Department for Education

The safe and effective use of AI in education

Module 4 – Use cases of generative AI in education video transcripts

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Video 1 – Introduction to use cases of AI in education

Presenter: Welcome to module four, video one from the Safe and Effective Use of AI in Education online resources.

Welcome to module four of the Safe and Effective Use of AI in Education. In this module, we'll be covering the potential use cases for generative AI.

As you have already learned in previous modules, generative AI, when used safely, has a wide range of potential uses in education.

There is a wealth of approaches we can take with AI for a huge range of tasks. It's worth remembering that generative AI tools can generate content in a range of forms, including texts, images, video, audio, music, code, and other content types. Different approaches will be appropriate to the phase and subject you are teaching in your setting.

But while generative AI, often referred to as Gen AI, can be used in many ways, we should always consider carefully how it is going to benefit us or our pupils or students and ensure that it is supporting our work and not replacing important thinking processes. It's important to maintain human oversight.

In this module, we'll explore some of the ways generative AI can be used most effectively in education.

We'll be breaking down the use cases into three key areas:

- Teaching and learning
- Personalised learning
- Administrative processes

This module will showcase some of the ways we can use generative AI to support our processes as educators.

We'll also introduce the FACTS framework, a structured approach to crafting effective prompts.

And finally, we'll share real-world case studies from a variety of educational settings.

These examples showcase how educators are already using generative AI safely and effectively.

Video 2 – Generative AI in teaching and learning

Presenter: Welcome to module four, video two from the safe and effective use of AI in education online resources.

There are many different ways that generative AI can be used to support teaching and learning. AI has the potential to reduce educator workload. As recent guidance from the Department for Education advises, generative AI tools can make certain tasks quicker and easier, but it cannot replace the judgment and deep subject knowledge of a human expert. In the 2024 user research report by the Department for Education into the Use Cases for Generative AI in Education, teachers who responded to the survey were most keen on the idea of using time saving tools for marking. The second most popular use case for saving time was data entry, and analysis of pupil progress or attainment.

From speaking to teachers, we know that they're keen on using tools that could strengthen their practice in adapting resources for particular learners, designing lesson resources, framing or reframing difficult concepts for students and pupils, lesson planning, and making sense of data. With all of these, we need to remember how we can make sure that this is done safely and with human oversight. For example, if we're going to adapt a resource from one class to another, we might ask AI to simplify it or maybe change the reading difficulty, but we then need to check the output thoroughly and adapt it to ensure that it really is appropriate for that class. If the resource we're adapting was a purchased resource, we'd also need to make sure that we had the right permission from the copyright holder to use it in that way. We would also need to only use AI systems that were provided by our setting, which wouldn't train on the prompts given to it.

Generative AI can be used to suggest ideas for lesson content and lesson structure. It can also support with long term planning or in detailed activity planning for creating an activity rota in an early years setting or mapping key concepts in a vocational qualification. There are many tools available to support with planning. When using generative AI systems for this, we should consider our specific student and pupil needs alongside who the lesson or activity is for and what the intended learning outcomes are.

Matthew Wemyss, AI in Education author, Assistant School Director, Cambridge School of Bucharest:

“If you ask for a computer science lesson on a particular topic, you will always get most likely probable version of that lesson, and that might be absolutely fine. It could be absolutely fantastic and work for you and your students, but it doesn't know your context. So then going in and saying, I've got this student, I've got this student, I might have a student who has an IEP, I need additional support for this area. So it's really our training at my school has been, how we can use AI to personalise learning for students through the teacher's own reflections.”

Aaron Norwood, Technology Lead, Ivel Valley Special School (Age 3-18):

“We have recently had training on the use of AI and everything to do with data protection and we know as staff that we still need to check the output that AI gives. Across the school and college teachers, TAs and SLT have used AI in a number of ways. Across different classes AI has been used to create ideas for longer term planning, as well as creating images for descriptive writing.”

Presenter: We can create resources for our lessons as texts and images. Through this, we can adapt our content easily for differing needs. For example, we could prompt a large language model to break down a complex piece of text into manageable chunks. We can also create engaging and fun ways for our students and pupils to interact with content. The generative AI system may produce these outputs as text, but they could also be images. These images could be used as exemplars or discussion prompts or to promote creative writing.

Hannah Guanlao, Teaching and Learning Leader, ECT Mentor, Chiltern Academy:

“Opportunity to be part of a working party, testing an AI education assistant, has been approved by both the trust in the school with all the necessary data and security checks in place. This AI assistant comes with a range of structured tools that help refine the outputs, making sure that they're useful and relevant. And honestly, it's been a huge time saver. It has saved me hours and hours of work in several ways. I'm an ECT mentor, so I write detailed observation reports, which can be time consuming. AI has helped me clean up and streamline my notes, making reports more concise and professional while keeping all the important details intact.”

Matthew Wemyss, AI in Education author, Assistant School Director, Cambridge School of Bucharest:

“So there's quite a few quizzing tools out there that now have AI integrated into them. So you can do copy and paste from a learning resource, maybe upload a learning resource into that tool, and then it will generate a quiz directly from the content, which in the past, we would have had that to create the questions ourselves or go through the bank of questions built into the tool. Now we can generate those, usually I do it two to three minutes sometimes before my lesson and I have a bespoke quiz to do the retrieval practice with my students.”

Caroline Shea, Head of Art, Chiltern Academy:

“When using AI in my classroom, I particularly keep in mind when students want to use it in the future and beyond the classroom in their careers, we focus hugely on preparing students for the working world in art and design, and AI is a great tool as it is used throughout many careers, such as animator, architect and graphic designer. Using AI in

terms of teaching, I use it commonly when planning lessons and particularly making sure that all students' needs are met during every lesson. When using AI in lessons, I tend to look at it in terms of an aesthetic point of view as well, it being art and design and making sure that my lessons fit the theme that I'm discussing. Also using AI, especially for digital art, because digital art is becoming incredibly common nowadays. Usually, a student would have a sketchbook and a pencil at home, but nowadays it's more so an iPad and a stylus. So using that and having AI as that tool to get them started on that journey in their digital artwork is incredibly important."

Presenter: If we're considering the use of generative AI tools in teaching and learning, it's essential to first align the use with our objectives for any given lesson or series of lessons. We must put pedagogy first when using tools to support us as educators.

Chris Loveday, Vice Principal, Barton Peveril Sixth Form:

"So at Barton Peveril Sixth Form college, we're currently piloting student use of a large language model. We haven't given them access to one of the commercially available ones. Instead, we've built our own front end, so the user interface is bespoke to us. It's powered by an API, so a plug in from any of the large language models that are readily available. Unlike commercial large language models, this has enhanced safeguards built in, so it won't answer questions on topics such as misogyny or violence. So it will only discuss those topics we want students to be able to engage with. Unlike commercial large language models, this also tracks input and output, so question asked as well as answer given.

"Assuming the pilot carries on in its successful form, we intend to roll out access to Barton AI to all of our students free of charge, so 5,000 users. The reason we're looking to do this is currently if you were to look at a student who has a laptop and internet access, they have an advantage over a student that doesn't have those things. If you give that same student access to a premium large language model, that's no longer a digital divide, that's a digital chasm, and we're trying to make sure that we can help our students bridge that.

"In addition to access, we are training our students on understanding how generative AI works, its limitations, its ethics and its biases, so that they can be safe users and consumers of artificial intelligence."

Video 3 – Generative AI for personalised learning

Presenter: Welcome to module four video three from the safe and effective use of AI in education online resources.

One area of education where generative AI can make a significant difference is in the way that it can personalise learning. This can be especially useful for learners with special educational needs of all ages. AI tools can help educators provide equal access through a variety of different methods.

A text to text large language model can break down complex tasks into chunks, listing or bullet pointing the task. It can also be prompted to respond with a specific persona. This means that we can ask the generative AI tool to respond in the style of something or someone, or with a specific reading age or in a different language.

Certain chatbots can provide low pressure environments for practising conversations. The British Dyslexia Association states that it recognises the potential for AI to “remove barriers to access to education and employment, enabling greater participation in society”.

For students and pupils with motor disabilities, AI powered speech recognition tools help them write essays and complete assignments using just their voice. For learners with specific needs and disabilities, AI powered technology can help to describe scenes for those who are visually impaired, support learners with dyslexia and assist in communication.

Matthew Clemence, Cloud Champion – Leo Academy Trust:

“So I'm using it constantly, pretty much in most lessons, so it could be for adaptations, it could be for tweaking it for children with slightly different needs, who need it. And also it's making my time a lot more efficient, so I'm spending a lot more time with the learners and it makes the admin tasks much, much, much, much quicker.”

Irina Kovacs, Art and English Teacher, Challney High School for Boys:

“In order for me to be able to use AI in my lessons, I had to research certain websites, make sure that the data is not shared with the website or student's data is not shared. And after I checked all these features and the terms and conditions I shared it with my IT department and they shared it with our Trust for approval. So out of the two, three AI image generator that I proposed, one was successful and I was able to use it.

“They had to write a short story and then they had to first write the setting of the story. They had to use a lot of imagery and literary devices. After they written the text, they had to put it on the AI image generator and then the image would be generated. They had to rewrite specific areas, so they would look at the image and recognise what the AI image generator did not take from their description and then improve that sentence.”

Presenter: Generative AI can also assist in the process of generating personalised learning plans, whilst maintaining human oversight and decision making. It can also

adapt content to suit different abilities and learning speeds. UNESCO highlights that “AI has the potential to foster inclusive education by tailoring learning experiences to individual needs”.

Aaron Norwood, Technology Lead, Ivel Valley Special School (Age 3-18):

“Some of our learners have used an app that has AI to support with their reading. Some teachers have used AI to create some entry level questions for morning work.”

Roger Williams, Assistant Headteacher, College Site, Ivel Valley Special School:

“Students, you know, they've reached the age of sixteen and they still can't read, but they still have to access the big bad world out there. They still have to read menus, they still have to read things on items they want to buy but there are apps that they can use, and actually they're incredibly excited about using, to enable them to read these things literally by holding their phone over something, and it will read it out. They can hold their phone over a barcode and it will tell them what they're holding and it will give them various information about it. But these are things that I've literally seen our pupils just so excited about using these things because it's opening up the world for them. So we think at AI is a very, very good thing and we're really excited about embracing all the things that are yet to come.”

Scott Hayden, Head of Teaching, Learning and Digital, Basingstoke College of Technology:

“So for example, an automotive teacher, we work with he gives his files to an AI tool and then he's able to summon and speak only to those files. And equally, his students are able to summon and speak to those files that have been curated with clear intention by their course tutor, which means they're not going beyond that. They're staying in a particular area, the learners when they're accessing it. And equally, the learners are able to get podcast overviews of said materials. And that from an accessibility and inclusivity viewpoint is particularly impactful.”

“That automotive teacher is able to generate podcast overviews of his slides, his handouts and the videos he creates in the workshop. And one learner in particular, who can't always be present in the lessons, because he's a young carer and has a part-time job, is able to listen to those podcast overviews when he is travelling to his part-time job or perhaps on the bus home from college. So the idea of adapting and personalising resources is particularly interesting.”

Presenter: In Scott's example that we've just seen, the college were able to do this as they had considered the safety of the large language model and had permissions in place for the content that was uploaded.

AI tools work best when combined with human support – those teachers, parents and specialists who understand each learner's unique needs. An AI tool can assist, but it can't replace the power of human connection in education.

Video 4 – Generative AI to support workload and administrative tasks

Presenter: Welcome to module four video four from the safe and effective use of AI in education online resources.

As we all know, school administrative tasks can take significant time and effort, but from composing emails to long-term planning, AI systems are playing an increasing role in making school administration more efficient. In this video, we'll explore the various ways in which AI can support school operations.

Composing emails and letters can be time intensive, particularly for school leaders and teaching staff. Generative AI can produce professional and personalised communications efficiently, reducing the administrative burden on staff so they can focus on core responsibilities.

Cheryl Shirley, Director of Digital Learning, Leo Academy Trust:

“And I think the main things for us was to look at workload and think about, you know, we know that that's a challenge in terms of retention of staff across our schools and across the country. So we wanted to make sure that what was it that we could actually do to support them. So lesson planning, how could it support feedback and marketing, how could it support assessment? And I think those are the main three things that we've really focused on at this part of our AI strategy.

Matthew Clemence, Cloud Champion – Leo Academy Trust:

“And I think it's really starting to become embedded, especially over this previous year.

Neelam Palmer, Director of Digital Learning and Education, AISL Harrow Schools in Asia:

“Obviously, there are things like AI policies that we're considering. We're looking at the whole change management structure for incorporating Gen AI tools into our ecosystems. And we're also having the conversations about, what does this look like from a productivity side of things for our non-academic staff and also for my teaching staff, how could we really support them so that we can reduce their teacher workload or increase productivity or make them the smarter teachers we want them to be.

“So from a leadership perspective, there's a lot of big questions that we don't necessarily have answers for. From a teacher point of view, I think a lot of us are looking at it in a way to generate perhaps lesson plans, summarise documents, or really from a more productive administrative point of view in terms of saving time and becoming smarter users for it.”

Miles Berry, Professor of Computing Education, University of Roehampton:

“You know, take the example, if you will, of the nit letter of we've got an outbreak of headlice nits in a particular year group, and we have to send a letter home about that.

You know, there are templates there. I'm sure there are plenty on the school server for that, but asking the generative AI to produce a letter for that and giving it a particular focus to the language. So we might draw on what we know about nudge theory, about behavioural insights and say, can you incorporate these ideas into this generic letter home about a particular issue? Plenty of other examples where the AI can really help with workload when it comes to home-school communication. This isn't about replacing admin staff because it's much more about finding ways in which their time can be used much more effectively for the personal communication, which is really important when parents are thinking about their own child's education. So some letters, I think, will still be very much person to person communication. Others perhaps the AIs might be able to play a role in."

Presenter: It is important that we engage with the output, critically evaluating it before we use it as a template or scaffold for our own writing. In many AI systems, we can provide our own source material, asking the generative AI tool to write in the style we have used in the past, or referring to key pieces of information from the source material. This can also support with writing reports.

Miles Berry, Professor of Computing Education, University of Roehampton:

"There's plenty of issues around which we need to develop policies and we need to be up to date with what current government policy and strategy is around things. And there are some lovely tools out there where we can give it a particular document as a starting point, far less likely than the more generic tools to hallucinate, just make things up because we're giving it source material to work from, and then saying, okay, read this document and now give me the changes that we need to make to our particular policy or give me a summary of this, or even produce for me a 10-slide presentation that I could use with staff to introduce this.

"The other one is working with data, and schools I think have to be really careful in any use of data with language models. It needs to be anonymised. You do not want to be submitting pupil-level data to any of these AI engines. I think most schools would realise this, but with anonymised data, it's excellent at producing data visualisations and looking for patterns, identifying the exceptions there, so a school might do a survey of all of its pupils or all of its parents and want to produce a chart which illustrates those responses.

"We can do that with plenty of other desktop tools, of course, but it really simplifies the workflow by going to the AI saying what sort of chart you want, and then asking it the question about ok, summarise this. Tell me the main ideas here, tell me the interesting things.

"I've even seen it used for working with whole school assessment data that they could compare this with what we expected them to get. Look at the GCSE scores compared to the key stage 2 SAT scores. Produce me a scatter plot. You don't want to have their identifying individual points by pupil name, but seeing the overall pattern, I think is a really powerful insight for school leadership teams."

Joseph Arday, Computer Science Teacher:

“I use AI myself personally to produce a school commercial campaign in a data bank campaign and to inform parents about free data over Christmas. I produced a little video using in AI, so I typed in AI for example, can you show me what an image would look like a poster to promote this, put in a few prompts and then generated a few ideas and then I sort of went a bit deeper into terms of like, you know, I wanted to know what are the buzzwords that stand out. So I looked at various AI tools, so I've used it myself to promote stuff.”

Presenter: When selecting the tools to do these tasks with our own source material, we should always make sure that the AI tool that we use doesn't learn from our prompts, which could include copyrighted work, they should also meet the DfE's product safety expectations, and be approved for our use by our education setting.

Free tools, in particular, will often learn from our inputs and could lead to data breaches. By bearing this in mind we can ensure that AI supports our processes whilst protecting data and intellectual property.

Policy writing is another area where generative AI systems can provide support. Whether updating policies, drafting new ones, or responding to changes in legislation, AI can produce structured and coherent drafts. This means that you can concentrate on refining the content and understanding the implications for your setting.

It's important to ensure that the AI system has only been used to speed up the process of updating the policy, and that these changes are checked and where needed, iterated on either manually or by re-prompting of the AI system, as mentioned previously.

We mustn't outsource the thinking. You are still responsible for the content of the policy and ensuring it appropriate for the context.

Generative AI can also facilitate data analysis by identifying patterns in attendance, student performance, and wellbeing, and this capability enables school and college leaders to make data driven decisions that enhance the school or college operations and student outcomes.

In this example, the AI system may have access to special category data. Special category data under UK GDPR is sensitive personal data that needs extra protection. To process it, organisations must have a lawful basis under article six and meet an additional condition under article nine, such as explicit consent or legal requirement.

When selecting the tool for this task, it's important that it is approved by your setting, which means it does not train the model using your data that you enter, and that you have a lawful basis for using the data in this way.

Particular care is needed for these types of activities, and your school will also need to consider how the data is protected. It is important to be transparent about how you are using your student data.

When it comes to long-term planning, generative AI can help structure development plans and also handle the complexities of timetabling.

Planning school trips entails risk assessments, logistical arrangements and communication with parents. AI can support this process by generating checklists, itineraries and draft permission letters.

AI can also contribute to staff professional development by suggesting tailored CPD opportunities.

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