Measuring educational gain: University of Portsmouth case study

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Attempting to understand and measure transformation

We began our institutional journey into educational gain in 2015 with the development of our graduate hallmarks and our successful bid to lead one of 13 Learning Gain Pilots (funded by HEFCE). Our project was multi-disciplinary (artists, economists, psychologists, sociologists and educationalists) and multi university (Southampton, Royal Holloway, and University of the Arts, London). The project had parts in common across partners (e.g. the stakeholder analysis and use of all of the measurements developed) and each partner developed a distinct focus aligned to the goals and values of their HEI. Early stakeholder analysis (parents, students, employers and HE staff) required us to develop some innovative approaches to data gathering like prepaid blank postcards at university open days. We received a wealth of insight and some hilarious responses, one parent exemplifying both with their hope that their child would experience a "full social, educational and pastoral experience that moved them away from pot noodles". Across stakeholders an undergraduate degree was perceived as providing a signal of employment level subject knowledge and a less tangible 'cultural capital'. This was made up of factors such as improved self-concept and worth, social skills, resilience, resourcefulness and creativity, often described as requiring learning from experience that is beyond one's comfort zone. Our team brought a multitude of perspectives to data interpretation, with a shared conclusion; we need to measure transformational learning.

What is transformational learning?

Here, the nature of the distance travelled is defined not by knowledge from point A to B but by the change in beliefs and perception (see Clark, 1993). Transformation provides a learning capability for life by increasing the depth of understanding sought, the degree of critical reflection, and ability to consolidate and apply knowledge. This is not to devalue the importance of knowledge. No one wants to be treated by a doctor without a grasp of anatomy, but you would also want them to diagnose and treat you based on your needs.

What are the enablers for transformative learning?

For the answer, we explored the literature on developing meta-cognitive skills; the ability to recognise your cognitive abilities, direct your learning, evaluate your performance, understand what caused success or failure, and learn new strategies. Van Merrienboer and Kirschner (2007) identified 'complex tasks' that integrate knowledge, skills and attitudes as a necessary ingredient for 'complex learning' which is akin to transformation. We also explored the authentic learning literature, which advocates a learning experience that encourages the creation of tangible, useful outcomes to be shared with the world, where what is taught and assessed is connected to real-world issues and problems. This type of learning is highly engaging and builds a learning community but it also requires learning from mistakes in higher stakes contexts. While the key to succeeding in learning is self-efficacy (see Bandura) because a learner with high self-efficacy will face challenges and take risks, when failure occurs self-efficacy is lowered. Implicit theories about the nature of intelligence (whether it is *incremental*, developing through effort or an *entity* that cannot change) is a better predictor

of persistence in the face of challenge and failure. Carol Dweck's work on this (https://profiles.stanford.edu/carol-dweck) indicates that an entity theory will lead learners into self-protection strategies known as a helpless orientation; focussing on looking good by choosing easy tasks or cheating, denying the value of the particular ability, and securing favourable social comparisons to restore self-esteem. A mastery orientation (embracing challenge and seeing failure as a learning opportunity) is more often seen in those with an incremental theory. Learners will come into HE with different start points in self-efficacy and implicit theories likely to impact how they react to challenging and potentially transformative complex and authentic learning (or as stakeholders described, out of one's comfort zone). In addition such transformation would require a community in which one felt safe and supported; a sense of belonging.

What did we measure in our pilot?

Our main focus at Portsmouth was self-efficacy, implicit theories (and the learning orientation we would expect to relate to this, where resilience was characterises as those with a mastery orientation) and false consensus (the antithesis of belonging, see Thorpe at al, 2008). For context we measured prior academic outcomes and demographic factors. We planned to measure these factors over four time points but missed the first time point (at Level 4 entry) due to contractual delays and securing permission to record student registration numbers. At Portsmouth we collected longitudinal (L) and cross sectional (CS) data in February of Level 4 (192 L, 193 CS), April of Level 5 (137 L, 63 CS) and April of Level 6 (123 L, 104 CS).

What did we find?

Our longitudinal data showed that from Level 4 to 5 there was a significant decrease in self-efficacy. This is to be expected, given the level of challenge is likely being faced by this point. Sadly, we did not see a rise in incremental implicit theory across levels. Although it may be that this was high enough to begin with, that would be unlikely to be true for everyone, so we have to consider that we may not be doing enough to prepare our students for challenging learning. Our cross-sectional data showed a significant and positive difference between Level 5 and 6 in terms of self-efficacy and mastery orientation. We examined all Level 4 data to determine if demographic factors influenced the start point of students. We found that black and minoritised ethnic groups were lower than white students in self-efficacy, mastery orientation and higher in false uniqueness. First generation students had higher self-efficacy but lower mastery orientation. Surprisingly, there were no differences in implicit theories. What was critical to understand, particularly in relation to implicit theories, was whether levels on entry predicted student's completion and attainment. Frustratingly, but unavoidably, a change in our student record system meant that we could not identify our participants' individual outcome data as planned.

What did we change at the University of Portsmouth?

We linked up the project team with two other funded HEFCE Catalyst projects at Portsmouth, both focussed on reducing barriers to attainment and closing gaps. All three worked with other colleagues in refining our graduate hallmarks, informing our approach to learner analytics, and a new personal tutorial system. We rolled out staff and student development in implicit theories, which included training the trainers, to create a legacy. Our Dean of Learning and Teaching and Dean of Digital and Distributed Learning developed approaches to support students' sense of belonging, and employability has been framed around wider conceptions of personal development. We further enhanced our provision of real world and simulated learning with considerable investment. Finally, we developed implicit theories learning and self-assessment materials provided as part of the 'Prep UP' online programme to support students transition to Level 4, in readiness for authentic and complex learning.

Is the work from the Catalyst projects still evident today?

One way to assess this is to look at our 2023 TEF submission. It is clear that the elements above stand out in our submission. For example, recruiting a diverse range of students,

based on their potential with very different start points in terms of prior achievement; focussing on individual student needs, with a strong emphasis on proactive support and for the transition into HE; a clear focus on community and belonging; supporting all students to develop the "Hallmarks of a Portsmouth Graduate" which don't just include subject knowledge and skills but also non-cognitive elements like being curious and self-aware; independent and real-world, simulated, enterprise, public, patient and research-based education with students co creating knowledge with staff, *aka authentic and complex learning,* blurring the boundaries between employment and education.

One example is our Forensic Innovation Centre, developed with Hampshire Constabulary, was the UK's first operational police forensic facility on a university campus. It combines police forensic science and digital crime investigators with facilities for students, researchers and serving police staff. Students have internship opportunities, access to professional mentors and are taught by active Officers.

There are also examples in extracurricular activities, whether in one of our interprofessional challenges and skills focussed credit bearing additional modules or in supporting volunteering opportunities inside and outside. In 2021/22 1,810 students delivered 55,000 hours of volunteering. Activities included administering Covid-19 vaccinations to the public, working in a Nightingale hospital, teaching lifesaving CPR skills to the public, and working with local primary schools to support their Reading Schemes and improve literacy levels. Further, The Institution Wide Languages Programme enables all students to learn a new language alongside their degree, including Arabic, British Sign Language, French, German, Italian, Japanese, Mandarin and Spanish. From 2019/20 to 2021/22 enrolments doubled to 2,400. Additional certificated qualifications are also available, for example in First Aid or Mental First Aid.

What we were not able to do, but will continue to explore is how to use the tools developed in this pilot with every student. Ideally, we would want to collect this data at several timepoints in order that our students can learn about themselves and monitor their own development in non-cognitive areas like self-efficacy, resilience and implicit theories, since these factors are likely to impact their experience and transformation while at university and thereafter.

References

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