

GETTING ALL STUDENTS TO THINK HARDER WITH GOOD QUESTION DESIGN

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What makes a really good question? How do we ensure that we get as many students cognitively engaged as possible? And can subtle tweaks in the way you ask questions help your students feel more confident when they answer?

Given that asking questions is the primary vehicle for Retrieval Practice, which continues to be one of the best bets for students learning, it is essential that we consider how to do it best. Lately, there has been a renewed interest amongst teachers for using a questioning method known as Cold-Calling, which is when a teacher solicits an answer from a student who hadn't raised their hand to answer the question.

This article looks at three different approaches to using Cold-Calling, with each one tweaking the structure of your question and building on the last...

THINKING ABOUT AN ANSWER + WAIT TIME + COLD-CALLING

There are certain situations where it would be beneficial to have students think of an answer to a question (instead of writing it down). These may include for younger students who haven't developed their writing skills, for example. This type of questioning is known in the research as "covert Retrieval Practice".

However, it is worth noting that when we ask students to think of an answer, if we tell them at the start of the question who we want an answer from, we subconsciously give the rest of class permission to switch off, as they know they are not going to be asked for an answer. As a result, they don't have to recall the

information and so miss out of the benefit of Retrieval Practice. In fact, it is likely that only the student you ask gains anything from it.

By contrast, if we use the student's name at the end of the question, we increase the amount of time the rest of the class are being asked to recall the answer. Despite the fact that they are subsequently not chosen, more of them have still engaged in this Retrieval Practice. This means both the students you ask the question to and the majority of the class are reflecting on the task for longer.

Some worry that Cold-Calling can increase students' stress levels, as the thought of being put on the spot can make them feel uncomfortable. This may well be the case if:

- It is not done in a supportive and inclusive environment
- It was a one-off event

However, evidence does suggest that being part of a classroom that repeatedly uses Cold-Calling can actually help students feel more comfortable in participating. So, make sure to use Cold-Calling often to make it a norm in your classroom.

WRITING THE ANSWER DOWN + LONG WAIT TIME + COLD-CALLING

Overt Retrieval Practice is where students write down their answer to a question. So, under the right specific conditions, why might having students write down their answer be a useful strategy? There are four different, but probably related answers...

1. *It helps ensure that all students are retrieving information* – When students are asked to retrieve covertly (i.e., thinking of an answer), we cannot be 100% sure that they are in fact retrieving. For all we know, at any given time, students may be thinking about something else.

2. *It helps the teacher asking the question to slow down and not rush their wait time* – Given that there is some evidence that some wait-times are akin to the speed of an F1 pit stop, this could provide a very valuable strategy.

Teacher self-discipline is a big factor in effective wait times, as it can be difficult not to jump in and solicit an answer too quickly. As it takes longer to write an answer than to say one, this helps slow down the whole process.


3. *Students can cover a broader range and larger depth of information* – Due to the constraints of working memory, holding an answer in your head is always destined to be somewhat limited. Writing down their answer can help students mitigate this effect.

4. *Overt retrieval may potentially lead to a memory boost* – If this was to be the case, it would be because of an increase in desirable difficulty, as well as utilisation of [the Production Effect](#) (which states that by producing something new with the information, students are more likely to remember it). However, it should be noted that the potential memory benefit to overt retrieval over covert retrieval is still relatively thin, with a clear consensus yet to be achieved. So, more studies are definitely needed (if you want to read some of the studies on overt retrieval check out [this interesting 2022 paper](#) and [this fascinating research journal](#)).

WRITING THE ANSWER DOWN + LONG WAIT TIME + COLD-CALLING WITH A FORMATIVE PROMPT

A formative prompt is a sentence that encourages students to start the conversation. It gets the ball rolling and inspires students to share their thoughts. It can help reduce the fear of failure as perfection is neither required nor expected. It essentially lowers the stakes for the student being asked, and as such can reduce their anxiety of being Cold-Called.

Formative prompts also have a secondary purpose. By phrasing the sentence as “Laura, let’s start with you” it also signals to the other students that they have to pay attention to Laura’s answer: this is just the start of the conversation, and they may be called upon to build on Laura’s answer. This ensures higher levels of concentration.



Formative prompts work best for open-ended questions. This is because formative prompts rely on students to build on each other's answer. This would be difficult to do for factual closed questions. Therefore, you need to carefully consider the nature and format of the question you're asking.

FINAL THOUGHTS

When asking questions in the classroom, getting your students to write down their answer, increasing wait times and using formative prompts are all strategies that, if done well, can increase student concentration, reach a sweet spot of desirable difficulty and facilitate richer classroom discussions. It definitely takes a bit longer to implement, but the learning rewards it offers make it a strategy all teachers would do well to have in their locker.

This blog was co-written by [Bradley Busch](#) ([InnerDrive](#)) and [Doug Lemov](#) ([Teach Like a Champion](#)).