

**Title: Exploring patterns of learning gain in higher education: the equity dimension**

## **Paper**

### Background

Current policy directions in higher education have been focusing on quality and accountability, with new measurement frameworks, such as the Teaching Excellence Framework introducing new metrics and approaches to exploring the quality of higher education provision. Learning gain is one such measure, with work currently underway to measure it in a variety of manners (McGrath et al, 2015). At the same time, substantial emphasis is currently being placed on widening participation to higher education, and increasing the number of students from traditionally under-represented backgrounds in universities.

### Paper aim

In this paper we present results from a large-scale study of students' learning gain in higher education, focusing particularly on the question of whether any such learning gains over the course of a two-year period in university occur systematically in the same pattern for the whole student population as for students from traditionally under-represented backgrounds.

In particular, in this paper we focus on non-subject-specific learning gain, which we define as the change in students' abilities, skills, attitudes and competencies during higher education, and for which we have previously developed a comprehensive conceptual framework, and robust measurement instrument (Authors 1, 2, &3, 2018).

### Theoretical background

To situate the analytical work in the broader learning gain context, we briefly introduce the theoretical framework underscoring it. Drawing on prior qualitative work (Authors 1, 2, & 3, forthcoming), and also on existing evidence from the UK (Dunne, Bennett & Carre, 1999), North-America (e.g. Pascarella & Terenzini, 2005), Europe (e.g. Dill & Soo, 2005), and Australia (Barrie, 2004), our conceptual framework disaggregates students' skills, abilities, competencies and attitudes into four components (cognitive; meta-cognitive, affective, socio-communicative), and three cross-cutting dimensions (view of knowledge, attitude to research, and morality), each with associated measurement scales.

### Methodological approach

The paper relies on a two-years, three-wave longitudinal study, with a diverse sample of over 2,500 participants responding to all three rounds. These participants, attending one of 11 partner UK universities, were studying for a degree in four broad disciplinary topics (Business, Chemistry, English, and Medicine) and were both undergraduates and post-graduates, and both Home, EU and International students.

The data analysis draws on a survey questionnaire, which represents the operationalisation of the above conceptual framework, and which initially included 12 separate measurement scales (some self-report instruments, some test-like instruments) and also questions about participants' background demographic characteristics. This latter aspect included information concerning

students' status as the first in their immediate family to attend university, and other such information which will be used to construct the 'under-represented' indicator for use in later analysis.

Additionally, administrative data from the Higher Education Statistics Agency was linked to the survey data, to provide further information on pre-university attainment, and other background information, wherever possible, and with the explicit consent of our participants.

The analysis is currently underway and will take the form of longitudinal growth models that control for background characteristics of interest while taking into account the three measurement points, as well as the 'under-represented' indicator described above to address our research question.

## Results

We will first report briefly on the underlying quality of the measurement instruments, in terms of validity and reliability, to underscore the remainder of the analysis. Results suggest that, with one exception, the questionnaire scales perform as expected from a psychometric perspective, and also appear valid to our initial theoretical assumptions.

We then turn to the major focus of the paper, presenting main results for learning gain, i.e. the change that emerges for a selected set of measures from the different components and dimensions in our framework. We first present longitudinal trends for the whole of our sample. Preliminary results suggest non-linear trajectories of change, and interesting between-subject differences in patterns of changes, both aspects which further analysis will address.

Lastly, we focus on the comparison between the group of under-represented students and report patterns of change for their skills, abilities, and competencies. This analysis is currently underway. The results will address the crucial point reflecting both any potential differences between these groups at the first measurement point, at the end-point, and also in the trajectories of change within that.

## Implications

The paper contributes to existing scholarly debates in the field by providing new longitudinal evidence on learning gain, using a large sample of UK students and also disaggregating by the background of students. The discussion will link current debates around the Teaching Excellence Framework with the wider widening participation agenda, and highlight the nuance required in understanding how any metric of excellence, quality, or learning gain should contain an indication of the equitable distribution of such outcomes.

## References

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Authors 1, 2 & 3 (forthcoming) [blinded for peer review]

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