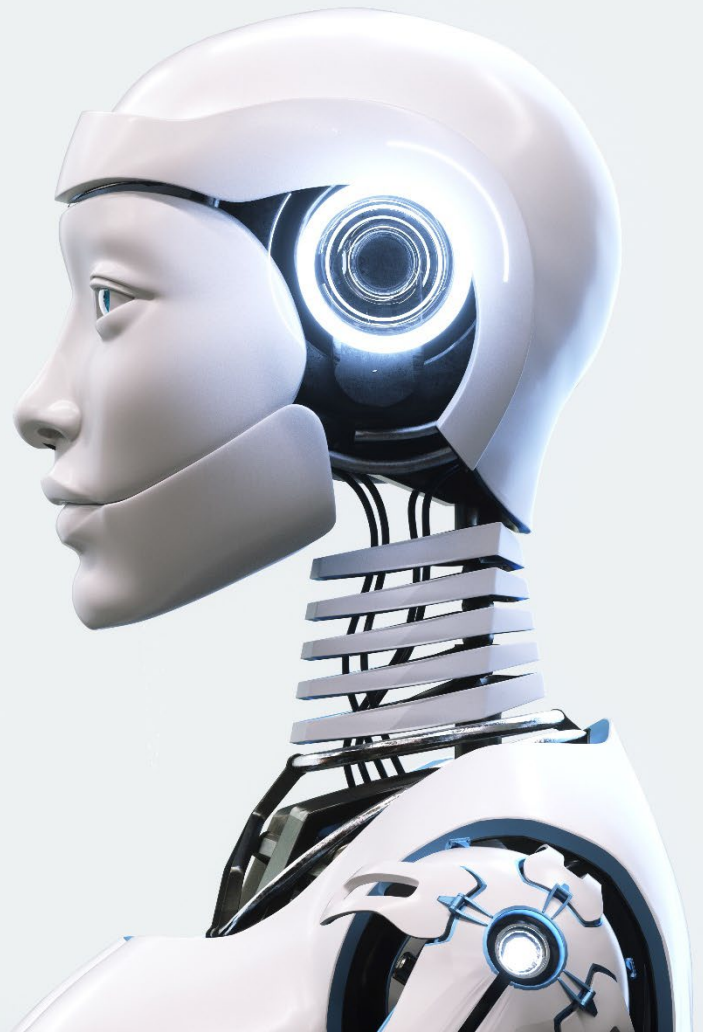




FOCUS ON: GENERATIVE ARTIFICIAL INTELLIGENCE TOOLS

GENERATIVE AI TOOLS AND ASSESSMENT

V1.0 (NOV 2023)



GAIT AND ASSESSMENT

The University of Reading (UoR) encourages a positive, ethical and educational use of Generative AI tools (GAIT) by students in order to prepare them for their future lives, in which the use of GAIT will be commonplace. This guide provides staff with an overview of how GAIT can be incorporated into or used to support assignments, as well as how assignments can be designed to discourage students from using GAIT. There is a plethora of guidance available online, as well as other guidance on this and related topics in our [mini-series on GAIT](#). There are still many questions for which the answers are unknown, and this guidance is based on the available knowledge at the time of writing (November 2023).

This guide is intended for programme directors and module convenors; it is expected that programme teams will work together to identify how GAIT might be used in their discipline, what students should experience in terms of GAIT use in their programme and to map out which assessments will facilitate the upskilling of students in GAIT use.

USING GAIT IN ASSESSMENTS

Generative AI tools (GAIT) are expected to become a common part of the workplace environment for most students after they complete their studies. Therefore, it is essential for students to learn how to effectively use these tools, recognise their limitations, and understand both the ethical considerations and the advantages of using them. It is recommended that students are given clear guidance on whether GAIT can be used in their assessments.

The three categories set out in the box below should be used to make it clear what assessors' expectations are and must be communicated to students:

THE THREE CATEGORIES OF GAIT USE FOR ASSESSMENTS AT UOR

Category 1: GAIT may not be used e.g., for in-person exams, vivas, online tests, practicals, and summative roleplays.

Category 2: GAIT can be used to support student learning and development e.g., for initial ideas, to find sources, to explain ideas the student does not understand, to help with the writing structure and use of language, to help the student improve their work.

Category 3: GAIT use is actively encouraged to help students develop their skills in the use of GAIT and understand how their use can be incorporated into authentic writing tasks. Such assessments will allow students to showcase their ability to use AI effectively and responsibly, providing them with opportunities to critically assess the outputs and to reflect upon relevant ethical considerations of GAIT use. For such assignments, teaching staff should assist the students in their use of AI, providing relevant guidance to ensure they develop the skills that the assignment is designed to assess. Tutors will need to ensure the assessment can be completed using GAIT which are accessible to all students; this might require tutors to specify which tools students are permitted to use.

- These categories are designed to give staff and students a **shared understanding** of what is permissible for each assessment.
- It is recommended that these terms be **used without amendment**, to ensure messaging is consistent across the institution, especially for students on joint degree programmes.
- If you choose **Category 1**, consider **how** to enforce the ban, and if the ban extends to GAIT's use as an assistive tool in activities related to the assignment, such as revision.
- Staff should also consider ways in which the assignment can be designed to make the use of GAIT harder for students or easier for assessors to detect.
- Where Categories 2 and 3 are selected, it is reasonable to expect students to acknowledge and cite (where appropriate) their use of GAIT, following advice and guidance from their School.
- Remember that there may be instances when the use of GAIT is mandated by the Disability Advisory Service as a reasonable adjustment.

STEPS TO DESIGNING YOUR ASSESSMENT

The following step-by-step guide to designing an assessment is intended to provide support in deciding how you will adopt an educational and positive approach to the use of GAIT in assessments in your programme and modules.

	DESIGN STEP	DESCRIPTION
1	Identify whether the use of GAIT will support students' learning and development of graduate skills .	Select one of the following categories: <ul style="list-style-type: none"> • Category 1: GAIT cannot be used for this assessment. • Category 2 GAIT can be used by students to support their learning and development. • Category 3: the use of GAIT is expected for this assessment.
2	Reflect on your learning outcomes .	What is it you want the students to be able to do to demonstrate their learning? (use CQSD's learning outcomes guidance if needed).
3	List out the processes that students will need to engage in to complete their task.	For example: crafting some initial ideas, finding and reading relevant sources to develop their knowledge and understanding, analysing information they find or data that they create or are provided with, creating an outline structure for their assessment, drafting their work, refining and revising their work to improve their writing or their design, ensuring the solutions they have reached are appropriate (e.g., through amending their code, using different statistical techniques). Consider what problems students need to solve and the kinds of thinking (e.g., analytical, critical) that the assignment requires?
4	Identify the processes in which learning might be enhanced using GAIT.	For example, GAIT may support students in organising their ideas in the outlining stage of the assignment, or they may be used to help students to develop critical thinking skills through dialogue with a chatbot during the problem-solving stage of the assignment. Alternatively, they may be used to help students to summarise or synthesise literature during the research stage of the assignment.
5	Devise some assessment criteria .	When developing assessment criteria, ensure they align with the module's learning outcomes and take into account how students utilized GAIT in preparing their assignments. For instance, criteria could include evaluating students' proficiency in crafting effective prompts , their skill in critically analysing AI-generated content, and their capability to enhance the outputs produced by GAIT.
6	Reflect on the suitability of your chosen assessment instrument .	Having decided on the assessment criteria to use, reflect on whether the assessment instrument you have in mind can measure students' achievements through the process of doing the assessment as well as the outputs produced. The University A to Z of assessment provides a plethora of ideas to draw on. The advice below sets out the approach you can take depending on the category of GAIT use you have chosen for your assessment.

Programme teams will need to consider the use of the three categories of assessment and the use of GAIT. There should be an appropriate balance of each category across programmes. The resultant combination will vary depending on the needs of the discipline, degree programme, and individual module. The approach to assessment should be considered at the programme level, ensuring that a holistic view is taken to ensure the [Programme Learning Outcomes](#) are met, and students are offered an [inclusive range of assessments](#) which enable them to demonstrate their best work. Schools should be empowered to consider the issue and plan in the context of their own disciplinary pedagogies and assessment practices.

APPROACHES TO ASSESSMENT DESIGN: CATEGORY 1

Category 1 Assessments – GAIT cannot be used.

Prohibiting the use of GAIT will be inherently difficult. Proving whether students have used GAIT will be virtually impossible, and so staff are encouraged to select category 2 or 3 for their assessments. Nevertheless, there are ways to design assignments to discourage students from using GAIT, mostly by making GAIT use less useful for or relevant to what they are being assessed on.

Consider making assessments more authentic: Authentic assessments are centred on carrying out tasks which a professional in the discipline would undertake. Such assessments can be based around real world experiences e.g., asking the students to complete a project for a client or fictional scenarios. The specificity of the task and the information provided to the students to complete it results in an assessment which is less vulnerable to misuse of GAIT.

Examples of **authentic assessments** include:

- Creating a patient care plan.
- Providing a financial forecast based on multiple datasets.
- Creating a business plan.
- Creating a research poster.
- Producing a sustainable management plan for a nature reserve
- Consider how a community agency might be affected by a specific challenge e.g., budget cuts.
- Develop an app.
- Critique a case study from multiple stakeholder perspectives.
- Conduct research for a specific stakeholder and report the results.

The more complex and specific the assessment, the less vulnerable to GAIT use it will be, but it will not necessarily be infallible.

Assessments which are linked to actual experiences in the classroom e.g., a demonstration, a practical, a discussion or fieldtrip, will be more robust, as GAIT cannot create something for which it has no information.

Further guidance on authentic assessment is available from [CQSD](#). In addition, [UCL](#) have created an assessment menu to download which suggests ideas for assessments either using or avoiding GAIT misuse. Please see [guidance from elsewhere](#) for further ideas.



"While reverting to traditional assessment methods may solve some problems, it can send us back to an assessment landscape that flatters some students disproportionately and unjustly at the expense of others. Similarly, attempting to outrun AI technology by designing tasks that cannot be answered by AI is a gamble, as AI capabilities continue to evolve rapidly. Instead, embracing AI and asking students to use it as a tool to improve their work has the potential to magnify the benefits." – Arnold (2023)

OTHER CATEGORY 1 OPTIONS

- Reflections – GAIT cannot reflect on experiences students have had, for example writing about fieldtrips, simulation/virtual reality experiences or live events. GAIT can guide students on how to do a reflection, but the output is generic and little different to the results of a Google search.
- Oral presentation or viva
- Demonstration of work created, problems solved, computer code with commentary on how it was developed, laboratory practical demonstration etc.
- Invigilated assessments (these need to be inclusive to ensure all students can access them, rather than necessary adjustments having to be made to accommodate students with additional needs).

① For Category 1 assessments, design criteria that evaluate advanced cognitive skills, such as critical thinking, evaluation, artifact creation, and the application of knowledge and skills in real-world situations.

APPROACHES TO ASSESSMENT DESIGN: CATEGORIES 2 AND 3 – GAIT CAN BE USED

The use of GAIT within assessments allows students to openly and honestly use the tools available to them within the web browser e.g., Bing Chat within Microsoft Edge and those which they can sign up to e.g., ChatGPT. This does not mean students will produce work which is solely produced by GAIT; they will instead use it to support robust academic tasks which GAIT can help them with, but which still depend on the students' own work and ideas.

Category 2: GAIT can be used to support the assessment process

In this instance, robust assessment design which focuses on humanistic qualities and higher order thinking ([using Bloom's taxonomy](#)) such as critical thinking, evaluation and creative thought is still required. For such assessments, you may want to ask students to document their use of GAIT. This might, for example, involve asking them to include the GAIT generated outputs that they used in an appendix, or it might involve asking them to include a short reflective passage on how they used GAIT and how they believe it helped them to improve the assignment.

Module Convenors will need to identify what **legitimate** use of GAIT as a support tool might look like. When designing an assessment, consider how students might use GAIT as a support mechanism. Recognise that students can perceive GAIT as a sort of on-demand **collaborator** or **personal tutor**. Therefore, ensure that you plan strategies to assist your students in adopting this perspective - do not presume that students are already know how to use GAIT.

IDEAS FOR USING GAIT TO SUPPORT ASSESSMENTS:

Preparation stage – students use GAIT to help them research information, find sources, brainstorm some ideas or provide an outline structure for their writing.

Writing stage – GAIT can help students when they are stuck with how to write something e.g., a tricky sentence which they are struggling to formulate or to create diagrams from their inputs. GAIT can also be used to help students get critical feedback on their idea or 'debate' their ideas to make them stronger.

Finalising stage – GAIT can help students identify errors in their work or to reduce the amount of text to meet a specific word count. Much of the GAIT capabilities around finalising work are similar to pre-existing tools such as spelling and grammar checkers e.g., Grammarly.

① Students must be reminded of the limitations of GAIT such as its propensity to produce biased or factually incorrect output. An essential aspect of their use of GAIT should always be to critically evaluate its output.



Crediting Students for the Process and the Product

When setting Category 2 assessments, consider how you might reward students for **demonstrating the process** they have undertaken to complete their assessment (i.e., the product):

- This could be developed into a **portfolio assessment** with opportunities for **formative feedback** which students write a reflection on, indicating how they applied their formative feedback to latter elements of their work.
- This could also involve students in producing an **annotated plan** for how they will tackle their assignment, with an **annotated bibliography** explaining how the sources are relevant to the essay plan produced.
- The use of **'track changes'** in Word could be a valuable way for students to illustrate how they have developed and improved their work as they **move from a draft to a final document**.
- Students could write a short **reflection on the process** and what they learned.

① Incorporate these activities into tutorial or seminar discussions to enhance student assessment understanding and improve work quality.

Alternatively, students could be asked to **document the process** of carrying out their assessment, for example by:

- Recording the **search terms** used in Library and publisher databases, as well as Google.
- Listing the **prompts** they provided to a GAIT such as ChatGPT, which might reveal areas for improvement for you to highlight in your feedback.
- Recording which **resources** were **useful** and which were **excluded**
- Explaining how they **approached their writing** and any difficulties they encountered along the way.

Similarly, for **calculations/quantitative** tasks, awarding marks for demonstrating how the student arrived at their answer - this could include a running commentary on the steps taken.



Physical artefact creation provides an alternative assessment which requires the students to produce something physical which might be enhanced using GAIT but cannot be created by it. Such assessments would embrace the fabrication of models, notebooks created over time (i.e., laboratory notebooks, sketch pads), or hand-created artefacts. Within STEM this could include chemical reaction annotations and scientific drawings, such as botanical notations ([Francis and Smith, 2023](#)).

Reading journals can provide an opportunity for close examination of a series of journal articles which span the module curricula and require critical thinking skills to be demonstrated:

- By setting a series of articles which **are not open access** but accessible through a University login, students can be asked to respond to the articles and write an exploratory account which demonstrates their ability to critique the source article and expand their ideas to other articles (which would also be beyond the database training used to develop GAIT).
- Example: set “Carey’s 2005 paper on “Living and dying with glaciers: people’s historical vulnerability to avalanches and outburst floods in Peru”. Students select an element of the paper to focus on, critique it and then expand beyond the paper.
- Academic staff could provide a range of stimulating prompts for students to select one from, and then ask for a short critical

evaluation of the issue drawing on wider literature but always linking back to the source article e.g., critically evaluate the relationship between politics, history and the vulnerability of the population of the Cordillera Blanca

- Ultimately the students produce a collection of short pieces which relate to some or all of the articles set.
- GAIT could help find sources and explain concepts to students but are unlikely to be able to carry out the close scrutiny and cross reference back to the source article required.
- For additional robustness, a reflection on in-class discussions could be incorporated into the reading journal.

Category 3: Embedding GAIT to develop students’ skills and understanding in their ethical use and limitations.

Within their programme(s) students will need to develop an understanding of the benefits of using GAIT as well as their limitations.

Guidance on supporting students in their use of GAIT is available from the [CQSD website](#).



Before setting assignments centred on using GAIT, identify what guidance and support students will need to use the tools effectively. Consider the following:

1. Which GAIT do I expect my students to use? Are these freely accessible to all students?
2. How can I ensure that students who do not have the capacity to pay for enhanced GAIT are not disadvantaged in their assessment?
3. Have my students had any previous experience of using GAIT?
4. If yes, is this sufficient to equip them to carry out the tasks I intend to set?
5. If No, where in the module can I allocate time to allow my students to practice before being assessed on their use of GAIT?
6. How will I ensure my students understand the benefits and limitations of GAIT including ethical, bias and data privacy considerations?

There are several assessments which could be undertaken to incorporate the use of GAIT to learn about the discipline, as well as developing skills in using and critiquing GAIT outputs. The following text provides some examples.

GAIT generated starter essays – students use a GAIT to provide them with the basis for an essay, which they then use track changes to improve. Students would add in comments about the accuracy or otherwise of the content, add suitable references to support the ideas, and improve the writing. Students would receive credit for the nature and extent of improvements made.

Comparison of GAIT – students use two or more GAIT to provide responses to a set question, which they then compare and evaluate. Students would be guided on the aspects to consider e.g. bias, ethical issues, accuracy, level of detail and criticality.

Using GAIT to improve work – students are rewarded for their use of prompts to refine and develop materials created using GAIT, this could be written work, a presentation or graphical material.

Using GAIT to support job applications – under this scenario, students are guided to use GAIT to develop and refine applications for discipline specific jobs. The task not only develops students' understanding of how to use GAIT and the ethical considerations of doing so, but also promotes engagement in understanding their options after graduation.



ADAPTING EXISTING ASSESSMENTS TO INCORPORATE THE INCLUSIVE AND ACCESSIBLE USE OF GAIT

Colleagues may be keen to utilise GAIT in their teaching, while at the same time consideration must be given to assessment design and the potential susceptibility to academic malpractice resulting from content generated by artificial intelligence tools.

Returning to a reliance on unseen invigilated exams as our sole or principal mode of assessment is neither pedagogically desirable, consistent with [PRP principles](#), nor practical given University processes around such assessments.

Each programme's suite of assessments may include:

- Assessments which focus on higher order thinking skills requiring students to critically evaluate, make predictions or recommendations etc - these are less vulnerable to misuse of GAIT.
- Authentic assessments (see CQSD [guidance](#) and above), GAIT perform better on tasks for which there is a lot of information and less well in specialist, niche areas, especially those which are synoptic and/or future focused.
- Personalised/reflective assessments which do not include (and/or 'design out') GAIT. Reflections on experiences (e.g., workshop, a group presentation or on the process of writing something) is also submitted.

- Assessments designed to include the use of AI and develop students' AI literacy.
- Traditional invigilated assessments (only where essential and unavoidable).

A wider range of ideas on the use of GAIT in assessment can be accessed from the guide [Assessment Ideas in an AI enabled world](#) (PowerPoint download) which draws on [Lydia Arnold's](#) Top Trumps Authentic Assessment Cards, and adapted by [JISC](#).

As with all assessments, it is good practice to explain to students why they are being assessed using the methods you have chosen, and where use of GAIT is not permitted, to explain why e.g., over-reliance on their use can limit students' development of critical thinking, writing and evaluation skills. Where use of GAIT is permitted, students will need to know whether this is category 2 (only use GAIT to support learning, not generate assessed outputs) or category 3 (in which GAIT are embraced and used to develop students' skills and/or critical thinking). In all cases, students must be reminded to follow academic good practice and abide by the University's Academic Integrity policy.

GUIDANCE FOR MODULE CONVENORS IN RELATION TO GAIT AND ASSESSMENT

Given the variety of experiences students have of using GAIT and expectations about what they may and may not do, the following is recommended for module convenors:

Students *must* be informed as to whether they can use GAIT in their learning for a module. Module convenors should be clear about which of the following categories (as outlined above) each assessment falls into and ensure this is clearly reflected on Blackboard:

1. The use of GAIT is prohibited in this assessment.
2. GAIT can be used to support you in preparing this assessment.
3. GAIT can be used for this assessment.

- Review assessments considering the rapid development of GAIT and identify if any changes need to be made to the assessment, and which of the three categories above the assessment would fall into in terms of students' use of GAIT.
- Assessments which require regurgitation of information and ideas, without detailed specific application to a situation will be more vulnerable to the misuse of GAIT. Work requiring students to use higher order thinking skills (see Bloom's taxonomy on page 5 of our learning outcomes guidance), authentic assessment and to reflect on actual experiences in their learning environment, are much less vulnerable.
- The Blackboard module site should include a statement about the use of GAIT for that module, making it explicit when and how students might use GAIT. Failure to do so could result in cases of suspected Academic Integrity falling through on account of insufficiently clear instructions to students.

Work with the Programme Director(s) to identify if students have used GAIT before, and if not, ensure they have appropriate training in its use. It should never be assumed that students have prior experience and/or understanding of how GAIT work. When training students, ensure they understand the limitations, potential bias, potential for false information, privacy and data risks, ethical and exploitation issues and plagiarism risks associated with using GAIT.

SUMMARY

The University of Reading has adopted three categories for assessments which provide clear guidance to students on the acceptable use of Generative AI Tools (GAIT). Detecting the misuse of GAIT is inherently difficult and this is unlikely to change as the technology evolves. Developing assessments which incorporate the use of GAIT or rely on complex scenarios and experiential learning are the most reliable means of responding to this challenge. The use of GAIT is becoming mainstream in industry and students will need experience of using these tools to enhance their future job prospects.

Guidance on GAIT and supporting your students and GAIT and Academic Integrity can be found on the [CQSD guidance pages](#).

USEFUL GUIDANCE FROM OTHER INSTITUTIONS AND NATIONAL HE ORGANISATIONS

Many institutions are developing their guidance on assessment design in light of GAIT. Colleagues might find the following pages particularly helpful when reflecting on adapting or re-designing assessments:

- [Advance HE Authentic Assessment in the Era of AI](#)
- [AdvanceHE](#) alongside the University of Exeter have created a matrix to help academic staff identify the vulnerabilities of existing assessments. Suggestions for tightening up each assessment type are also made.
- [Heriot Watt University](#) have a series of guides and articles on GAIT including: [Reviewing your assessments in light of increased availability of AI content creation tools such as ChatGPT](#) and [Living the future: Can university assessment cope with ChatGPT?](#)
- JISC report on [AI in tertiary education](#) provides useful cases and discusses ethical considerations.
- Kings College London have resources to help staff consider the big picture e.g. whole degree down to the individual assessment component. Their materials also provide useful guidance [on approaches to assessment](#).
- Lydia Arnold's [Authentic Assessment and AI](#) pages have useful advice
- Nigel Francis and David Smith have kindly shared their resources under a creative commons licence. The resources include a [guide](#) on the potential options available to academic staff when considering how to address the challenge of GAIT in assessment.
- The [QAA host](#) some resources include videos and guidance on adapting to a world with GAIT.
- Sally Brown's guide to [Authentic Assessment](#) have several compendia from the Covid19 era which are worth browsing for ideas.
- University College London host a [Generative AI Hub](#) on their webpages and have a useful guide to [designing assessments for an AI-enabled world](#)
- [University of Leeds](#) and [University of New South Wales](#) both provide additional ideas on the formats authentic assessments might take.
- Watkins, N (2022) [Update your Syllabus for ChatGpT](#) – this resource makes useful suggestions on how to embed GAIT into your teaching to support students' understanding of how to learn about the tools and their limitations.

Published Nov 2023. This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#).

