McGraw Hill

Motivation and Engagement: Strategies to Success

A paper written in partnership with customers from Queen's College Belfast, Trinity College, Dublin City University and the University of Limerick.

How universities in Ireland are engaging students with Connect.

The transition from secondary education to higher education has always been a tricky one, even before Covid-19 added new difficulties and worries. For most students, it represents a huge leap into independence; moving from the highly directive, chaperoned environment of the school classroom to the relative anonymity of the university lecture hall. The responsibility for their learning shifts, with the onus on the student to self-manage, to engage autonomously in the work that is set for them, and to seek further help if required.

Students' success in achieving this depends, of course on a broad range of social, emotional and psychological factors – but research shows that key among these is motivation and engagement. Whether it's the intrinsic motivation of simply being interested in the subject they have chosen to study, or the extrinsic motivation of not wanting to be seen to fail, motivation matters.

Theories of motivation abound, and there is no doubt that it is a highly complex area that straddles many psychological disciplines – educational, cognitive, organisational – as well as neuroscience. Motivations may have a negative or positive bias, they may be intrinsic or extrinsic, they may be goal oriented or avoidance oriented, they may relate to mastery or performance. They may become internalised or remain completely external to the individual, or somewhere in between. They may be influenced by self-worth and expectancy, or by the value the individual has assigned to the outcome of task or goal achievement. What works for one may have the opposite effect on another, actually impacting negatively on motivation if it is perceived to reduce autonomy, or does not align with a person's self-conception, beliefs and values.

The motivation a student brings to the table is in fact multi-faceted, and experts believe that the different drivers for motivation should not be polarised but seen instead as a recipe, an interaction: "theorists […] have proposed that college students have multiple goals in learning; e.g., satisfying one's need for achievement, enhancing one's self-confidence, obtaining recognition and approval, avoiding flunking-out, obtaining knowledge and skills necessary for a job, confirming that one has studied appropriately, showing that one excels in comparison with other students, avoiding criticism from parents or negative reactions from peers, etc. Thus, it seems likely that intrinsic and extrinsic motivation, rather than being at opposite ends of a single dimension, may be much more complex in their relationships with one another and other variables affecting student achievement," says Lin *et al* (2003).[1]

While there are plenty of motivational constructs that could be leveraged by teachers hoping to spur their students on to greater commitment and engagement with their learning, it is difficult to observe and measure motivation without conducting a formal study. However, where teachers can get a reasonable proxy for motivation is through measuring engagement. In the past, this would have been a challenging and manual task, almost impossible across cohorts with hundreds of students but thanks to digital learning technology like Connect this is now easier than ever before. Over the past few years, we have seen increasing numbers of university departments in Ireland (and indeed across the world), adopting McGraw Hill's award-winning Connect platform for this very reason, and are already seeing the filter-through in terms of higher engagement and results.

1. Lin, Y.-G., McKeachie, W.J. and Kim, Y.C. (2003). College student intrinsic and/or extrinsic motivation and learning. Learning and Individual Differences, 13(3), pp.251–258.

Garry Sheahan, Senior Academic Consultant for McGraw Hill in Ireland, has been seeing the same challenges emerge across universities and colleges throughout the country over the past few years, with instructors increasingly frustrated that a growing proportion of students are engaging less with the required reading. "Reading has always been an essential part of academic study," says Garry, "but with Generation Z we're seeing the sociological impact of the digital revolution. It's a bit of a generalisation, but nevertheless true for a good many, that they tend to seek out synopsised, simplified information on the web rather than engage with the weekly set-reading of academic texts – often waiting until there is the pressure of an impending assessment before doing any reading at all. This might get them through their exams, but as we know – cramming does not equal learning, and it's not best for their studies in the long-term. In order to get the depth of understanding – and commit that learning to long-term memory, the students need to put the time into reading the core text or texts and ideally reading wider around the subject too. What I've been hearing from instructors for some time now is that they're really keen to find some way of motivating and supporting their students to do that."

This sentiment is one that is echoed by Tony Lorin, President, McGraw Hill International, who says: "The issue that this paper focuses on, of students and how much – or how little – they're truly engaging with learning resources is a crucial one and a consistent one across all the markets we serve." He points to 'quick-fix' solutions which enable students to superficially grasp information needed for the exams or for assessment but believes these tools don't "ensure that students truly master learning a topic, and develop solid foundations to support their understanding of more advanced concepts." For Tony, "Educators across the globe are looking to McGraw Hill for help solving this challenge. We're proud of the impact we have in partnering with those in education, and developing

solutions with them to support students' needs. This paper is really testament to the relationships we're able to forge to enhance learning outcomes."

In Ireland, Garry has been helping customers see how SmartBook in Connect is a simple but powerful answer to this widespread problem. "They can see straight away the potential for this to transform teaching and learning on their course. It's not just a 'nice to have' digital add-on, it's an actual approach to teaching. SmartBook becomes the centre-piece of their delivery."

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SmartBook 2.0 within Connect®

⬀ Instructors assign chapters, topics and subtopics that they want students to engage with.

⬀ Students are then directed to highlighted sections of text in line with the concepts the instructor has chosen and assigned.

⬀ Once students feel like they have read and understood sufficiently, they move to the questions section where the system will test their understanding with sophisticated, adaptive, and personalised questions.
If students start to struggle with the questions, they will be directed back to the reading component.

⬀ The system gets an understanding of how the student learns and where their strengths and weaknesses lie, and then adapts to support them through the exercise.

⬀ After the initial assignment is completed, the system generates a follow up assignment designed specifically to focus on each individual students areas of weakness.

SmartBook is available 24/7, online and offline and syncs between different devices.

On the back of highly positive feedback across the board, we have been speaking to our customers in Ireland to see what we can learn from them about how they motivate their students to engage with Connect and SmartBook – on the flip-side – how Connect and Smartbook have been impacting on student motivation. Several big themes have emerged, and we have taken the opportunity to look at how they fit with what we know about motivation science.

Making Connect an integrated part of the course

Lots of instructors have opted to make Connect an integral and compulsory part of the course, whether it's setting pre-readings as part of a flipped classroom approach or using Connect for ongoing or end-of-module assessment. What came across strongly from all of the instructors we spoke to is that students receive positive messages about Connect right from the start. The instructors explain to the class that the readings and assignments in Connect are there for their benefit and that by engaging fully they are likely learn more, learn better, and ultimately increase their chances of passing or excelling at the module.

Students will also often be given a crash-course in how to use the platform, with the McGraw Hill consultant always happy to help. "Setting the scene and introducing the platform is crucial to engagement and learners need to know what the platform does, be shown how to use it and therefore get the most benefit out of it," says Dr Linda Stewart, from the School of Biological Sciences at Queen's College Belfast, whose students receive a presentation during Welcome Week before the course begins.

There is a wide base of research indicating that autonomy and self-directivity are important elements of motivation whether in education, the workplace, or any other learning environment. And while making Connect compulsory might seem to be reducing student choice and increasing teacher control, Connect can in fact help teachers create an autonomous, supportive environment for their students. For example, a flipped classroom can make it easier for an educator to provide optimal conditions for students to experience the three psychological needs of autonomy, competence and relatedness that are the tenets of self-determination. With students responsible for coming to class prepared, Connect helps bolster students' sense of self-determination by giving them a more active role in their learning day-to-day. In turn, this means that the teacher has more time and opportunity in class to develop their feelings of competence through individual interactions, and their sense of relatedness through whole class work and discussions.

Dr Alejandra Ramos, Assistant Professor in Economics at Trinity College, who was nominated for a Provost's Teaching Award for her work in flipping the classroom, saw 95% engagement with the reading in Connect in her first year using it, rising to 100% in the second year. "Now my students get their reading done ahead of time, and we have one lecture where we focus on working out problems together. This affords me closer interactions with my students, and I can see the challenges they face and the things they are struggling with." she explains.

Additionally, while instructors can choose to set parameters for the minimum amount of time for students to spend reading and completing assignments in Connect, students are free to choose to spend additional time either practising in Connect or taking their studies further with the links to recommended additional learning materials.

Several of the instructors use Connect as part of their assessment – including exams – and describe how students like being able to take their test in a platform environment that is familiar to them as it reduces test anxiety. The more they have previously engaged, the more familiar it will be. My message to the students is "use it to your advantage," says Dublin City University's Dr Paul van Kampen. "I tell them they're given unlimited chances on the homework so there's no point relying heavily on your peers or looking for the answers online, because the environment will the same as the exam. It's really good for students to be using the same platform for their final exam they've been using beforehand."

How universities in Ireland are engaging students with Connect.

Building students' confidence as learners

A 2019 study by German academics published in the journal Frontiers in Psychology, looked at the relative importance of motivation constructs for academic achievement. Looking at almost 350 11th and 12th grade students from the highest academic track, they found that the biggest predictor for academic success was 'ability self-concept' – their belief that they could do it. (Steinmayr *et al*, 2019)[2] This agrees with the 'expectancy-value theory' of motivation, which postulates that "individuals' choice, persistence and performance can be explained by their beliefs about how well they will do on the activity and the extent to which they value the activity." (Wigfield and Eccles, 2000)[3]

It is important therefore, to build students' sense of themselves as scholars and as growing experts in their field. Before anything else, this involves helping students settle into good learning habits and develop their autonomous learning skills. Several of

the instructors we spoke to highlighted how good Connect is in supporting this. According to Dr Donal Palcic, Senior Lecturer in Economics at the University of Limerick: "The first year is a make-or-break year in terms of getting into good habits and not getting lost and Connect is brilliant for that. It's very, very structured, so they know exactly where they're at and what they need to do."

Emotions also play a strong role in motivation: when students feel overwhelmed, lost, or like they're falling behind, they are more likely to exhibit avoidance behaviour. A 2001 Canadian study found that "a sense of inadequacy, lack of control or lack of meaning could give rise to work avoidance [...] teachers who foster feelings of self-assuredness will be helping students develop learning goals. Students who feel less competent, bored or have little control will adopt work avoidant goals." (Seifert and O'Keefe, 2001).[4]

The interactivity of Connect and SmartBook is highly impactful in this respect – allowing students to take control of their own learning by keeping track of what they have and haven't mastered, with auto-marking and feedback enabling them to receive clarification and self-correct in the moment so that they can continue securely through their learning between classes. This ability to self-manage, to engage in interesting tasks online, and crucially, to form a realistic sense of where they are in their learning helps students feel grounded and capable, building their confidence.

Additionally, the reporting tools in Connect allow instructors to easily identify which of their students are at not engaging at all, giving them the opportunity

2. Steinmayr, R., Weidinger, A.F., Schwinger, M. and Spinath, B. (2019). The Importance of Students' Motivation for Their Academic Achievement – Replicating and Extending Previous Findings. Frontiers in Psychology, [online] 10(1730). Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6685139/

3. Wigfield, A. and Eccles, J.S. (2000). Expectancy–Value Theory of Achievement Motivation. Contemporary Educational Psychology, 25(1), pp.68–81.

4. Seifert, T.L. and O'Keefe, B.A. (2001). The relationship of work avoidance and learning goals to perceived competence, externality and meaning. British Journal of Educational Psychology, 71(1), pp.81–92.

to check what the reason behind their work avoidance is and target extra support. As Dr Palcic describes: "it takes a couple of weeks to build up the picture, but then you can identify the 50-60 students that don't seem to be doing any reading, and you can email them to find out if there are any issues. I remind them of my office hours and Q&A sessions, and that they can reach out to my team of teaching assistants. Some do come back, and they appreciate it."

And of course, as the year goes on, students will be motivated to continue engaging with Connect by the evidence of their own experience. Dr van Kampen highlights feedback from his students that they found the pre-reading using SmartBook in Connect extremely beneficial, especially the highlighting feature that draws students' attention directly to the most important and consequential bits of the text. Meanwhile Dr Ramos remarked that having done the pre-reading made students more likely to participate in class. And Dr Steward agrees: "Feedback from the students in the module review indicated that as well as enjoying using the platform they felt they had benefited academically."

Making Connect part of the grade

As Dr Palcic says: "There are always going to be students who engage of course - but you don't worry about them - they're highly motivated and they'll take advantage of everything. It's the middle and lower end of the spectrum students in terms of engagement that you really need to target with incentives."

A final aspect of extrinsic motivation applied by many of the instructors is to build engagement with Connect into the final course grade to at least some degree. For some, it is direct, with a portion of their grade tied to their pre-reading and homework efforts throughout the course. For others, it is the continuous assessments in Connect that contribute to the final module mark. And in one instance, although the work in Connect does not form part of the work per se, a weighting based on students' completion of the pre-reading and assignments is applied to the continuous assessment grade - so 100% completion of reading means the student receives 100% of their continuous assessment mark.

How does this square with the accepted ideas that autonomy and intrinsic motivation (grades are clearly extrinsic) are core components of academic motivation and success? In part this simply highlights how complex, dynamic and sometimes even contradictory the field of motivation is, while also illustrating that autonomy and directiveness are not mutually exclusive but can be employed in different ways and in different scenarios in the best interests of the student.

As Johnmarshall Reeve says in his Handbook of Self-Determination Research: "Autonomy support revolves around giving students freedom to pursue their own agendas. Structure revolves around giving students clear expectations, optimal challenges, and timely feedback as they attempt to make progress in living up to those expectations and challenges [...]

student motivation thrives under conditions in which teachers find ways to provide optimal structure and high autonomy support." It is therefore a balance – with students accepting (and needing) some degree of directiveness alongside their learning independence.

There is also substantial evidence that grade is the ultimate motivator for nearly all students. Becker et al (1968, 1995) found that grade-points were the single biggest motivating factor for students, who seemed to feel that the achievement of good grades was almost their raison d'etre, to be pursued to the exclusion of all else, and that they were an indicator of personal worth.[5] This is echoed by van Etten *et al*'s 2008 study[6] in which students self-reported that getting good grades (and avoiding bad ones) was the over-riding factor in their motivation. While many variables could affect their academic motivation - internal factors such as their expectations of themselves and the course, past successes and failures and social class, and external factors such as course and assignment characteristics, feedback, and people (instructors, family members, peers) - seniors reported that the 'goals of graduating and earning good grades became their target goals during their senior year.' Shockingly, many reported that if there were no grades, they probably would not even attend class. It therefore follows that if educators wish to incentivise particular behaviours – like engaging with Connect – tying it to the grade will achieve the greatest impact in the most straightforward way.

Extrinsic motivation has also been identified as particularly useful for tasks that the teacher sees as important but the student finds uninteresting. Since students are all individuals and will have more natural interest in some areas of their course than in others, the ability to apply some extrinsic pressure across the board can help students keep on track. "If they're doing the readings we can only assume that they're learning more," says Dr. Palcic. "Even if they're going through the motions, it's still good in terms of establishing a good study regimen."

Interestingly, when it comes to extrinsic motivation, the student can experience varying degrees on internalisation, on a spectrum from external regulation (where motivation is dependent purely on an external factor such as a reward or punishment) to identified regulation (where motivation comes

from acknowledgement that the task is in their best interest). Trying to ensure that students understand the rationale behind the extrinsic motivation and the benefit to themselves of doing the work will make it more likely that students will buy into the motivation, making it their own. Dr. Ramos, for example, builds engagement by explaining to her students that if they do the continuous assessment and go through the readings she sets, it will contribute to their final grade and increase their chances of passing the course. While Dr. Palcic says: "Essentially it forces them to do it, but they can see why I'm doing it. It's not to punish them; it's directly relevant to what we're doing that week, and it helps them the following week in tutorials, and it helps them the following week when there's the test."

[5] Becker, H. S., Geer, B., & Hughes, E. C. (1995). Making the grade: The academic side of college life. New Brunswick, NJ: Transaction.

[6] Van Etten, S., Pressley, M., McInerney, D.M. and Liem, A.D. (2008). College seniors' theory of their academic motivation. Journal of Educational Psychology, 100(4), pp.812–828.

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