

QAA Educational Gain Collaborative Enhancement Project

Educational Gain Literature Summary

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This literature review is an output from a Collaborative Enhancement Project supported and funded by QAA Membership. The project is led by Imperial College London in partnership with Bath Spa University; Imperial College Union; Liverpool John Moores University; London School of Economics and Political Science (LSE); The Open University; University of Birmingham; University of Cambridge; University of East Anglia; University of Exeter; University of Manchester; University of Plymouth; University of Warwick; and University of Portsmouth. Find out more about Collaborative Enhancement Projects on the [QAA website](#).

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Overview

Higher education plays a pivotal role in shaping individuals' intellectual growth, personal development, and future career prospects. As the landscape of higher education continues to evolve, there is a growing emphasis on evaluating the educational gain experienced by students during their academic journey. Gains from higher education refer to the measurable progress students make in terms of knowledge acquisition, critical thinking skills, and personal growth. This literature review aims to synthesise existing research on educational gain in higher education, providing insights into its measurement, determinants and potential implications.

The term “educational gain” is not used in the literature. The concept of gains from higher education are researched, with terms including learning outcomes, student outcomes, assessment of outcomes, academic progress, gains and the phrase “learning gain” popularised by work set out by the Higher Education Funding Council for England (HEFCE) and subsequently taken up by the regulator, the Office for Students (2022a). The concept of educational gains, and associated terms, covers outputs from higher education at a collective level, differing from individual student assessments. Given this broader approach, drivers for exploring educational gain tend to come from governments, international organisations or other coordinating bodies. This results in the concept being highly political, linked with high

level purposes, quality, performance and accountability of higher education—and associated funding.

Key sources

This is a summary of key literature on this topic. As reflected in literature review findings, three main sources were identified. The first is a 2018 Special Issue of the journal *Higher Education Pedagogies* titled [Learning Gain in Higher Education: A Global Issue](#). The opening paper offers an overview of the topic of learning gain, a historical review, political drivers and operational challenges, in an international context (Evans et al. 2018). Next is an edited collection *Learning Gain in Higher Education* edited by Hughes and Tight (2021), with a chapter offering a full literature review. Finally, providing a broad international review is *Research handbook on quality, performance and accountability in higher education* (Hazelkorn et al. 2018) puts educational gain into a wider context. These resources bring together leading researchers, scholars and practitioners in the field.

These sources highlight a number of broader questions, including how do any new proposed educational or learning gain metrics compare with data currently used to drive enhancement, rank excellence and ensure quality and standards? How do the challenges that measuring gains present fit into wider performance and accountability frameworks? Does measuring educational and learning gain change who is in the conversation about quality in higher education?

Broader context

Educational gain, like many aspects of higher education policy, recurrently emerges as a “new” topic to be explored. However, it is not new, although many efforts to capture it are ignored with each iteration. In 1974, Howard Bowen called for evaluation of educational outcomes, student performance and cost-effectiveness, amongst other areas. Calls to move

beyond input measures such as reputation and resources have been on-going (Ewell 1991; Cheng 2001). Evaluation, particularly of large-scale policy efforts, provides information on success, impact and delivery on investment (Bamberger, Rugh, and Mabry 2011). It also offers a consistent, rigorous and systematic approach for making sense of complex information (Rossi et al. 2018). Records of evaluation activities can inform future research, policy and developmental activity. This is particularly important in areas such as learning gain, which many even within higher education dismiss as too complex to undertake (Bagshaw 2018) although such capitulations are increasingly dismissed by those inside and outside of the academy (Baume 2018).

The use of educational gain metrics varies within and across countries and regions, such as the wide-scale use of student engagement metrics in North America (Kuh, Kinzie, Schuh and Whitt 2011), the pilots of the Assessment of Higher Education Learning Outcomes (AHELO) project through the Organisation for Economic Co-operation and Development (OECD), the use of national exams in Columbia (Shavelson et al 2016) and Brazil (Pedrosa, Amaral & Knobel 2013) and the development of the Collegiate Learning Assessment (CLA), the basis for the work of Arum & Roska's *Academically Adrift* (2011).

Several approaches have been employed to measure educational gain in higher education at more local levels. Quantitative methods often utilise pre- and post-tests to assess students' knowledge gain within a specific course or program. These measures, such as standardised tests or grades, offer valuable insights into students' academic achievements. However, they may not capture the full range of educational gains, including critical thinking abilities, problem-solving skills, and personal development. Therefore, qualitative methods, such as surveys, interviews, and portfolios, have gained prominence in assessing the holistic aspects

of educational gain. There are challenges in how scalable the latter are in addressing questions of gains at institutional or national (better yet international) levels.

Approach in England

On the back of changes to tuition fees and the push for increased competition in the higher education sector in the early 2010s, work was undertaken in England to explore measuring gains from higher education. A scoping study identified a range of methods used to measure learning gain (McGrath et al 2015):

1. Grades – measuring the progress in students’ achievement by comparing the difference between grades at two points in time. This could include using a standardised measure (such as the grade point average), or using a set of grades (standardised or not) to predict future grades.
2. Self-reporting surveys – asking students to report the extent to which they consider themselves to have gained knowledge and developed skills, through a survey administered at a number of points throughout their degree programme.
3. Standardised tests – measuring the acquisition of certain generic or specialised skills, through a test that could be administered to students either as part of their formative or summative assessment for their degree, or as an additional exercise alongside the course.
4. Other qualitative methods – including encouraging students to reflect on their learning, acquired skills and remaining skills gaps, and to facilitate a formative exchange between students and their tutors.
5. Mixed methods – using a combination of methods and indicators to track improvement in performance, for example through a combination of grades, student learning data and student surveys.

On the back of this scoping study, the Higher Education Funding Council for England (HEFCE) set out a programme of research, including an analysis of administrative data, a centrally-run national survey and a suite of Pilot Projects involving over 70 higher education institutions. Across the projects, measures of learning gain developed were grouped into three psycho-social constructs: cognitive measures capturing students' intellectual gains including critical thinking, problem solving skills and subject knowledge; affective measures of how students feel, their attitudes and approaches to their learning; and behavioural measures covering what students do and how they engage with their learning, often linked with employability and career readiness.

Measures of general cognitive gain explore the variation in non-subject-specific learning through academic years. These approaches concentrate on the developmental value of the metrics for individual students rather than institutional comparison. Analysis of existing data on students' academic performance allows for measuring across various points in time and across disciplines and institutions. Such modelling approaches capture the global achievement and improvement of the university, and the relative between- and within-programme differences within the same cohort, as well as between-cohort differences. This analysis supports academic practice, as well as teaching and learning. However, it is important to balance analysis of grades with flexible policies which can ensure standardisation without suppressing naturally occurring performance fluctuations. Otherwise, there is a risk that accountability outcomes become increasingly detached from actual student learning, and that examination results progressively lose their validity as measures of (and for) learning (Hazelkorn, Coates and McCormick 2018).

Across the HEFCE programme, mirrored by findings across other countries and international organisations, there are significant challenges to measuring learning gain. Many of the

metrics can take a long time to measure. Research has shown that there is disciplinary bias in standardised tests and surveys (Buckley, 2013; SurrIDGE, 2006; Marsh & Cheng, 2008). Student background characteristics have been shown to influence learning gains (Crawford & Wang 2015), across cognitive (Rogaten & Rienties 2018) and affective measures (Pampaka, et al 2018). This is particularly the case for students from disadvantaged backgrounds (Ashwin 2017). There are multiple entry and exit measures some of which some are not easily or directly comparable. Motivating students to take part in tests outside their degree course and tracking them over time can also be a struggle (Liu, et al., 2012). And questions arise about the reliability of student self-reporting (Pike, 1995). Research has also identified that students have non-linear learning trajectories, meaning multiples measures over time are needed to account for variation in student learning (LeCun, et al. 2015; Haggis 2004; Fraser & Greenhalgh 2001).

Policy shift from learning gain to educational gain

The broader political and regulatory context is key to understanding the measurement of educational gains, as it drives *why* there is a driver to measure outcomes and sets the direction for *what* is measured. The challenge of *how* to measure it remains. In England, following the conclusion of the HEFCE-led learning gain programme, the topic went quiet. However, following an independent review of the Teaching Excellence Framework (Pearce Review, 2021), it was brought back into the limelight. The review suggested educational gains should be articulated and assessed. (p.7). The report summarised educational gains as:

Institutionally determined evidence addressing ‘what our students gain from our educational experience and how we evidence that’. Educational gains might include knowledge, skills, experience, work readiness, personal development and resilience. This will be conceptualised differently in different institutions. Since there is no

single nationally comparable metric of ‘learning gain’, each provider would be expected to demonstrate how, within their own particular mission, they articulate and measure (quantify if possible) the educational gains that they aim to provide for their students. Subject variability in those gains should also be addressed. (p.10)

The report noted that learning gain was the most commonly suggested new criterion or measure for inclusion in the TEF throughout their consultations. ‘While the challenges in defining and measuring learning gain were noted, we heard a consistent message that it was important to consider and assess learning gain’ (p. 34). The Office for Students (OfS) conducted a consultation on the TEF two and a half years after Shirley Pearce’s Independent Review was written (and a year after it was published). The resulting TEF 2023 guidance provides a new approach to thinking about and measuring educational gain.

The TEF assessment will consider:

- a provider’s own articulation of the gains it intends its students to achieve
- its approach to supporting these educational gains
- any evidence of the gains achieved by the provider’s students.

The guidance notes:

We recognise that there is currently no national measure of educational gain, and that many providers may not have developed their own approach to measuring the educational gains they deliver for their students. The approach to assessing educational gain in the TEF 2023 is intended to enable providers to demonstrate a clear articulation of their ambitions for educational gain, credible approaches for delivering this, and *where possible* evidence that it is delivered in practice. It is intended to allow providers time to establish their practice in measuring and

evidencing educational gains, which could then become the focus of assessment in subsequent TEF exercises (OfS 2022b, p. 11).

Thus, it is left for institutions, on a limited timeline to report on the education gain of their students (and how this may vary across subjects, campuses, student groups etc). It is left open as to what can be included, whether it is what the institution hopes or intends students gain or what is actually measured. Echoing the evaluation of the Learning Gain Pilot Programme, the TEF guidance states that providers could include a range of gains, which might include but not be limited to:

- Academic development: such as gains relating to the development of subject knowledge as well as academic skills, for example critical thinking, analytic reasoning, problem solving, academic writing, and research and referencing skills.
- Personal development: such as gains relating to the development of student resilience, motivation and confidence as well as soft skills, for example communication, presentation, time management, and networking and interpersonal skills.
- Work readiness: such as gains relating to the development of employability skills, for example teamworking, commercial awareness, leadership and influencing (OfS, 2022b, p. 31)

Conclusion

Research shows that numerous factors influence educational gain in higher education, thus single metrics fail to capture the variety of gains that students make in higher education.

While the TEF and related efforts can seem like bureaucratic exercises, one of the primary determinants is the quality of teaching and learning environments. Effective pedagogical strategies, such as active learning, collaborative projects, and student-centred approaches,

have been linked to improved educational gain. Institutional factors, such as resources, support services, and campus climate, also play a crucial role in promoting educational gain. Therefore, it makes sense to explore institutional environments to explore education gain. However, such approaches must account for the individual characteristics, such as students' prior knowledge, motivation, and engagement, that also significantly impact their educational outcomes.

Enhancing educational gain is crucial for the continuous improvement of higher education institutions. This literature summary highlights the significance of educational gain in higher education and its multifaceted nature. It underscores the importance of employing diverse methods to measure and assess educational gain accurately.

Whether national excellence frameworks can lead institutions to identify and support educational gains remains to be seen. The literature highlights the need for a comprehensive approach that encompasses curriculum design, teaching methodologies, assessment strategies and support services. Institutions can promote educational gain by providing professional development opportunities for staff, implementing evidence-based teaching practices, fostering a supportive and inclusive learning environment, and leveraging technology to facilitate active learning and personalised instruction. Additionally, feedback mechanisms, such as formative assessments and student evaluations, can contribute to the ongoing assessment and improvement of educational gain. It is not an easy task to link such educational practices with institutional measures.

Future research should focus on identifying institutional approaches, effective interventions and strategies that foster educational gain, considering the evolving needs and expectations of students in a rapidly changing educational landscape. By understanding the determinants of educational gain, higher education institutions can implement evidence-based practices to

enhance students' learning outcomes, personal development, and overall educational experience.

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