



Modelling evidence-based practice in initial teacher training: causal effects on teachers' skills, knowledge and self-efficacy

Sam Sims, Harry Fletcher-Wood,
Thomas Godfrey-Faussett, Peps Mccrea
and Stefanie Meliss

2023

Foreword

When I first qualified as a teacher, there was very little focus on modelling to our pupils. Thanks to advances in cognitive science research, it's now commonplace to see teachers demonstrating exactly how they would build up an argument, approach a problem, or analyse a text.

Curiously, professional learning for teachers has been slow to catch up. When I think about most of the professional development I have attended over the years, there has been an emphasis on knowledge, theory, discussion, or reflection, but rarely an opportunity to really see great practice – to observe it being modelled.

This new research from Ambition Institute is therefore an exciting addition to the evidence base for teacher educators, and anyone interested in the science of learning. It shows us that models improve teachers' acquisition of new skills – turning a good bet into a proven strategy for the first time.

By zooming into the nuts and bolts of professional development design, research of this kind gives us specific and causal evidence and clear, actionable advice that is invaluable for teacher educators. In the same way that research has empowered teachers to design better lessons, research like this can empower teacher educators to make evidence-informed decisions that help teachers to keep getting better.

I am delighted to introduce this first output from Ambition's new Research team, and look forward to using it to guide the design of our professional learning at Greenwood Academies Trust.

Jade Pearce

Director of Programmes,
Greenwood Academies Trust

What is modelling and why should teacher educators care about it?

Models are observable examples of a specific teaching practice. Some models are 'live' in that they are delivered in person. For example, when a trainee teacher observes a more experienced colleague teaching a lesson. Other models are captured in videos. For example, the My Teaching Partner coaching programme includes a library of video models.

One distinctive feature of video models is that they can be directly annotated in a way that would be difficult to do with live classroom teaching. This allows teacher educators to draw teachers' attention to different aspects of the teaching practice depicted in the model and explain the reasoning behind them.

Whether they are live, recorded, or annotated, models are thought to help teachers develop a mental 'image' of the focal teaching practice, which can then support them with putting theory into practice. As a result, influential theories suggest that models should be incorporated into both initial and continuing teacher professional development.

In practice, however, there is currently no consensus on whether teacher professional development should include models. Two thirds of evaluated professional development programmes include models; one third do not. In this research, we set out to provide the first evidence on whether and how models are beneficial.

How did we research modelling in this study?

Ambition Institute set out to compare how different types of models can support early career teachers in developing evidence-based teaching practices.

We focused on a particularly well-researched area of teaching: prompting pupils to retrieve prior learning, with the aim of improving retention.

We began by recruiting 89 primary-phase initial teacher trainees and asking them to read a three-page evidence summary, which set out five principles of effective questioning for retrieval. The trainee teachers then took part in a mixed-reality classroom simulator exercise in which they were tasked with asking a set of questions to some simulated pupils. We asked them to do this in a way that would encourage students to retrieve what they already knew and to use the evidence summary to guide their practice.

We then measured how well the trainee teachers did in the simulator by comparing their practice with the recommendations in the evidence summary. We also measured the trainee teachers' confidence in using questioning for retrieval.

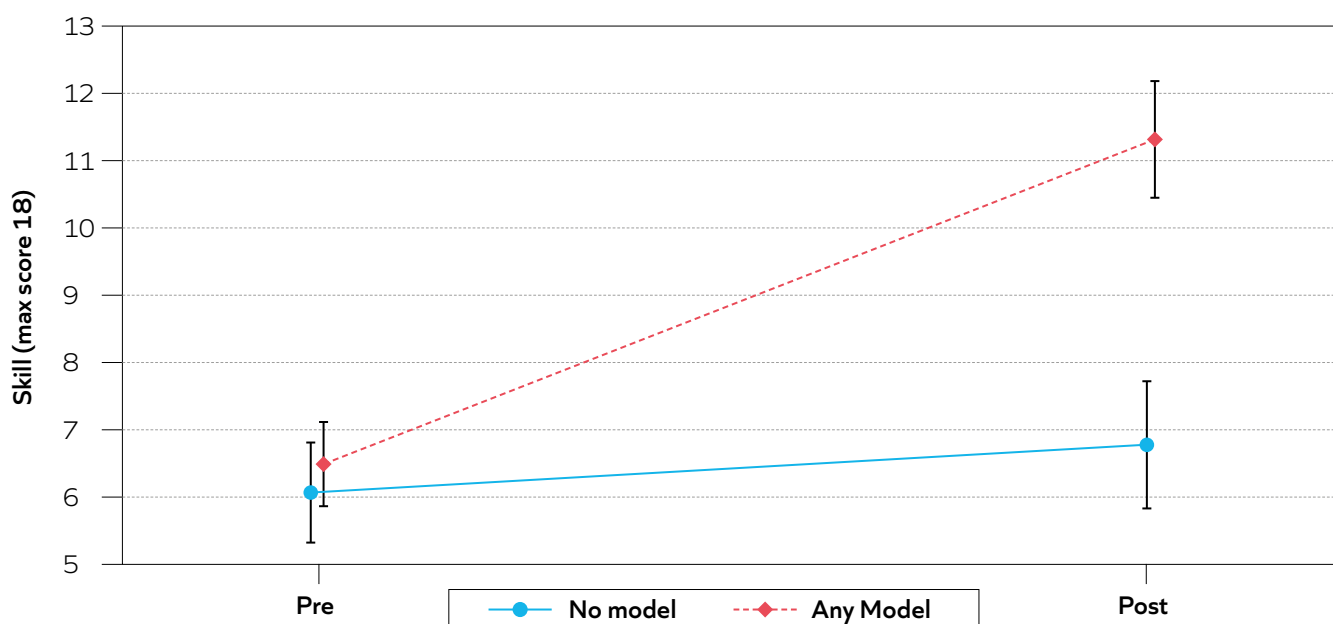
We then randomly divided the 89 trainee teachers into three comparable groups:

- > Group 1 had a second chance to read the evidence summary.
- > Group 2 watched a video model of a teacher using questioning for retrieval in a way that aligned with the recommendations in the evidence summary document.
- > Group 3 watched the same video model but with annotations added in certain places to draw attention to, and explain the reasoning behind, different aspects of the teaching practice shown in the model. For example, the video shows a teacher posing a question and then pausing for three seconds before selecting a pupil to respond. The video then cuts away to show the following text: "By waiting three seconds after posing a question, the teacher gives all pupils sufficient time to attempt retrieval".

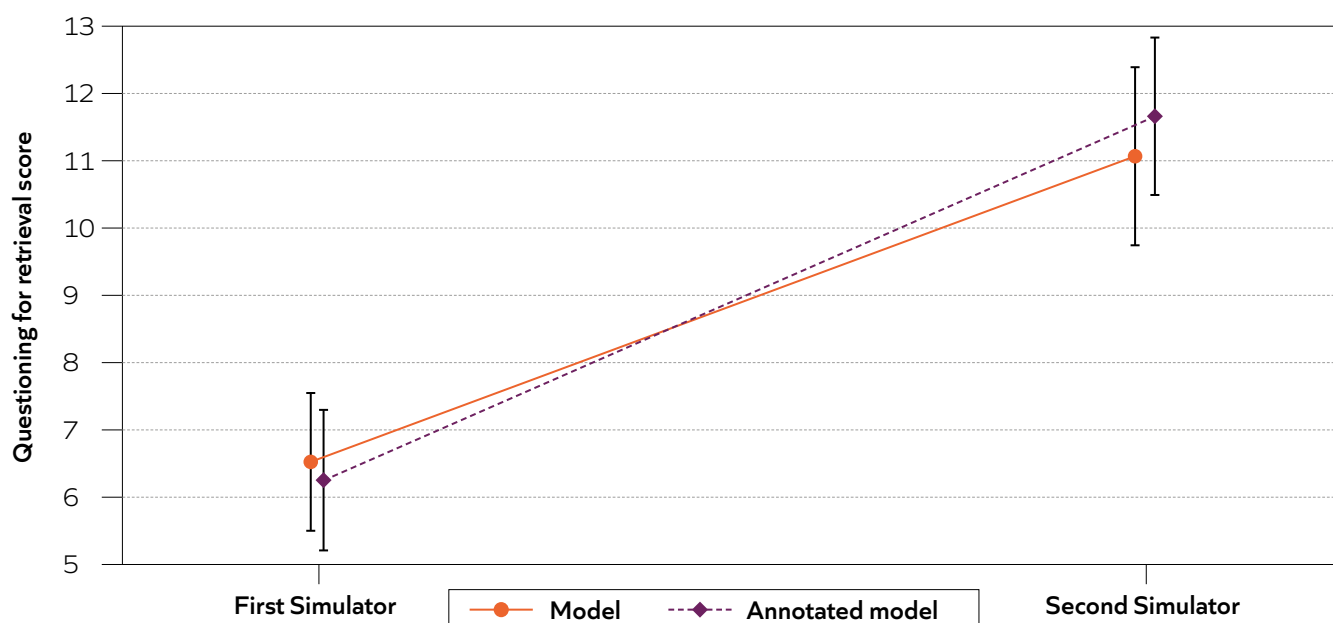
We then asked all of the trainee teachers to have a second go at using questioning for retrieval in the classroom simulator and measured how much they had improved.

What did we learn about modelling from this study?

This study provides the first evidence of the benefits of adding modelling to teacher training. We found that trainee teachers exposed to the video models (groups 2 and 3) did twice as well in their second simulator attempt, relative to the trainee teachers who did not watch a video model (group 1). However, we found no difference in trainee teachers' confidence in using retrieval practice depending on whether they watched a video model or not.



This study also provides the first evidence on the benefits of adding annotations to video models. We found no difference in performance between group 2 (who watched a video model with no annotations) to those in group 3 (who watched a video model with annotations). The two groups improved by the same amount between their first and second simulator attempts.



What should teacher educators do differently as a result of this study?

Teacher educators should seriously consider incorporating models into teacher training aimed at supporting teachers' use of evidence-based practices. While the participants in our study were in their first year of teacher training, we believe that this finding may also apply to early career teachers more generally. Likewise, while we tested video models, we believe this finding may also apply to equivalent live models.

Teacher training programmes might consider incorporating libraries of video models exemplifying good practice. There may also be a case for developing libraries of video models of evidence-based teaching techniques that are publicly available to all trainees.

Our research suggests that it may not be necessary to annotate video models. However, we would advise teacher educators to interpret this finding with caution.


In our experiment, trainees had already read about the effective use of questioning for retrieval in the evidence summary prior to watching the video model. The trainee teachers therefore knew (to some extent) what to look for in the video models, and why the teacher in the video was doing things a certain way. In such scenarios, annotating models appears to be unnecessary.

By contrast, in less structured and more realistic scenarios, for example while observing a lesson, it may still be helpful for teacher educators to highlight and explain certain aspects of their practice after the lesson, to help trainee teachers make sense of what they have seen in the model.

You can read the full research report here:

https://s3.eu-west-2.amazonaws.com/ambition-institute/documents/research_modelling_evidence_based_practice.pdf?utm_source=Website&utm_medium=Direct&utm_content=research_modelling_evidence_based_practice&utm_campaign=researchteam_2023

Download now



Evidence is at the heart of what we do at Ambition Institute. Through our research we want to push forward our collective knowledge of effective professional development and share what works, to turn evidence into action. We aim to answer important questions faced by the sector, help teachers and leaders to address disadvantage, and show the impact of evidence-informed teaching.

LEARN MORE

Get in touch today to find out how you can nominate your staff, or yourself, for one of our programmes.

🌐 ambition.org.uk

✉ info@ambition.org.uk

☎ 020 3668 6865

🐦 @Ambition_Inst



**Ambition
Institute**

**KEEP
GETTING
BETTER**