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Want pupils to pay more attention? Change it up

Getting and holding pupils' attention is only half the battle – they also need to file it away in their memory. To achieve this, originality and unpredictability in the classroom is key, finds Zofia Niemtus

Picture yourself at a friend's party, in a crowded room. You're having a conversation with someone and are fully focused on what they are saying. Your brain is tuning out all of the surrounding noise, enabling you to zero in on the words being spoken by that person.

Suddenly, you hear your name mentioned in a conversation nearby. Your ears prick up. Despite myriad sounds around you, your brain has detected a seemingly relevant piece of information (your name) from the auditory jumble and immediately shifted your attention.

Both of these processes – the initial tuning out of other sounds and the response to hearing your name – are part of what is colloquially known as the "cocktail-party effect". It's a neurological process in which the brain puts different stimuli into different streams, and decides which streams are most relevant while ignoring the others.

Clearly, it is a highly relevant process for teachers to grasp and Kimron Shapiro, chair of cognitive neuroscience at the School of Psychology, University of Birmingham, knows more about it than most.

People are able to focus both in space and time, he explains: "If you expect something to come from the left, you put more attention to the left, and similarly to the right if expecting something from that direction. You can also focus attention in time, so if you expect something to occur at a particular moment, you will concentrate your effort at that particular instant. And what that does is just focus the brain's resources on a particular modality or place or time and increase the ability to deal with whatever information is expected. That's what attention is all about."

Attention is the gateway to both short-term and long-term memory, he continues, so it's a vital consideration in any learning experience. If something isn't paid adequate attention, it's much less likely to get into memory and stay there to be recalled later.

"The flip side of attention is distraction," says Shapiro. "In a classroom setting, there will be many different forms of distraction. There will be external forms, like things being moved around, people moving from one place to another, people talking to you or shuffling chairs.

And then there are internal forms of distraction, too, like a personal problem that you're trying to sort out. There's very little doubt that anxiety drains attention, so if you're anxious about something, it is going to be demanding your attention, as you go over and over it in your mind."

Attention is best thought of as a limited resource, he suggests. That means that if you're battling an internal distraction, such as anxiety, you simply have less attention to pay to the external world. "And all of those things – external and internal – are going to stop you from attending to what you should be attending to [as a student], which is the teacher," he states.

So what can teachers do to hold pupils' attention? The simple, primary concern, Shapiro says, should be ensuring that the information being presented is, above all, interesting. "We all know that there's nothing worse than trying to attend to someone who's boring you to death," he says. "So, clearly, if what a teacher is saying is interesting, that's going to hold attention."

But "interesting" in a classroom setting can be defined in a number of ways, he adds. It can refer to the content, of course, but it can also describe the manner in which it is delivered. Modulating the pitch of your voice – up and down, loud and soft – can be an effective way to hold attention, as can circulating the room.

"It's always better to have to focus on someone moving around, maybe even walking down the aisle occasionally," he says. "If you want to get and hold students' attention, you want to mix things up. You don't want to keep doing the same sequence of exercises, but instead change the way it works."

Keep them on their toes

Shapiro gives his own teaching style as an example. He likes to drop unexpected questions on his class as a way of holding their attention. He'll turn to a student, mid-flow, to ask their thoughts on the topic being explored. No one in the room wants to be caught out by the next unexpected question, so attention and engagement increase.

This process is also linked to the "limited-resource principle", he explains, which holds that the brain is finely tuned to discover new associations and unpredictable elements while tuning out the things that seem familiar and commonplace.

"If every person that walked past you or every branch that moved in a tree attracted your attention, the world would be chaotic," he says. "So it's important that predictable things don't take up attention, to leave some available resource for the things that really do need attention, like decision-making, emergencies and so on.

“So if you’re doing the same thing over and over again, it becomes automatic and requires less attention. But things that are repeated are also less interesting; if the same thing happens every single time, you tend to notice it less.”

Even when you have got their attention, the process of moving information into memory can be complicated, as Shapiro and his colleagues discovered with their research into a phenomenon they named the “attentional blink”. The groundbreaking research, published in 1992, asked participants to identify two “target” letters in a rapidly flashing series. The team found that if the two letters were too close together, participants would miss the second one. Shapiro explains that the act of putting the first target into memory means you don’t have the resources to process the second.

“A real-world example of when the attentional blink could happen is during reading; when you’re reading, you’re moving your eyes very rapidly over the words at pretty much the same rate as we would present those letters to someone in an attentional-blink lab paradigm.

“So, if a particular word catches your attention, you may miss a few words after that. You are not likely to notice this, however, because there’s a lot of redundancy built into most reading material, so missing a few words is not often noticed.”

This effect could also be seen in a classroom situation, he continues, where the phenomenon may happen when you “learn something interesting and then miss the next thing that has been said”. As a student pauses to process one thing, even momentarily, they can miss the things that follow.

Ultimately, Shapiro says, teachers should become aware and plan for the fact that attention is a limited resource, that it is constantly competing with distractions – both internal and external – and that anything new and unpredictable is better than old and predictable when it comes to making memories.

“From that, you could extract that you should move a lot, switch up what you say and how you say it with your voice, or how you ask students questions,” he says. “But above all, remember that relevance is hugely important. Something relevant is going to be attended much more than things that are irrelevant.” And that’s as true in the classroom as it is at a cocktail party.

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