Maintaining quality and standards in the ChatGPT era: QAA advice on the opportunities and challenges posed by Generative Artificial Intelligence

Scope and purpose of this advice

This paper sets out QAA's advice to universities and colleges (hereafter, providers) on how to manage the rapidly increasing use of Generative Artificial Intelligence tools in higher education - and the principles are also applicable in further education. Our focus here is the use of these tools by students and learners. It builds on our initial briefing paper for providers - The rise of artificial intelligence software and potential risks for academic integrity - published in January 2023. This earlier document was concerned with the immediate challenge for academic integrity if students chose to present the output of Generative Artificial Intelligence tools as their own work. It focused on the immediate actions providers could take to support the academic integrity of existing assessments, protect academic standards and inform future practice.

Since then, not only has the technology evolved, but there has been considerable reflection and debate in the sector around how these tools might be used to support academic programmes while maintaining the integrity of awards. This approach is preferable to trying to ban the use of these tools outright. Not only have Generative Artificial Intelligence tools rapidly become ubiquitous but detecting their use is fraught with difficulty - an issue explored in this very helpful blogpost from Jisc.

This paper considers some of these debates in more detail, especially around:

- developing institutional policies to support digital artificial intelligence literacy
- the impact of equity and accessibility for students
- the need to change approaches to assessment in the long term
- the impact in the short term upon awards and progression.

The need for agility

The advice in this paper is current at the time of writing (May 2023) and can be adapted by providers to suit their mission and student cohort or to review existing practices. However, the technology is evolving rapidly and, while recognising there are immediate steps providers will wish to take to secure academic standards, we encourage them to become agile in their response to changes in the scope and capability of these tools. The focus of this paper is on Generative Artificial Intelligence software that outputs text, but the principles may be adapted for other Generative Artificial Intelligence tools - for instance, those that generate mathematical formulae, computer code images and other artifacts.

Higher education in a Generative Artificial Intelligence-enabled world

The rapid rise of Generative Artificial Intelligence software since OpenAI released ChatGPT in November 2022 has far reaching implications for higher education. From initial excitement about the potential for innovative approaches to teaching and learning, through concerns about academic integrity and cheating, to redesigning assessment with artificial intelligence in mind, the sector is grappling with how to adapt to a Generative Artificial Intelligence-enabled world.

Generative Artificial Intelligence tools are based on large language models (LLMs) such as ChatGPT and have been trained with vast databases to write coherent text in a particular style according to the instructions (prompts) given by the user. These LLMs are accessed through interfaces such as ChatGPT and Google Bard which have already found wide application in multiple workplaces and are increasingly being integrated into word-processing and other software tools, and will soon be as ubiquitous as predictive text and grammar-checking software. In March 2023, OpenAI released GPT-4 which has a larger database, faster speed and improved performance across a range of measures, including factual accuracy, compared to GPT-3.

The availability of these tools means that providers are already dealing with a significant number of hybrid submissions in which Generative Artificial Intelligence tools have been used as an assistive technology, to generate initial ideas, or to refine the final submission by correcting grammar/spelling, or removing redundant text to meet a word limit. We are aware that a variety of approaches have been adopted to date - for example, some providers have taken the decision to encourage students in their use of Generative Artificial Intelligence tools, while others have asked that students do not make use of it unless they are given explicit permission to do so.

Taking stock of recent events

Over the past six months, the ability to check facts and authenticate information derived from Generative Artificial Intelligence software has emerged as a key graduate attribute which, if used correctly, has considerable value for current students and their future employability. However, it remains too easy for students to misunderstand how they can use Generative Artificial Intelligence tools and unintentionally breach academic integrity guidelines. In framing guidance for staff and students around the legitimate use of Generative Artificial Intelligence tools, we encourage providers to reflect on the Academic Integrity Charter for UK Higher Education and the seven Principles for Academic Integrity it sets out.

The advice we set out here is not predicated on any position that an autonomous provider may have adopted around the use of Generative Artificial Intelligence software; rather, it is intended to help providers reflect on the steps they have taken to date, to reassure themselves that they are reasonable, proportionate and meet the needs of their whole community. Later in this paper we explore how, in future, providers might refine their position to ensure they evolve sophisticated policies that are appropriate to their teaching and learning strategy.

- **Clear institutional policies** - Within this context providers should have consistent and effective policies that explain how and in what circumstances Generative Artificial Intelligence tools can be used as an assistive technology to support the preparation of student submissions. They should be explicit over how that assistance is acknowledged, what constitutes acceptable academic practice, and take account of the integration of Generative Artificial Intelligence tools into software that is licensed by the provider for student use. Policies should be transparent and clearly communicated to staff and students, emphasising that academic misconduct is unacceptable and that responsibility for the integrity of the submission lies with the student.

- **Policy review and update** - Providers will need to become more agile to adjust their policies rapidly in response to the rate at which artificial intelligence tools are developing and new products are appearing. It will be important to be clear to students about where they can find the most up-to-date guidance. Adding references to the location of up-to-date institutional policies on Generative Artificial Intelligence tools and academic integrity to course materials, such as module handbooks and assessment briefs, can support this.

- **Inappropriate use of Generative Artificial Intelligence tools** - Submissions for assessment that consist only of substantially unmodified output from Generative Artificial Intelligence software may be considered not to be plagiarised using traditional definitions. However, this is very poor academic practice as it does not represent the student's own work. However, given the novel circumstances, it may, in the first instance, be best dealt with through the appropriate student support systems.

- **Academic misconduct and Generative Artificial Intelligence tools** - In cases where an individual persistently exhibits poor academic practice through inappropriate use of Generative Artificial Intelligence tools, such as a lack of evidencing their use of the tools, they may be referred to their provider's academic misconduct procedures. Where a student is suspected of misconduct and has their case managed through academic misconduct processes, the level and extent of the perceived offence, along with any previous offences, should be considered. Some guiding principles can be found in the QAA Member publication: Academic Misconduct Penalties - Advice for providers.

- **Communication with students** - Our advice continues to be to engage early with students to ensure, as a minimum, they are clear about the institutional and individual course expectations around the use of Generative Artificial Intelligence tools. Wider discussions will also be useful about the impact of Generative Artificial Intelligence on the nature of higher education and the value of their qualifications. This engagement with students can be at both a provider-wide and faculty/department level through townhall events and staff/student workshops, and at a course or modular level, including any induction or refresher activities to support virtual learning and digital literacy.

- **Engage and empower students** - Employers will expect (and value) graduates to be familiar with Generative Artificial Intelligence tools when they enter the workforce. It will be important to ensure students are aware of the limitations of these tools and the importance of making ethical use of them. Providers can support students to understand how the tools may not generate information that is factually accurate, even if it appears convincing.

- **Engage and empower staff** - For academic and professional staff to support students, providers should ensure they are familiar with institutional policies and offer opportunities to learn how artificial intelligence tools function and the ways in which delivery and assessments can benefit from redesign to ensure the academic integrity of the awards. This may extend to developing an institutional approach to designing assessment rubrics which reward higher-level skills that are less susceptible to influence by Generative Artificial Intelligence tools.

Managing the assessment of current students

During 2022-23, the rapid development of Generative Artificial Intelligence has run in parallel with preparations for end-of-semester and year assessments. Some of these will already have been adjusted or changed to take account of Generative Artificial Intelligence tools; however, the impact, if any, of the use (permitted or otherwise) on student performance may not yet be clear. Over the coming months there would be an advantage for providers to identify which types of assessments may benefit from (further) adjustment or change to take account of the increasing use of Generative Artificial Intelligence tools, within their own policy framework, and have in place robust internal quality assurance processes that support students and ensure that outcomes are reflective of student achievement.

Here we outline an **indicative four-step process** that can be adapted by providers to meet local needs. It is intended to inform the development of teaching and learning strategies and associated policies in this new era, and to support decision-making about planning of resources that can help course teams adjust the delivery and assessment of their courses.

1. We suggest that module convenors and programme teams review their assessments and highlight to Boards of Examiners instances where there is an unexpected pattern of marks, possibly because the assessment was designed prior to the widespread availability of Generative Artificial Intelligence tools. This will allow Boards, with input from external examiners, to identify any emerging issues and start to consider how these might be addressed in future years.

2. Faced with an atypical pattern of student marks, Boards of Examiners should consider any impact on progression and the overall profile of awards. Providers will wish to collate the information from their Boards to inform institutional policy and practices. We recognise that there is limited scope for providers to take remedial action in respect of students currently under consideration. In principle, providers could adjust the algorithm(s) or alter classification award thresholds, but this may have unintended consequences for students who have either not used Generative Artificial Intelligence tools, or who have used them in good faith according to their understanding of new institutional policies.

3. As soon as it is possible after Boards have completed their work, we would encourage providers to convene follow-up sessions that allow exam board Chairs, quality leads and senior leaders to share their learning and disseminate best practice. This will provide an early opportunity to identify not only the types of assessment that need to change to address the concerns of external stakeholders - for example, professional, statutory and regulatory bodies - but also those that would benefit from adjustment and redesign, and consider the resources that need to be put in place to help course teams make changes for future academic sessions. These may also provide an appropriate forum in which to consider the initial impact of Generative Artificial Intelligence tools on the number and type of cases dealt with through the provider's academic misconduct processes.

4. The normal annual cycle of module and course update is an opportunity to take account of the themes emerging and consider other evidence regarding the impact of Generative Artificial Intelligence tools - for example, student feedback - and make changes for the next session. Changes may include, but are not restricted to, the redesign of some assessments, updating course material and assessment briefs to align with institutional policies, and embedding the discipline-specific use of Generative Artificial Intelligence within teaching programmes.

Planning for the next academic session

The next academic session will be the first in which Generative Artificial Intelligence tools will be widely available to staff and students from the outset. We know from our study of pedagogy during the pandemic that students perform best when the approach to learning, teaching and assessment is linked to a provider-wide strategy. It will therefore be helpful for institutions to put in place, for the start of the next academic session, a strategy for developing digital and critical artificial intelligence literacy among all their students underpinned by refreshed policies around the use of Generative Artificial Intelligence tools informed by consultation with their student body.

In planning their approach, providers may find it useful to consider Maha Bali's definition of critical artificial intelligence literacy; an ability to know how to use artificial intelligence tools, when it is appropriate to do so; and how to critique the credibility and accuracy of their output. Taking time to develop what has already emerged as a key graduate attribute should be regarded as an investment. It will enable students, by the time they graduate, to have the skills and knowledge to use Generative Artificial Intelligence ethically and effectively to support their academic writing. We also note that this process will need to be accelerated for postgraduate taught students.

To build confidence among new and returning students, and to support and embed institutional approaches, providers are encouraged to consider:

- **Accentuating the positive** - A clear statement of the principles of academic integrity at (re)induction including the misuse of Generative Artificial Intelligence tools, could be tempered by an explanation of the many benefits of embracing these tools in a transparent and ethical manner. Examples might include time saved in producing early drafts; conducting rudimentary (for now) literature searches; transcribing and summarising lectures in a student's first language; and helping students prepare final versions of their submissions.

- **Explaining the rules of engagement** - At the same time, refreshed institutional policies, informed by recent experience, around the ethical and responsible use of Generative Artificial Intelligence tools and any intersecting polices - for example, academic misconduct and data protection - should be clearly communicated to new and returning students. This is an opportunity to explain that these policies may need to change at short notice to account for recent technologies or products, and the kind of detailed guidance students should expect from course handbooks and assessment briefs.

- **Equality and accessibility** - As providers integrate Generative Artificial Intelligence tools into their teaching and learning strategies, they will need to consider how students will be able to access the latest versions of the technology and the platforms on which they run. Full consideration will need to be given to those students who cannot afford, or cannot access, paid versions. Failure to do so may exacerbate existing attainment gaps and squander opportunities to provide potentially marginalised groups of students with new tools to support their studies.

- **Supporting international students** - Around the world, governmental, societal and regulatory responses to Generative Artificial Intelligence have been varied. Consequently, learners entering the UK higher education sector from 2023-24 onwards, at both undergraduate and postgraduate level, will have very diverse experiences of Generative Artificial Intelligence tools and, in many cases, their critical Artificial Intelligence literacy will be poorly developed or possibly non-existent. This has implications for the kinds of support international students will require. It also has implications for transnational education and the extent to which students studying for a UK award in another country will have access to Generative Artificial Intelligence tools.

- **A whole community effort** - Updating professional development programmes for postgraduate researchers and staff to include modules that develop critical Artificial Intelligence literacy and how to develop it in others.

What comes next?

The evolution of this technology continues at a brisk pace with new artificial intelligence tools coming online each day. Consequently, for the foreseeable future, providers will be working in a very fluid environment and QAA is committed to working with other sector agencies including Jisc and Advance HE to keep our members updated. In the short-term, we will continue to provide support, including further guidance, while maintaining a focus on future developments with artificial intelligence and how that may impact on teaching, learning and assessment.

We intend to publish our next advice in early July 2023 to focus on reimagining assessment for a Generative Artificial Intelligence-enabled world. Further opportunities for QAA Members to discuss the content of this paper and related topics will be provided and advertised on our website.

Additional resources

QAA resources to support academic integrity and assessment design

QAA's range of resources around academic integrity and the recent webinar series on ChatGPT. QAA Members can also access a wide range of resources that support the design and delivery of meaningful and innovative assessment across digital, in-person and hybrid environments.

External resources

These links are included to aid readers; QAA is not responsible for their content.

- Australian Government Tertiary Education Quality and Standards Agency: Artificial intelligence webpages

- The European Network for Academic Integrity Recommendations on the Ethical Use of Artificial Intelligence in Education

- UNESCO International Institute for Higher Education in Latin America and the Caribbean; ChatGPT and Artificial Intelligence in higher education - Quick start guide

- Wonkhe: Can AI support academic research? The authors, Xianghan and Michael O'Dea, will lead a QAA-sponsored webinar in late June 2023

Opportunities to discuss the use of Generative Artificial Intelligence tools in tertiary education

Keep in touch with our events by checking our Generative Artificial Intelligence webpage and sign up for weekly news in our QAA Member update.

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