WHY PRE-TESTS MIGHT HELP LEARNING

By teacherCPDacademy.com

Emerging research indicates that pre-tests help learning. But what are they? And why might they be an effective teaching strategy?

Researchers have indicated that pre-testing may help prime your students for learning, identify their knowledge gaps and tailor your instruction to their needs. Read on to learn more about:

- Pre-tests vs Retrieval Practice
- The benefits of pre-testing
- Why pre-testing may work

HOW DO PRE-TESTS DIFFER FROM RETRIEVAL PRACTICE?

Pre-testing, also known as pre-questioning or pre-retrieval, is a strategy where students are tested on a particular topic before they receive instruction on it.

Retrieval Practice is another powerful learning strategy where students actively recall information from memory after having learnt the content, thereby strengthening their memory retention and promoting long-term learning.

The two may sound similar on the surface. Both involve students getting a question and generating an answer. However, there are some significant differences between them, the main one being:

- Pre-tests involve questions about material that students haven't been taught yet.
- Retrieval Practice involves questions about material that they have already learnt.

WHY MIGHT PRE-TESTING HELP LEARNING?

Research on pre-testing is still in its early stages, but is growing at speed, with many studies suggesting that it may be a highly beneficial way to start a lesson. At this stage, we don't know for sure why it might help learning, but several studies that have given us some good indication. Here are some possible reasons:

1. Predicting stimulates curiosity

One recent study explored the role that prediction has on learning. They suggest that the act of predicting can pique students' curiosity. When your students make predictions during a pre-test, they are prompted to form hypotheses and guess what a likely outcome will be. This cognitive activity can ignite their curiosity, motivating them to seek answers and learn more.

The beauty of this approach is that it may not matter too much whether your students' predictions are correct or not. The simple act of predicting can stimulate curiosity.

2. The Hypercorrection Effect

Another fascinating aspect of using prediction in pre-tests is the potential to boost learning surprise. Learning surprise refers to the moment when students discover that their prediction was incorrect – a moment that can significantly enhance learning if managed well.

This is known as the "Hypercorrection Effect". This describes that receiving corrective feedback on an incorrect answer that they strongly believed was correct can help ingrain the correct information in students' memory, due to the contradiction with their initial prediction.

3. Pre-testing increases student attention (both in and out of lessons)

Pre-testing may also activate your students' existing knowledge by drawing their attention to what they should remember from

a lesson. One recent study found that students performed 10% better on questions they had been pre-tested on compared to control questions. Interestingly, these results also transferred to questions merely related to those on a pre-test, with students performing 8% better.

This latter study found that it can improve attention both during the lesson (by signalling what is important content to focus on) and, for older students, outside of lessons. This is because pre-testing prompted students to spend more time studying the content before their next lesson. In fact, half of them reported searching for the answers to the pre-test questions they were asked in the study, making an extra effort to study this material, and/or discussing the pre-test questions with other students.

4. Pre-testing may improve Metacognition

Pre-tests can help students to recognise what they do and don't know, therefore helping build a strong and accurate foundation for future learning. This metacognitive awareness could be beneficial, as students become more conscious of gaps in their own knowledge.

5. Pre-testing may improve self-esteem

Recently, a SENCo told us that they thought pre-tests may be really beneficial for their struggling students, as it could help provide empirical proof for them about how far they have come in their learning. Being able to see the difference between what they currently know and what they used to know could help motivate them in the future.

However, it's important to keep in mind that the experience of making errors is often undesirable for students, even when they're aware that these are part of the learning process. This provides an interesting challenge for using pre-tests; if the overall effect on student motivation is negative, this can reduce or even completely negate any benefit.

FINAL THOUGHTS

It is early but encouraging days for pre-test research. Evidence suggests that it may benefit students of various ages, from infant school all the way up to university. Furthermore, research has also shown that pre-testing can be effectively delivered in a number of different ways, from digital quizzes for large classes to simple, low-tech paper-and-pencil activities.

As more research emerges, both our understanding of why pre-testing works and how best to apply it in a classroom environment will only improve.