

Bias

A

What's the issue?

- AI model creators collect and select huge amounts of information and use this to 'train' an AI model.
- The information AI is trained on might come from large collections of scanned books, online message boards, and billions of photos and videos gathered from the Internet.
- Sometimes this information contains harmful ideas like racism or sexism, or it might not include enough information on particular cultures or languages. This is bias.
- Many AI models are 'fine tuned' after they are trained, using human feedback. AI model creators choose people to decide which kinds of responses from the model are better. An AI model's behaviour can be very different depending on who provides this feedback, and what they are asked to do.
- The bias in the data going into AI models and in the way they are used can mean that the things that generative AI creates or the decisions it is used to make are biased too.



Educational tools can have safety filters built in so that they don't produce too much harmful content unless someone tries to go around the filter.

I feel that the world is not fair, and AI just shows that back to us like a mirror. That is better than pretending bias isn't there.

A teacher knows to avoid bias but when AI generates a worksheet with lots of small problems in, they might not spot them all. AI content like this could reinforce unconscious bias.

What do people say about it?

I think teachers should always look at what the AI makes and because AI is supposed to save them time they could use the spare time to fix any bias in what it creates.

I read that some AI marking tools give worse marks to people whose first language is not English. They are also not as good at creating information on historical figures from marginalised cultures.

AI tools might give people different advice or support just depending on their name - because the name is associated with a particular culture or gender. That's not fair!



What do we say about it?

Discuss the different perspectives on the worksheet. **What other arguments do you think could be made about how this issue might affect the use of Generative AI in Education?**

Personalisation

B

What's the issue?

Generative AI can be used to create custom learning resources such as lessons, worksheets, quizzes or AI tutors. These can be adapted based on information about particular students or groups of students.

- AI tools could be used to create resources that reflect student's interests: e.g. maths problems themed around football, pets or music.
- AI tools could be used to adapt lessons for children with Special Educational Needs and Disabilities (SEND).
- Interactive AI studybots could ask questions that are at just the right level of difficulty for each pupil.
- AI tools could be used to make a catch-up handout for lessons you might have missed.

What do people say about it?



It makes it quick for teachers to make lessons just right for the class. If there are lots of different needs in the class, the teacher can quickly create adapted versions of the lesson.

If everyone gets their own AI-set tasks we don't get to learn as a group. I can't ask my friend for help because their worksheet will be different from mine.

AI tools don't *really* know you. Even with lots of data, AI tools can't be as creative as our teachers in finding ways to spark our interest. In reality, 'personalisation' is just putting us in boxes - it narrows what we get to engage with.

A teacher is still involved in deciding how to adapt a lesson, AI tools just give them suggestions specific to their students that they might not have thought of.

AI could give students feedback on their work right away: no waiting for the teacher. I feel like when I get feedback just for me, I can learn better.

I'm worried about AI taking away the professional role of teachers: and replacing it with personalisation that does not actually work that well. Education should have a human connection between teachers and learners.



What do we say about it?

Discuss the different perspectives on the worksheet. **What other arguments do you think could be made about how this issue might affect the use of Generative AI in Education?**

‘Cognitive offloading’

(Not thinking for ourselves)

C

What’s the issue?

When we use AI to answer questions, summarise something, or create something, we skip some of the thinking (cognition) we might have needed to do ourselves. This gets called ‘cognitive offloading’ and some people are worried about it.

- When teachers or students rely on AI to do work, they don’t spend as much time thinking in detail about the content of the work.
- This may mean that they don’t develop a full understanding of a topic. Over time, people will make less use of their own memory, problems-solving and creative skills.
- The brain is like any muscle: we have to use it to keep it strong!

What do people say about it?



AI isn’t there to replace thinking: just to support it. For example, I feel that if AI is taking notes for me then I can focus on listening to what is being said now.

Teachers using AI to mark work can save time to use for other tasks.

I don’t feel like my teacher is spending time on me or my work any more – everything goes through the computer.

We need to learn basic skills before we start relying on AI. If you don’t know the basics about something, then it is too easy to mistake a wrong AI answer for a right one.



When young people use AI for research they don’t develop critical thinking skills which are important for adult life. I think using AI will make us lazy. The point of writing notes or doing school work is to help your brain develop and learn.

When we can ‘offload’ some of our thinking to AI then we can focus on the important bits of learning. AI can break down tasks in ways that help us learn.

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Accuracy

D

What's the issue?

- Generative AI tools work by giving responses based on the next most probable word of a sentence, or pixel of an image. They do not have a concept of 'true' or 'false', even though it may feel that way.
- Generative AI models are trained to be convincing, so they can present false information in a very confident way. This is sometimes called 'hallucination'.
- It can be difficult for students (and teachers) to tell the difference between accurate information and falsehoods. More and more information on the Internet has been created or processed with generative AI, which is making it more difficult to research topics online and trust the results.
- Using wrong information generated by AI in learning resources or school work could lead to poor understanding or low marks.

What do people say about it?



Students should learn how to use AI by comparing its answers to information from trusted sources like textbooks or teachers.

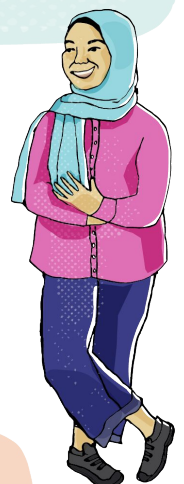
We can't get away from Generative AI: we need to learn skills for using it well - and that means using it while we are at school and college.

I've heard that AI tools are being updated all the time, and they are getting much better at being accurate.

I heard that generative AI does not 'know' the difference between what is true or not: the problem of hallucination is built-in and there is no easy way around it.

If AI is not accurate and students can't trust what the AI says they might end up believing lots of things that are not true.

Checking the accuracy of AI output takes teachers and students time, which defeats the purpose of using the AI to save time.



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Personal data & privacy

E

What's the issue?

To provide personalised feedback an AI tool needs information about you or your work.

- An AI tool to help write a school report might need access to lots of data from your work over the year, such as all your past marks.
- An AI marking app may send a copy of your work to the company providing the AI model that it uses.
- A personalised learning chatbot might store all the questions you ask it, and might learn a lot about you over time.

The rules set by many AI model companies don't allow use by children under 13, or require parent/guardian consent for under 18s. However, these rules are often not enforced.

What do people say about it?



Good AI tools will have privacy rules that make sure data about students is kept secure. It should be up to the school to agree to the terms of use.

It's worth giving access to data about each student so that AI can provide personalised responses. This can be particularly useful for students with English as a Second Language (ESL) or additional educational needs (SEND).

If AI is trained with work from pupils and teachers, then AI models could become better at supporting education for all ages. You should be able to opt-out of your data being used for training: there is usually a setting somewhere.

If information I provided to an AI tool was seen out of context by a future employer, university or partner it could cause all sorts of problems.

I have more than one side to me, and I should be in control of who gets to know what.

I don't know if I can trust companies with my data. Sometimes companies go bust and the data they have gets sold, or governments ask companies for access to their data.



What do we say about it?

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Cost

F

What's the issue?

- Many generative AI tools provide a mix of free and paid for versions: some AI companies offer subsidised premium versions for students.
- Some of the education AI tools used at school offer paid-for versions for homework that families might feel under pressure to buy. Not everyone can afford to use AI tools at home.
- Schools have to decide whether AI tools are value for money when choosing whether to pay for them out of the school budget.

What do people say about it?



AI tools might save much more money than they cost. Schools need evidence about what works to help them make decisions about what to buy.

What if a school becomes dependent on using a tool but want to switch to a different option in the future?

It's unfair if some pupils can afford AI tools at home and some can't.

It's not fair to ask students to use AI at home when some people might only be able to access free versions that include loads of ads and invasive data collection.

Some schools can afford access to the best AI tools, while others might not even be able to afford computers to be able to access free versions.



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Environmental impact

G

What's the issue?

Training and using generative AI models and tools uses a lot of electricity and water, and the energy demand for this seems to be increasing all the time.

- Lots of new data centres are being built because of increased use of AI.
- These use a lot of electricity. Not all of it is coming from renewable sources.
- Many data centres also need a lot of water to cool down the computer chips that get very hot when they are used.
- Data centres are often built on land which animals or people could enjoy.

What do people say about it?



Governments should be doing more to promote sustainable energy. It is not the fault of AI companies that the energy they need comes from non-renewable sources.

I heard that AI tools are getting more efficient all the time, and the environmental impact will come down in the future.

Lots of things we do use energy. We can't ignore the opportunity of AI because of its power use.

We need to use less energy, not more, if we are going to address climate change. AI is making it harder to avoid bad environmental impacts.

Using AI can use 10 times or more electricity than using a simple search engine, or looking something up in a book.

New data centres for AI are taking essential resources like water away from towns and cities and the public are being made to pay higher energy bills to cover the costs.



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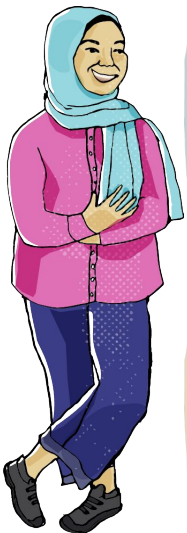
Safety & reliance

H

What's the issue?

- AI models can sometimes generate harmful content.
 - A chat bot could say something offensive or encourage someone to do something that is wrong.
 - AI-generated materials might include things that are inappropriate for the age of the students and that scares or worries them.
- There are reports of people relying on AI in ways that get in the way of human relationships.
- Personal data given to an AI tool could be hacked or lost in a data breach.
- Most AI models have not been trained with child safety or wellbeing as a priority.

What do people say about it?



Restricting the topics that AI can provide information on means that AI companies act as censors over what we can learn about, and that's not right.

Most educational AI tools have filters that should stop most harms.

Most AI tools are used by the teacher, not the student - and so they can keep us safe.

I'm worried my friends won't want to speak to me because they are talking to AI.

I don't think AI tools are made with children in mind. They might say inappropriate things.

AI shouldn't be seen as a source of advice or authority because it doesn't really care about us. It's too easy to become reliant on it.



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