Teacher Choices Trial Summaries:
Using ChatGPT in lesson preparation

NFER Classroom

Education Endowment Foundation

The Hg Foundation

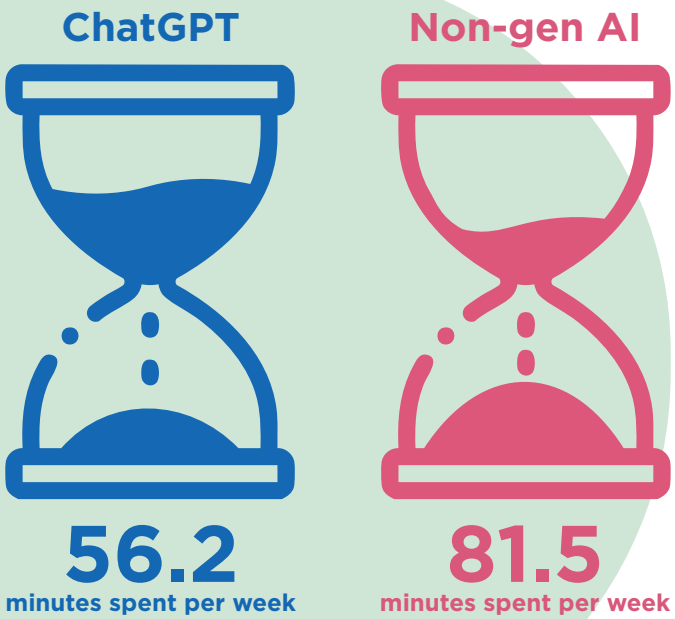
Does the use of ChatGPT for lesson preparation impact teacher planning time?

The aim of the ChatGPT in lesson preparation trial was to examine its impact on teacher lesson and resource preparation time, compared to not using any form of Generative AI (GenAI). This research provides a useful benchmark of ChatGPT use in teachers' lesson preparation journey.

What did we find?

What was the impact of using ChatGPT in this trial?

On average, teachers in the ChatGPT group spent 56.2 minutes per week preparing Year 7/8 science lessons, compared to 81.5 minutes for those in the non-GenAI group. This resulted in a time saving of 25.3 minutes per week, or 31%, in lesson and resource planning.



What did we do?

Schools were randomly allocated to one of two lesson planning approaches:

1. ChatGPT Approach

Teachers were asked to use ChatGPT to prepare science lesson resources and received access to the online guide (https://teachingwithchatgpt.org.uk/) developed by Bain & Company.

2. non-GenAI Approach

Teachers were asked not to use ChatGPT or any other form of GenAI to prepare science lesson resources. The ChatGPT guide was not shared with this group.

Teachers were asked not to do any more preparation than they would typically do for their lessons.

*ChatGPT models: We asked teachers to use ChatGPT 3.5, which was the free-to-use model in summer 2024. As of February 2025, users have (limited) free access to more advanced models (GPT-4o, o3-mini, and DALL-E) which allow image generation and a 'canvas' mode to edit formatted documents.

How did teachers use ChatGPT?

Teachers mainly used ChatGPT:

for about a third of their Year 7/8 science lessons on average.

to save time, refresh their teaching approaches, or tailor resources to their classes' needs.

to support one activity in a lesson, rather than the whole lesson.

to prepare questions and quizzes, generate ideas for activities, and adapt materials.

Teachers rarely refined their prompts to improve the quality of initial outputs generated by ChatGPT.

When teachers used ChatGPT less often, it was mainly because many of their resources were pre-prepared and due to limitations of the version of the free model at the time, such as the restrictive format of the outputs and lack of image generation.

Here are some ways teachers in this project used ChatGPT:

What can ChatGPT come up with?

I used ChatGPT to generate new questions and answers for familiar lessons. This has refreshed my lessons and made me more engaged with my teaching content. I enjoy the different ideas which ChatGPT generates.

How can I reduce my workload?

I was consciously managing my workload and initially saw ChatGPT as another task. Instead, ChatGPT saved me a lot of time when creating cover work, I will keep using it.

How can ChatGPT help me do this?

I used ChatGPT to more quickly tailor my school's lesson resources, to work for my low-attaining class. When prompted, ChatGPT generated simpler explanations, suggested engaging activities, and lowered the reading age of text for me. I think students are getting a better deal from the same planning time.

What will be your way of working with ChatGPT?

Who benefitted the most from using ChatGPT?

Teachers in the ChatGPT group were more likely to spend less time preparing lessons if:

- they used ChatGPT to prepare more of their lessons and had a strong understanding of the ChatGPT teacher guide content,
- or they were confident in using technology,
- or they were less confident in their science subject knowledge.

What did teachers think of using ChatGPT?

About half of teachers found it easy to write good prompts for ChatGPT and to review ChatGPT outputs.

Three-quarters of teachers were positive about the impact of ChatGPT on their lesson preparation, and nearly half agreed it supported creative and tailored teaching.

For some teachers, the saved time reduced their workload, while others used it for marking or admin tasks.

Teachers found the guide useful for learning about how to use ChatGPT, and relevant to their lesson preparation.

How was lesson quality impacted?

We collected examples of the lesson resources that teachers had produced during the trial. These were ranked by a panel of science teachers, who were not aware of the project's purpose. When we analysed these, we found no evidence of a difference in lesson resource quality between the two groups.

What can we learn from the trial?

Teachers using ChatGPT in the trial cut lesson planning time by 31%, on average. This time saving was achieved with relatively modest use - typically to prepare for a single activity or aspect within a third of lessons.

Teachers used ChatGPT in different ways to suit their planning needs: to tailor lessons, save time, or refresh their teaching approaches. They used it as another tool in their kit alongside their existing sources of information. Given this flexibility, most teachers were positive about the impact on lesson preparation and intended to continue using ChatGPT in the future.

Practical considerations of using ChatGPT in lesson preparation

Many resources can support the use of ChatGPT and other AI tools, including the guide used in this trial which includes examples from across different subjects and key stages.

You don't have to use ChatGPT for everything to see a benefit. Teachers in this project found that using ChatGPT for even a small amount of planning could save them time. Other resources, and teacher experience and professionalism, will continue to be crucial for lesson preparation.

You can use ChatGPT in different ways, attuned to your planning needs. Try starting small: teachers in our research found it useful for finding ideas for activities, and for creating quizzes for their class.

If ChatGPT doesn't give you the output you want the first time, try amending or refining your prompt, or giving additional instructions. You can ask it to adjust the level of detail, the reading age or focus.

Share learning and talk to colleagues about what works and what doesn't. Teachers in this trial reported benefits of collaborating with colleagues, including sharing ChatGPT prompts which had worked well.

Another potential use of GenAI not covered by this trial could be for wider curriculum planning and use in other subjects such as English, Geography and History.

School leaders might consider how to support teachers in learning to use GenAI, including those who may be less confident in using technology or those less confident in the subject.

Remember

- ChatGPT and other AI tools rely on their training data and can make mistakes or "hallucinate" facts, so check outputs for accuracy before using them.
- AI tools such as ChatGPT save data that users input into the prompts. Therefore consider what you are including – personal data such as pupil details should not be entered.
- Always follow your schools' policies on data protection and (if available) use of AI.

Who took part in the trial?

A total of 259 teachers from 68 secondary schools, teaching Year 7/8 science, participated in this trial for ten weeks over the summer term 2024. Most teachers in the trial were new to using GenAI for lesson preparation. At the start of the trial, on average, teachers taught Year 7/8 science for 5 hours a week and spent about 2 hours preparing for those lessons. Most teachers in the trial used at least some lesson resources that were already prepared before the lesson.

What are the limitations of the study?

This project involved KS3 science teachers – results may vary for other subjects and key stages. This trial took place during the summer term where teachers may have experienced a change in their workload due to end-of-year exams. This is likely to have affected both groups similarly.

The analysis showed that there was no difference in the quality of the lesson resources between the two groups but this is limited by lower-than-expected plan submission rates. Teachers likely sent us only their best resources, which might have artificially improved the quality of resources supplied.

While it is possible that the results of this study are transferable to other, similar AI tools, this has not been tested.

Find out more

To learn more about this study and its findings, read the full trial report on our website: **https://bit.ly/4i9ucnL**

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