Ambition Institute

Summary for educators



Do advance organisers help teachers learn new information during online professional development?

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Foreword

In the current education landscape, where online professional development has become increasingly prevalent, it is crucial to explore various strategies that can enhance teachers' learning experiences and outcomes. This research paper investigates one such strategy: the use of advance organisers in online professional development settings.

While the use of advance organisers in the classroom has been researched for a long time, there has been little work so far on how they might support teacher professional development. This study presents a nuanced picture of their effectiveness, and seeks to identify some potential areas of future study within the specific context of remote professional development.

Importantly, this research highlights the complexities and challenges inherent in applying academic evidence to practical teaching scenarios. It also underscores the necessity for transparency and specificity in research methodologies to enable practitioners to effectively translate findings into practice.

As we navigate the evolving landscape of teacher education, this study serves as a critical reminder of the importance of ongoing research and adaptation. It encourages educators to remain open to new evidence, to rigorously test new approaches, and to prioritise methods that are demonstrably effective in fostering teacher learning and, ultimately, student success.

I am pleased to present this comprehensive analysis from Ambition Institute. It is the first step in gaining a deeper understanding of both the nature of effective AOs and the ways in which they interact with effective remote teacher development.

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Read the research in full at: **ambition.org.uk/research-advance-organisers**

What are advance organisers (AOs) and why might they be useful for teacher educators?

An advance organiser (AO) is a tool to help a learner understand new information by connecting it to what they already know. AOs are introduced before the to-be-learned material during the initial phase of instruction to improve learning. AOs are a diverse category spanning for instance analogies, examples or concept maps. AOs provide a scaffold to integrate the new information by activating prior knowledge (Cannon-Bowers et al., 1998; Gurlitt, 2012; Jung et al., 2022). Indeed, many teachers may have previously come across AOs and used them in the classroom.

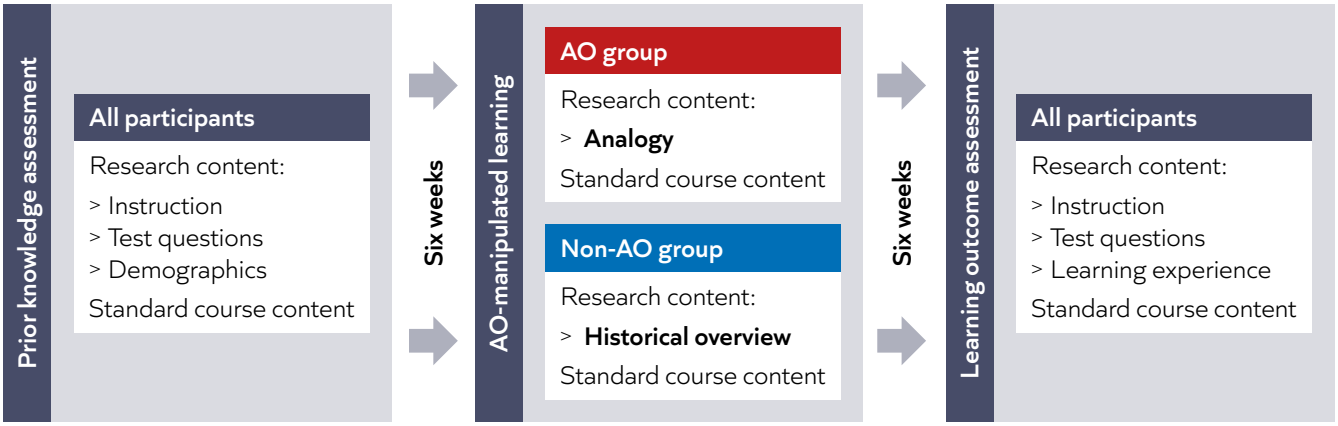
Because AOs are thought to improve learning of new information, they are potentially very useful for helping professionals learn new bodies of material as part of their training. For example, teachers may be learning about reading instruction, an area that involves specialist technical terms (morpheme, phoneme, etc.), understanding of numerous interacting subskills (vocabulary, fluency, etc.), and a sizable body of empirical evidence (such as systematic synthetic phonics). Making sense of, and remembering, this large body of knowledge is challenging. AOs represent a potentially promising way of making this task more manageable for teachers, which would in turn be beneficial for their pupils. The increase in online professional development for teachers since the pandemic makes AOs particularly relevant to the learning design challenges currently faced by teacher educators (Bragg et al., 2021; Brown et al., 2021).

How did we research advance organisers in this study?

Ambition Institute set out to compare how different types of introductory materials can support teachers in learning and understanding new information in real-life online professional development settings. We focused on a particularly well-researched area of teaching: reading instruction. We recruited teachers enrolled in an Ambition Institute programme focused on leading literacy instruction. The research project was fully embedded in the online learning environment used to deliver asynchronous programme content, that is, content that teachers engage with independently at a time that suits their schedule. As part of the research project, consenting teachers first completed a prior knowledge assessment. We then randomly divided the $N = 134$ teachers into two groups:

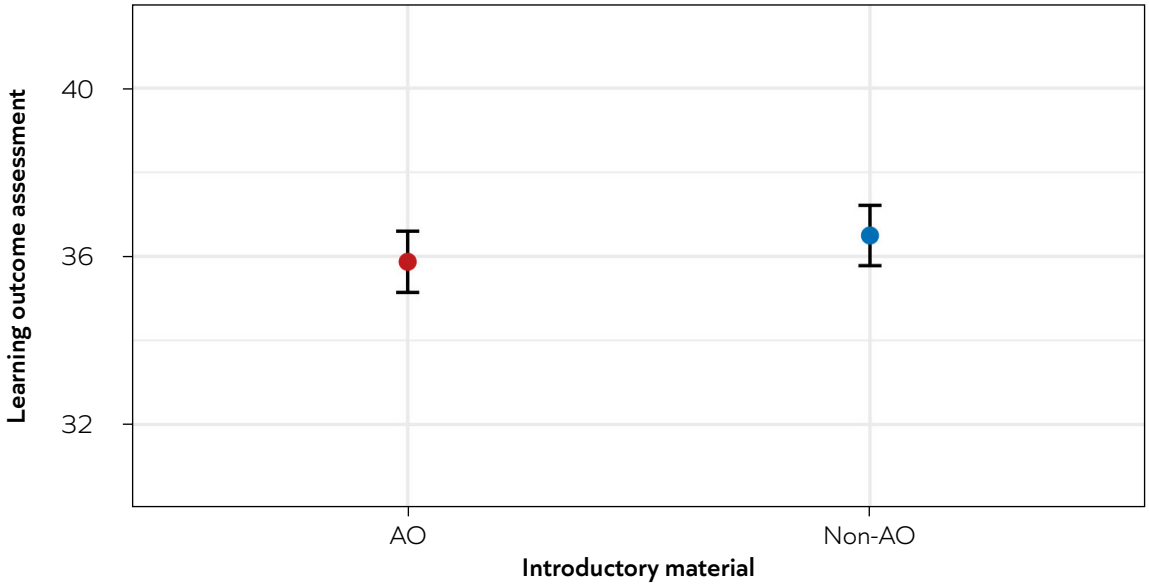
- The **AO group** was presented with an analogy based on the similarities between teaching someone to drive and teaching someone to read in so far that (1) both involve a complex, interacting array of knowledge and skills and (2) both are not capabilities that come naturally to most people.
- The **non-AO group** was presented with a historical overview that discussed the development of literacy and the societal progress as two mutually reinforcing processes.

Both groups saw the assigned introductory material ahead of the to-be-learned material. The to-be-learned material was a summary of scientific evidence related to how pupils learn to read. We then asked participants to complete a learning outcome assessment to measure how much of the information presented in the evidence summary they retained. We also asked teachers about their learning experience. This graphic shows the overall design of the study:



What did we learn about advance organisers from this study?

This study provides evidence on the effects of adding advance organisers to online learning materials. After adjusting for outcomes on the prior knowledge assessment, we found no significant difference in learning outcomes between the groups.



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

Based on the results of our study, adding an AO to online professional development for teachers is unlikely to improve learning, even where teachers had little prior knowledge of the topic. The learning material used in the context of this study was of high quality and well organised. It is possible that this made the exposure to an AO less effective (for example, Mayer, 1978). Likewise, it may be possible to design more effective AOs than the one we used in our study. However, this would suggest that current evidence in this area does not yet provide clear guidance on how to reliably design effective AOs. In the absence of better theoretical guidance on how to put these ideas into practice, teacher educators may struggle to make productive use of them.

This finding of no effect can potentially help teacher educators better prioritise the investments they make in designing new materials. In particular, teacher educators looking to improve the presentation of online information may find it more valuable to explore related (but distinct) bodies of evidence addressing how to sequence learning materials (Zhong, 2023) or how to design effective multi-media learning more broadly (Noetel et al., 2022).

More generally, this study serves as a useful reminder of the challenges involved in drawing on academic evidence to design learning materials. Many of the older empirical studies in this literature did not publish the specific AO they used. This leaves teacher educators to make informed guesses about how to design new AOs. Generally speaking, we would recommend that teacher educators place greater weight on evidence from studies that make publicly available the materials (such as AOs) that they use in their experiments, as this minimises the potential for any benefit to get lost in translation.

While our results indicate that AOs did not help in the context of teacher professional development online, this does not necessarily mean that AOs are not a beneficial tool when used in the classroom. Evaluating this was beyond the scope of the research.

If you would like to learn more about this research, please read the full research report that also contains the materials utilised in this project. **ambition.org.uk/research-advance-organisers**

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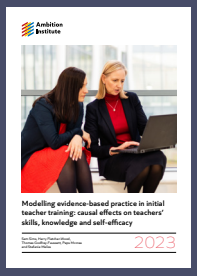
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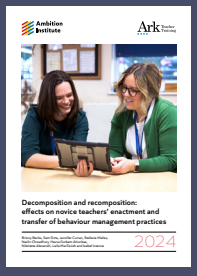
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Evidence is at the heart of what we do at Ambition Institute. Through our research we want to push forward our collective knowledge of effective professional development and share what works, to turn evidence into action. We aim to answer important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



Does adding modelling to professional development help to bridge the theory-practice gap? Our study looked at the practice of initial teacher trainees who used video models to develop their retrieval practice skills.



This research explores whether breaking down (decomposing) and then recombining teaching practices into a different sequence of teaching (recomposition) can help teachers apply what they have learnt to new contexts.

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