

Convergent policies and differentiated contexts: developing an understanding of employability through the disciplinary lenses of students and academics in taught STEM postgraduate programmes. (paper 0281)

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Abstract

This paper explores the way that the notion of employability is articulated in interviews and focus groups with academic staff and students on five postgraduate taught (PGT) Science, Technology, Engineering and Mathematics (STEM) Masters courses as well as in curricula documents. The authors draw upon the notion of a specialised disciplinary identity, which is based upon previous work by McLean et al (2013) and the concepts that Bernstein (2000) associated with pedagogic identity and knowledge structures to gain insight into how STEM disciplines interact with students' biographies and specific local educational and employment contexts to create more nuanced and differentiated understandings of employability than that which is presented in policy.

Context

There is a convergence in policy perspectives around the value of STEM in building the economic capacity of individuals, regions, and nations (d'Aguiar and Harris, 2015). Consequently, in Higher Education policy globally there is a widespread desire to educate STEM graduates to postgraduate level because it is assumed that these higher qualifications will increase national capacity and economic wealth (ibid). This view has been questioned, for example, Brown et al., (2011), suggest that it is international corporations who benefit mostly from a globally up-skilled workforce and that these companies move around the world employing and discarding labour in the pursuit of profit. They also argue that the increased use of computer technology allows global companies to benefit from knowledge labour around the world without necessarily engaging with nations or their regions, suggesting that these policies of up-skilling could be misguided. Nonetheless, within the UK, governments continue to invest in universities with the view that they will help to regenerate areas and they have collected some evidence that documents short-term benefits for localities (Little et al., 2015).

Project and methodology: The mixed-method project that underpins this paper is one of 20 projects funded by the Higher Education Funding Council for England (HEFCE) as part of a £25 million investment. The project aims to explore and develop ways of supporting students' progression into and through postgraduate taught (PGT) STEM programmes across 11 universities. The project also has a mission to address the decline in the number of UK graduates taking up taught postgraduate courses by developing insights into the barriers to

participation for different groups and learning how to effectively widen participation and progression in STEM PGT courses. In addition, the project has an intentional regional spread as it is important to investigate the way that programmes play different roles in the various geographical, economic and social landscapes. The 11 universities involved in the project have selected specific STEM PGT programmes to participate in the project. The project has provided scholarship funding for those students who are substantially engaged in it allowing us to study students who would not have been able to participate without the funding. The methodology has comprised a series of surveys including an Entry to Study Survey (ESS) aimed at all students on STEM PGT programmes in each of the 11 partner universities, an exit survey and a follow up survey six months after students have left, focus groups with students midway through the year structured according to the amount of fee scholarship awarded (100%, 60%, £1,500 or 0), a survey of employers in the different regions (not yet complete) and a study of funded development activities. In addition to this, at the University of Lincoln which is the focus of this paper the authors also undertook: a) a two and a half hour focus group with three of the five programme leaders plus one lecturer; and b) individual biographical and programme based interviews with nine students (lasting between 1.5 to 2 hours each) aimed at understanding the role that education had played in their lives and in their envisaged future c) an analysis of programme documentation. The survey data was analysed using SPSS v.21 and the qualitative data was analysed thematically in Nvivo and through an iterative process throughout the fieldwork. The disciplines that participated in the research at the University of Lincoln were Biotechnology, Clinical Animal Behaviour, Forensic Anthropology, Forensic Science and Sport Science and. The case study at Lincoln was particularly focused on exploring the role of STEM in a local economy where there are few STEM industries and the university has positioned itself as intending to help grow capacity through up-skilling the workforce, whilst encouraging a widening of participation in STEM. This is complex as participation varies in different STEM disciplines and fields by age, disability, ethnicity, gender and social class (d'Aguiar and Harrison, 2015).

Questions, aims and focus

Whilst policy implies a relatively straightforward connection between providing STEM programmes and capacity building on the ground, in practice it is more complex. It is this complexity we are investigating in this paper so that we can better understand the possibilities for individual, local and national development that arise from these programmes at Lincoln. We have particularly focused on the biographical and educational interviews and the focus groups with students and staff (although we contextualise it with other data) with the aim of developing insight into the ways in which understandings of employability are shaped by: biography - including the structural aspects (e.g. age, social class, disability etc.) and the agentic factors (e.g. the choices people make); the knowledge and skills of the disciplines studied; and the specific local context in which they are taught and learned.

Conceptual framework

In analysing our data we have drawn upon the notion of the 'specialised disciplinary identity' (McLean et al, 2013) which is based upon the conceptual framework of Bernstein (2000). We

also draw upon those concepts associated with knowledge structures to consider disciplinary differences. Using this framework we have explored the role of the “collective (disciplinary) base” (ibid, p. 66) that students and academics draw upon to develop their sense of being employable.

Findings

The sense of pedagogic identity conveyed by academics and students is related to the knowledge structure of the disciplines that they are involved in teaching and learning at PGT level. This is important to developing their understanding of what employability means. For academic staff there is no separation between the knowledge that students learn and the skills required for employment: although different programmes aim to reach different stages in a trajectory towards becoming employable. Students’ sense of what they need to become employable appears to alter and change as they go through their programmes and they sometimes associate it with disciplinary knowledge but at other times they separate out the skills needed for future work from knowledge and are uncertain about their pedagogic identities and their employability. This is affected by biographical, structural, regional and economic factors.

References

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