

What is the best way to motivate students in your subject?

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Motivation is a complicated beast. Traditionally broken into intrinsic and extrinsic types, students may be motivated by a whole host of competing and intertwined factors. The academic literature varies widely on these definitional terms and how they are measured (Garon-Carier, 2015; see also Didau and Rose, 2016). This is further confounded by a gap between what

people believe and what they actually do. For example, a recent and ongoing study into student attitudes to science education found that many students think that science is important and valuable, but do not wish to study it themselves (DeWitt, 2017).

Schools and teachers insert themselves into this cacophonous mix with often confusing and unpredictable results. For instance, a recent large-scale study of attendance interventions found that in schools where students were awarded for 100 per cent attendance, the attendance actually worsened over time. The researchers posit that social pressures (nobody wants to be 'that' student) can affect student motivation to attend. Furthermore, by rewarding 100 per cent, the schools were potentially signalling to students that actually less than 100 per cent was expected, and 100 per cent was above expected, worsening student motivation to attend (Robinson et al., 2018).

In curricular studies, some urge that content should be tailored to the students'

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lived experiences in order to boost motivation. However, such a position can betray the ‘power’ of our subjects, limiting students and failing to open their minds to broader horizons and cultural treasures (Young, 2018). Additionally, such ideas can be difficult to implement – students have a curriculum to follow, and lived experiences aren’t always going to be relevant.

An interesting avenue of pursuit relates to the relationship of student ability to long-term motivation. Ryan and Deci’s seminal research into Self-Determination Theory (Ryan and Deci, 2000) argues that a vital component of individual motivation is competence. For example, giving people encouraging feedback on their performance increases their motivation: the experience of competence, of being good at something, boosts motivation. Garon-Carrier et al. (2015) devised an experiment to test this idea. Defining intrinsic motivation in mathematics as engagement and interest in that subject, they found that motivation at the age of seven was no predictor of performance in mathematics some years later. However, performance at the age of seven *did* predict motivation some years later. Noting dissenting evidence, the researchers concluded that student performance – or competence – strongly affects whether or not they find interest in mathematics in the years to come.

Recently replicated (Nuutila et al., 2018), this experiment suggests that teachers and schools should be aware that one of the most powerful ways to ensure students become motivated in their subjects is through improving their competence in that subject. As such, it may be more important for teachers to think about the best techniques to improve student performance, rather than techniques to increase their short-term engagement or interest.

An interesting case for discussion could be the role of ‘drill’, or extensive independent practice. Often derided as ‘drill and kill’ techniques (see Little,

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2016), extensive silent, independent practice can be considered boring and demotivating and substituted for ‘engaging’ or ‘fun’ activities. This jars with the evidence base, which generally supports extensive individual practice (Willingham, 2010).

Arguing for an appropriation of the phrase ‘to drill and thrill’, maths teacher Dani Quinn (2017) argues that extensive and carefully designed drill can lead students to feel a sense of success. An interesting comparison here is retrieval practice. It is well known that low-stakes quizzing is a highly effective tool for leveraging long-term memory (Firth et al., 2017), but it is worth noting that in the seminal studies on the topic, participants who undertook retrieval practice actually reported lower confidence in

their abilities than those who undertook less effective memory activities, such as rereading or highlighting (Roediger and Butler, 2011). In the short term, challenging activities like retrieval practice can leave students feeling demotivated, or lacking in ‘competence’. In the long term, however, such activities are far more likely to bring improved student performance and, with it, a sense of competence and motivation.

The flip side of this is also true. Nuthall’s research (2007) revealed that students are most engaged when involved in work that carries minimal cognitive demand. Many activities touted as ‘fun and engaging’ do not adequately challenge students. As such, activities that appear beneficial in the short term are perhaps less so in the long term, and ones that appear ineffective in the short term may be highly effective in the long term.

In summary, motivation remains a complicated beast. But teachers should know that the day-to-day cycle of expert teaching – explain, practice, review – is a potential winner for building long-term interest and motivation.

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