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How Scottish schools are being equipped for AI-based learning

An AI curriculum framework for Scotland claims to be the world's first to put children's rights at its heart. As tools for navigating AI in education are launched today, Dr Jasmeen Kanwal sets out the key principles

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Jasmeen Kanwal



For better or for worse, AI are the two letters on everyone's lips just now. And whether you enthusiastically embrace **new generative AI technologies** such as ChatGPT, or prefer to step back and watch the hype unfold with a wary eye, there's no getting around the fact that these technologies are increasingly present in our daily lives - including those of young people.

Today a new set of resources has been launched at TRAILS.Scot to help teachers better equip young people to navigate this reality. The resources have been developed by a team at the University of Edinburgh, in collaboration with Education Scotland, the Scottish Qualifications Authority (SQA) and the Scottish government. They were helped by six teachers-in-residence - supported by a grant from **Responsible AI UK** - who were selected as experts in their subject areas and pioneers in incorporating AI into their teaching.

Young people want to learn about AI

We know that young people want to learn with and about AI in schools. **Research by education directors' body ADES** found that young people want to be taught the basics of how AI works, and to discuss AI ethics and safety, at the start of secondary school. They also want opportunities to practise and play with AI, learn real-world skills to succeed in an AI-impacted job market and have access to personalised AI tools to support additional needs and ensure inclusivity.

Primary-aged members of the Scottish Children's Parliament have also called for AI to be in the school curriculum, with the caveat that AI companies and teachers should always proceed first with children's rights and safety in mind.

Teachers need more support

We know that an overwhelming majority of teachers believe AI has a place in Scottish education, and they are calling for clear guidance on how to effectively and responsibly incorporate AI into their teaching practice.

TRAILS.Scot is answering that call, with the launch today of a suite of AI literacy resources for Scottish teachers (they are free for anyone in the world to access, use and adapt). This includes a draft Scottish curriculum framework for learning with and about AI, detailed in the new [***Teach AI Literacy handbook***](#) for teachers in upper-primary and secondary settings, and a set of high-quality, pick-up-and-teach lessons to help teachers deliver the curriculum in a fun and engaging way.

The lessons include cross-curricular introductory activities, plus subject-specific resources written by the teachers-in-residence, including lessons that use AI in innovative ways to support learners with additional needs. Teachers can sign up for a free professional learning session to find out more about the resources.

Children's rights at heart

The new AI curriculum framework for Scotland is the first in the world to put children's rights and ethics at its heart. With the [**adoption of the UN Convention on the Rights of the Child \(UNCRC\) into Scots law**](#), it is essential that children's rights are upheld at every stage of integrating new technologies and learning outcomes into education; this includes putting pupil voice front and centre.

In the new framework, the children's rights and ethics component, which, crucially, includes AI sustainability issues, is supported by two building blocks: AI literacy and critical thinking. Learners first need to understand how technologies like ChatGPT and other AI systems work, as well as having basic critical thinking skills in place, in order to safely and effectively navigate these technologies. Once these basics are covered, teachers can then guide learners in responsible use of AI to support learning across different subject domains.

The framework is designed to make it as easy as possible for Scottish teachers to adopt it. Most of the AI curriculum outcomes have been modelled on existing Curriculum for Excellence (CfE) outcomes. The handbook describes the new outcomes in depth and details how they relate to the UNCRC, the [**four capacities of CfE**](#) and the meta-skills progression framework of Skills Development Scotland.

Here are some of the other principles highlighted in the handbook:

- Teachers have a key role in developing learners' AI knowledge and skills. Children value the human relationships they have with their teachers. AI tools should not be used instead of a teacher.
- Schools and local authorities should provide age-appropriate generative AI tools for learners that uphold children's rights. However, children should not be required to use such tools if they have principled objections, such as privacy, environmental or copyright concerns.
- Concerns around generative AI in assessment should not drive learning. Assessments should focus on learning outcomes, not what is measurable in generative AI-free conditions. New learning outcomes relating to working with generative AI will become relevant.
- As generative AI advances rapidly, the education system must respond flexibly to stay up to date. Collaboration and sharing of good practice among education agencies and teachers can help.

The *Teach AI Literacy* handbook was written by [**Professor Judy Robertson**](#) and colleagues at the University of Edinburgh, in collaboration with Education Scotland, the SQA and Scottish government. The AI curriculum was also informed by representatives from the Scottish AI Alliance and the Children's Parliament.

The University of Edinburgh team behind the resources have spent the past decade working on Scottish and UK government-funded projects to develop curriculum frameworks and teaching resources for computing education and data literacy across primary and secondary level. Their [***Teach Data Literacy handbook***](#) is possibly the first comprehensive primary-level resource on data literacy in the world - and has now heavily influenced subsequent data-literacy curriculum frameworks in other countries.

Dr Jasmeen Kanwal works at the University of Edinburgh and is part of the team that developed the resources at TRAILS.Scot

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Jasmeen Kanwal



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