AI Advisory Council Advice Paper – February 2025

AI and Education

AI Advisory Council

The Artificial Intelligence Advisory Council is tasked with providing expert guidance, advice, and recommendations to government on emerging issues in artificial intelligence providing insights on trends, opportunities, and challenges.
While Secretariat and administrative support is provided by the AI and Digital Programmes Unit of the Department of Enterprise, Trade and Employment, the Council develops its own expert papers and advice.

Scope: this advisory paper considers implications from the emergence of generative AI as a popular and accessible tool in the primary / post-primary / third-level and further education sectors. It does not address the use of AI more generally, and the reasons for the limited scope of this paper are because:

- generative AI puts this technology in the hands of all educators and students
- It has not been developed with younger generations in mind and so needs specific focus
- we see this area as having the current biggest impact on the educational system right now and there is an urgency to respond appropriately.

Background

Artificial Intelligence is not a new technology and has been gradually seeping into our lives with applications in healthcare, education, the financial sector, transportation, entertainment, law enforcement, communications and in our homes. Generative AI, where new content is generated from training data, has recently become hugely popular, with very rapid uptake from a global audience and this aspect of AI is what we focus on in this advisory paper.

Generative AI has enormous potential to enhance education in several ways including teaching support for example by assisting with creating lesson plans, personalised learning for students by providing customised explanations of complex topics, providing immediate and detailed feedback on student work, accessibility support for those with learning disabilities or different needs, improving writing style and grammar, and more. These examples show how to empower and not replace educators to enable them to work alongside AI systems.

As an overarching point we wish to highlight that the generative AI area and especially where it intersects with education, is developing at an unprecedented rate that none of us can easily be comfortable with, and some are more uncomfortable than others. This includes both educators and students and should prompt the teaching professions at all levels to do some difficult but important reassessment of their roles in order to appropriately leverage these new technologies, for the benefit of students and the integrity of the teaching-learning process. We also believe it is important to highlight that we cannot stop these technology developments. The pace of development is outside our control but the ability to manage them appropriately in our educational institutions is within our control and there is no guarantee that technologies like generative AI will sustain and remain with us over the long term. Instead we should try to ensure that it is used properly, ethically and only when its benefits outweigh its costs for instructors and students in an education setting.

We acknowledge that there is a full spectrum of addressing AI in education at primary, second and at third levels, from banning it completely to implementing innovative use cases, sometimes within earshot of each other. Third level institutions which are independent in how they decide to incorporate AI into their practice, are at very different stages of their journey into addressing the disruption that generative AI brings with some having fixed and agreed policies and others leaving decisions to individual Lecturers.

Such a wide spectrum of activities and individual approaches leads to confusion among teachers/instructors and students because there are no leadership-led, top-down guidelines or policies yet in place around best practice, and even more confusion for students and parents/guardians around the expectations of them around using generative AI in their learning and assessment journey.

Because generative AI tools are easily accessible this could encourage or lead some students to ‘cheat’ at assignments either deliberately or inadvertently and dampen what would be genuine knowledge acquisition. Indeed, much of the narrative around generative AI since its increased popularity has been around plagiarism detection. It is now clear that detection methods do not and will not work so integrating AI into teaching should be about using it constructively and developing broader critical thinking around the capabilities and limitations, and shortfalls amongst students. For example, in areas of study where factuality and accuracy are critical (say History), the use of generative AI would require a great level of caution and output verification compared to areas of study where factuality matters less (for example, creative writing).

Finally, in addition to access issues, because of the monetary cost of the access and usage fees charged by technology companies, currently the generative AI support for the Irish language is very limited creating an unfortunate divide for Gaelscoileanna. Irish language schools are faced with an impossible choice, to either use a form of generative AI which is not well supported or to forgo its potential benefits.

Guidelines on the use of AI

There are interim guidelines for the responsible use of AI across the Irish Public Sector since early 2024 with an expectation of updated guidelines in early 2025 and these are principle-based, leaving pragmatic implementation details and decisions to individual departments and agencies.

The National AI Strategy Refresh published in November 2024 states as strategic action 6C: "Develop guidelines on the use of AI for teachers and school leaders, building on guidelines published by the European Commission, and consider the appropriate integration into curricula of AI and AI literacy."

The importance and urgency of doing this cannot be overstated. The principles in these guidelines are applicable to any and all uses of all forms of AI across all domains but within the educational context there is a need for further guidelines more specific to education.

The AI Advisory Council is particularly supportive of the following principles for the use of AI in education

- AI tools to be used by students should be private, secure, and free to use for all teachers/instructors and students.
- Data which is generated while using these tools in an education setting should not be used for training AI models, and hence there should be no risk of data or documents being leaked.
- The use of AI tools in educational settings should be inclusive, equitable, designed for accessibility and thus usable by all instructors and learners.

There are ongoing efforts at developing guidelines at sectoral level by the HEA, by QQI, by the Department of Education and at the levels of individual institutions and schools. Those developing such guidelines need to be aware of the other developments and to make sure their own guidelines reconcile with and do not contradict any of the others.

Educational settings should be free to establish their own AI usage policies based on their specific needs and circumstances. While this may result in varying or even conflicting guidelines across different settings, this flexibility allows each institution to create guidelines that best suit their educational environment. Every educational setting should maintain and clearly communicate their specific policy on AI use to all stakeholders.

The area of AI, especially generative AI, is a fast-moving technical area with new developments almost weekly and guidelines can quickly become undermined or obsolete. In developing guidelines, one needs to ensure they are live documents and are not cast in stone. Guidelines should be under regular revision and mechanisms should be in place to accommodate additional extensions or updates in a speedy manner as new AI-based technologies develop and become available. The guidelines need to also be regularly updated to reflect the latest

research findings from model evaluations and studies of the downstream impact of the technology on the teaching-learning process. This puts the onus on those who develop guidelines to be cognisant of other related initiatives in the area, but there is a role for overall coordination to ensure there are no gaps and that guidelines are updated as required and remain relevant.

Training and Literacy on the Use of AI

The education sector right across the board, currently lacks consistency concerning whether and how teachers and instructors are trained to use AI, particularly generative AI, in their teaching. Despite the EU AI Act requiring organisations which use AI to boost their basic AI literacy by early 2025, many educational institutions across all levels have not yet shown enough progress toward this goal. We urgently need to develop and implement training programs in AI literacy that will equip our educators with fundamental familiarity with AI, and to prepare those who will train others. This is in line with the National AI Strategy Refresh published in November 2024 which states

“Strategic Action 1C: Make AI literacy (basic understanding of the benefits, risks, safeguards, rights, and obligations in relation to the use of AI systems) an integral component of Ireland’s Literacy, Numeracy and Digital Literacy Strategy 2024-2033: Implementation Plan to 2028.”

There are already pockets of excellence and of innovative uses of AI and of generative AI throughout our educational system at different levels. An example of this is the catalogue of such activities at third level in https://ucclibrary.pressbooks.pub/genai/. These early adopters should be encouraged, subject to working within the guidelines already in place.

There are also government-funded activities such as the Learnovate Technology Centre, funded by Enterprise Ireland and IDA Ireland whose focus is on technology-enhanced learning as well as some startup companies focusing on this area. Such innovative developments in using AI in education should be regarded as creative activities which build upon good levels of AI literacy and critical thinking and should be encouraged but should always protect the most important things in the educational process, the student experience.

We recognise and welcome important activities by some large multinational corporations (MNCs) in Ireland in the area of improving STEM education and bringing familiarity with AI to schools and to teachers. However, these are not systematic and cannot have a widespread, national reach though they are pilots and models of what should be put in place. Given that generative AI is a relatively new technology, its potential downstream impact on the teaching-learning process is necessarily not yet fully understood. This is a reason to approach the technology cautiously but also invest in long term impacts of learning and skills developing.

Conclusion and Actions

We hope that this advisory paper and the focus that it brings, will facilitate a national conversation between teachers, policymakers, technology companies, students and parents/guardians, and those working in innovative uses of technology in education, once the various guidelines under development are published and there is more stability and direction to the ways in which AI and generative AI can be usefully used in education. The Council makes the following recommendations:

1. Government should create and publish coordinated and consistent guidelines for the use of generative AI when it is to be used, at appropriate education levels that harmonise with each other, while ensuring these guidelines remain "live documents" that can be quickly updated as AI technology evolves. These should cover both principles and use cases in order to ensure the safe, ethical and responsible use of AI.
2. Government should lead the development and implementation of AI literacy training for educators across all educational levels which should focus on equipping teachers with fundamental AI knowledge, preparing them to further spread this knowledge. This should form a core part of professional development programmes for educators.
3. Government should establish a system to ensure equitable access to generative AI tools in education, specifically addressing the monetary barriers and language support issues (particularly for Gaelscoileanna), making sure generative AI tools are private, secure, and free for all teachers and students.
4. Government should facilitate a national conversation between teachers and their unions/representative organisations, parents/guardians and their representative organisations , policymakers, technology companies, students and their representative organisations, and educational technology innovators once the various AI guidelines are published, to create a more stable and directed approach to leveraging AI in education and monitor and evaluate the impact of the use of generative AI by students in education.

Subgroup on AI and Education

This Advice Paper was drafted by the subgroup chaired by Prof. Alan Smeaton, and comprising Prof. Deirdre Ahern, Dr. Abeba Birhane, Dr. Susan Leavy, Ms. Bronagh Riordan, and Prof. Barry O’Sullivan.