guidelines



Part 2: Detailed Guidelines

Recent releases of tools built on ‘Generative AI’ have made headlines across the world. At first glance, their capabilities seem impressive: writing fluent text on any subject, eloquently expressed with excellent structure and grammar; producing visually arresting images in any specified genre; constructing (and explaining) computer code for simple or complex tasks; suggesting statistical tests for data sets and producing a range of analyses; solving mathematical and other symbolic manipulation challenges. Their speed of response, their conversation-like ability to build on previous prompts and answers, and their (superficially, at least) plausible output, however, runs the risk of anthropomorphism and the presumption that behind the scenes there is a nascent, if not fully enacted, ‘intelligence’.

The implications of these tools for assessment are very significant as they run the risk of increasing intentional and unintentional misconduct. In addition, beyond assessment, in the wider world, they may well contribute to the dissemination of misinformation, false accusations, libel, breach of copyright, insertion of erroneous computer code into systems, and other legal and ethical issues. Used well, they could offer benefits for learners, document preparation, media production, and even lead to newer forms of creativity. Clearly, a critical digital literacy which addresses the development and deployment of AI is essential for all of us.

In these guidelines, however, we will focus on assessment and have grouped together key information and suggested courses of action for staff, students, and higher education institutions in the short-term.

What everyone needs to know

- (1) AI is becoming ubiquitous and embedded within more of the tools and software we use in everyday life and in research, learning, and teaching. The pace of change is rapid and it makes sense to anticipate further significant advances over the next few years. Browsers, word-processing packages, spreadsheets, presentation software, audio, imaging, graphics, and video tools are all increasingly making use of such technologies, including core product suites from Microsoft and Google. By default, users of these tools will be presented with ‘suggestions’ on anything which they write or design.
- (2) GenAI tools such as the ‘Large Language Models’ on which ChatGPT, Bard, and others are based, are designed to write well in terms of language, style, and syntax, rather than in terms of whether what they write is factually correct or accurate. It is crucially important to understand how such technologies work and be aware of their limitations as well as their apparent strengths. They are not ‘intelligent’ in any real sense, nor are they experts on topics, but rather largely rely on statistical predictions of word combinations or image features.
- (3) There are also concerns about ethical (and environmental/energy use) aspects in how such tools are developed, trained, and deployed and it is important to be aware of these, particularly with regard the lack of transparency on the information that has been used to ‘train’ the systems and whether copyrighted materials have been used and sources which are heavily biased. Some moves are being made

internationally to consider potential forms of regulation, although quite what shape these will take is very uncertain.

- (4) As technologies develop, appropriate roles in education may be found, but if they are used to bypass rather than support thinking, or used to acquire academic credit which has not been earned via real, intellectual engagement with the subject of study, then they can undermine the educational enterprise. Part of the current challenge for educators, learners, and institutions is to determine the range of beneficial applications which might be afforded by such tools.

What lecturers and other educators need to know and can do

- (1) Ensure that you are aware of recent and new Generative AI tools, including those associated with supporting writing, and others which might be relevant to your particular discipline, such as those which assist the development of computer code, solve mathematical problems, generate graphics, video, and audio content, etc. Try to understand what these tools can and can't do (including by trying them out on your own assignments or subject content), and, in particular, avoid mistakenly attributing subject expertise, intelligence, or capacity for reflection to such software. It is useful also to be aware of ethical and legal concerns over how such tools are developed and used, as well as the potential inequality of differential access (e.g., on the basis of cost).
- (2) Increasingly, educators are sharing use cases of where AI tools might be useful in designing courses, lesson planning, assessment design, student feedback, etc. Whilst as the technology improves, there is no doubt that GenAI will be more useful in many professions and contexts, we still urge caution, particularly in terms of the accuracy of its outputs and the fact that it is largely based on statistical models and hence reproduces or mimics rather than being capable of generating original content. There are many cases where a traditional search strategy (using a search engine or library tools) is much more effective and has the added benefit of identifying original sources and allowing you to make judgements about accuracy and quality as well as to provide due credit to the original authors. This is a key point that should also be included in any training of students about information gathering and research.
- (3) If you are using GenAI tools in your own academic practice, then you should model appropriate use with your students, acknowledge where GenAI has assisted in your work, etc. It is important not to input personal, private, sensitive, or copyrighted materials (including student work) into such tools unless you have appropriate levels of legal guarantees. Many of the freely available tools at the moment do not have such protections in place.

- (4) In designing assessment, it is important to ensure validity, i.e., that assessment should be a means whereby each student demonstrates that they have attained the intended learning outcomes to an appropriate standard and that this should be the basis on which academic credit is awarded.
 - It is important to clarify and reiterate this point with students and to demonstrate how the assessment fits this intention.
 - It may be appropriate to revisit your original learning outcomes to ensure that they are aligned with how you teach, the tasks you set students, and the chosen forms of assessment.
- (5) If you intend for students to use GenAI or AI-supported tools in any assignment, make this clear. It may not be possible to simply state 'do not use AI for this assignment' given the technology's ubiquity, so the emphasis should be on what the student actually does to demonstrate their attainment of the intended learning outcome with which the assignment is aligned. If the student constructs a report or essay through clever 'prompt engineering' which could have been done by anyone not taking this module, then this does not provide the basis for an award of marks or credit. Where students are expected to use AI tools, ensure there is clarity on how and why they used such, with an appropriate declaration on any submitted assignments.
- (6) There will be cases where it is clearly inappropriate to use GenAI and, in those cases, state this clearly in the instructions provided to students and ensure that you are able to make the format of the assessment sufficiently secure and robust.
- (7) Academic Integrity is breached if students submit the products of GenAI as their own work without acknowledgement or without authorisation to use GenAI in fulfilling the task. It is important to ensure that students are informed that this constitutes academic misconduct and that they should only be seeking credit for work which they have produced themselves, and that they are responsible for correctly referencing and acknowledging sources and resources used in their work.
- (8) Review all assessments and assignments in terms of whether or not they are susceptible to being completed successfully by an AI tool without the student having to engage intellectually, or personally, with the subject. Some common types of assessment should be no longer considered to be sufficiently robust to award scores which count towards official grades. These may still be perfectly valuable for self-assessment and formative practice. These include:
 - Take-home essays, reports, or similar documents focused largely on subject knowledge content and with an 'all or nothing' submission by a single deadline and where marks are based on structure, style, and information;

- Online MCQs and other similar types of tests delivered online in un-invigilated and/or remote contexts, whether ‘live’ or asynchronous.
- (9) The capabilities of current AI systems are expanding rapidly, including the advent of plugins and connections with other tools and resources (search engines, mathematical engines, drawing packages, etc). This means that the range of assessment types that it can be used to support (or subvert) is extensive. Tasks such as developing a plan, a strategy, making a case, comparing and contrasting, inventing data for an experiment, plotting graphs, producing a slide deck on a topic, writing code, analysing data in spreadsheets, compiling a list of references, etc, are all within current capabilities. Simply trying to substitute one basic assessment type for another will not be sufficient to counter the challenge to assessment integrity. New assessments and assignments should instead focus on demonstration of personal and academic skills, validity and reliability, authenticity, and security.
- (10) Consider the balance between formative and summative assessment in your modules/courses, and between continuous assessment and examinations.
- Practice and formative feedback are key aspects of learning which can also help students develop self-efficacy and responsibility for their own learning.
 - It may be that you feel that a shift towards more weighting for assessments undertaken in an invigilated examination type environment is the option most readily available to you, at least in the short term, but do try also to consider what might be most educationally valuable alternatives and identify what design assistance or other support would be needed for such.
- (11) Do not rely on GenAI ‘detection systems’. None of the tools which are currently available are fully capable of detecting the use of GenAI (except in the most obvious cases which may also have been identified by expert reading and scrutiny) and may also lead to ‘false positives’ (incorrectly concluding that human-written text was AI-generated) and difficult-to-interpret scoring. Detection systems cannot be relied upon to detect use of GenAI accurately or consistently.
- In addition, there may be serious data protection, privacy, and intellectual property concerns in the use of any such tool, particularly if it has not undergone appropriate approval by institutions.
 - Turnitin’s detection tool is available in some institutions, but users should be aware of concerns about its capabilities in terms of more recent versions of GenAI, a reported high rate of ‘false positives,’ and some ambiguity on how to interpret its results.

(12) Consider what scope there is for assessments which:

- Focus on 'process rather than product'. In other words, where credit is associated with the various tasks or stages that the student goes through in order to lead to the final product. This can be done by breaking down assignments into key stages and incorporating student reflection/reporting on how they found their sources, what aspects they explored, what challenges they overcame, etc (or whatever is appropriate to the particular assignment) so that there is a developmental journey.
- Are clear in terms of whether the emphasis is on the development of writing skills (something the AI tools can do very well) or on understanding of the specific topic and assess each of these with appropriate methods and rubrics.
- Are reflective and based on personal/professional experiences and which are authentic to the discipline or profession. Note that many of the AI tools will readily invent 'reflective' content if so asked, so try to ensure that the task is genuinely connected to the student, or the specifics of particular aspects discussed in class.
- Are in different or multiple formats, such as video or audio content, a mix of presentation (with questions and answers) and ancillary materials (e.g., reference list, handouts), etc. AI tools can produce slide decks and write scripts for video/audio

content, so, again, be careful about the requirements.

- Are based on whether the learning outcomes have been achieved by the student, rather than leading to a grade.
 - Use in-class writing assignments or problem-solving tasks.
 - Are based on, or partially include, an oral component in which the students are asked to answer questions around the topic and how they approached the task. There are many examples where orals have been used successfully, even in large class contexts, and in which there are particular formats (interactive orals for authentic assessment) which align with the discipline or profession. Where it isn't practicable for a very large cohort, at least consider undertaking a number of orals either on the basis of random selection or to clarify any concerns in a particular submission (i.e., this is where the main assignment is an essay, report, video, etc, and the oral is to check on integrity and/or on student understanding).
- (13) Work with colleagues to develop an effective strategy for assessment which ideally would address issues of student (and staff) workload, the scheduling of deadlines/due dates, and ensuring that programme level outcomes are being met.
- We know that academic misconduct can arise when people inappropriately react to:
 - pressure and stress caused by too many overlapping deadlines;

- an amount of routine assessment that is so large, over the course of the semester, that it loses its perceived learning value to the student;
- lack of opportunities for resubmission or development of an assignment after feedback;
- perceived lack of consequence for such behaviour.

(14) Always comply with and follow your institution's academic integrity policy and report any suspected cases. Being consistent in policy implementation is something which will shape students' perceptions about the seriousness of the issue and that the policy is one which focuses on education and the development of professional values, reducing the potential for repeated misconduct and protecting the reputation of qualifications.

What programme managers and institutional leaders need to do

- (1) Ensure that all staff are informed and kept up to date and provide training opportunities for all staff and students on these issues and technologies.
- (2) Review approaches to assessment across programmes to:
 - Identify and replace any existing practices which may be vulnerable to successful completion via the misuse of GenAI;
 - Consider the scope for greater focus on programme level outcomes and assessment, and the overall assessment workload;
- (3) Whilst it might seem that a switch from continuous assessment, coursework, and assignments back to traditional end-of-semester formal examinations is the easiest way to ensure the integrity of assessment this can run counter to the strength of more authentic assessment which aims to develop skills, knowledge in context, and other professional and graduate attributes. A short-term re-weighting of assessments may be necessary to respond quickly to these new challenges, but the longer-term goal should be to take a more holistic approach to assessment as/for/of learning.
 - Develop a clear map of all assessments, assignments, and deadlines for students and staff in the programme or year cohort, and seek opportunities for synergies, rationalisation, and scope for enhancing formative feedback and supporting student development;
 - Establish clear rubrics for assessments and aim for consistency of practice (where appropriate) and alignment with programme outcomes.
- (4) Review policies on academic integrity and assessment to more effectively reflect and respond to these issues and take the opportunity to reiterate the valuable educational purposes of assessment.
- (5) Ensure that appropriate resourcing is available to support academic integrity.

- (6) Refresh study/academic skills supports for students to provide clarity on acceptable as well as unacceptable uses of such technologies.
 - (7) Work as a sector on issues regarding technological developments, data protection, protection of IP, and ethics.
 - (8) Engage with QQI and other awarding or accreditation bodies on these issues and ensure that guidelines and regulations are clear to all staff and students.
 - (9) Foster an institutional ethos and culture (reflected in your communications) which emphasises integrity, honesty, trust, and respect, rather than let the conversations be dominated by suspicion, surveillance, and distrust.
- (2) Ensure that students understand what is required of them for any assignment or assessment, including the extent to which there is any allowable use of such technologies and how this may need to be acknowledged. All assignments and assessments are designed to determine whether students can demonstrate attainment of the specified learning outcomes of their module or programmes. In other words, the credit is awarded for their work not that of others or produced by GenAI systems or obtained from other sources. This means that students need to understand their institution's academic integrity policy and be able to clearly draw the line between what is permissible and what may constitute misconduct.

What students need to know and do

- (1) AI (including so-called GenAI) tools are becoming widely available and embedded in many of the technologies which we use to write documents, analyse data, design presentations and to support learning. It is crucially important to understand how such technologies work and be aware of their limitations as well as their apparent strengths. They are not 'intelligent' in any real sense, nor are they experts on topics, but rather largely rely on statistical predictions of word combinations or image features. There are also concerns about ethical aspects in how such tools are developed, trained, and deployed and it is important to be aware of these.
- (3) Learning is about 'sense-making', about juggling ideas, trying to see where they fit or where they contradict, about rethinking what we thought we already knew, about seeing things in new ways. All of this can be difficult, students can feel vulnerable if something doesn't appear to be immediately obvious to them and they need to put in lots of effort or seek help for things to 'click into place'. It is not a weakness or a sign of lack of ability. It's what university-level education is about, but it should be counter-balanced by the sense of achievement and the new perspectives and skills that students ultimately acquire through this effort.

- (4) If a student is struggling, or feels under pressure, advise them to talk to their lecturers, tutors, SU officers, counsellors, or whoever is most appropriate. Advise them not to take 'short-cuts' with assessments that avoid them properly engaging with the subject, and to resist any the social media and other messages that come in from online 'cheating services' with 'promises of assignment support'. Students need to be encouraged to reach out and ask for support.
- (5) Being a student should be a time in which they can develop new perspectives, learn more about themselves and society, find opportunities to express their passions and creativity, identify where they can engage with community and help make the world a better place. Central to this is living up to values of trust, cooperation, integrity, and truthfulness, all of which are central to education and society.



03



**Further
reading,
links, and
resources**

Part 3: Further reading, links, and resources

In producing these guidelines, we have been informed by a wide range of documents, policies, articles, and other contributions (including webinars, discussions, and conversations) from across the international educational community.

Some particularly useful further reading which we would recommend include:

1. **A Generative AI Primer**, by Michael Webb, JISC National Centre for AI, <https://nationalcentreforai.jiscinvolve.org/wp/2023/05/11/generative-ai-primer/>
2. **AAIN Generative Artificial Intelligence Guidelines**, Australian Academic Integrity Network (AAIN) Generative AI Working Group, March 2023, <https://www.teqsa.gov.au/sites/default/files/2023-04/aain-generative-ai-guidelines.pdf>
3. **Maintaining quality and standards in the ChatGPT era: QAA advice on the opportunities and challenges posed by Generative Artificial Intelligence**, The Quality Assurance Agency for Higher Education 2023, <https://www.qaa.ac.uk/docs/qaa/members/maintaining-quality-and-standards-in-the-chatgpt-era.pdf>
4. **European Commission, Directorate-General for Education, Youth, Sport and Culture, Final report of the Commission expert group on artificial intelligence and data in education and training** – An executive summary, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2766/65087>
5. **Unlocking the Power of Generative AI Models and Systems such as GPT-4 and ChatGPT for Higher Education: A Guide for Students and Lecturers**, Gimpel et al, 2023, https://www.uni-hohenheim.de/uploads/media/23-03-20_Whitepaper_ChatGPT.pdf
6. **Turnitin Guide for approaching AI-generated text in your classroom**, <https://www.turnitin.com/papers/guide-for-approaching-ai-generated-text-in-your-classroom>
7. **101 Creative Ideas to use AI in education**, Nerantzi, C., Abegglen, S., Karatsiori, M. and Martínez-Arboleda, A. (Eds.) (2023) DOI: 10.5281/zenodo.8072950
8. **Five Principles for the Effective Use of Generative AI**, UTS, Sydney, <https://lx.uts.edu.au/collections/artificial-intelligence-in-learning-and-teaching/resources/five-principles-for-effective-ethical-use-generative-ai/>

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