

Lost in transition: student alienation in the transition to university

In the last few years, the UK government has been particularly worried about the low levels of participation and retention in Science, Technology, Engineering and Mathematics (STEM) degrees in Higher Education and the subsequent shortage of supply of skilled individuals in these areas to the country's workforce.

Because mathematics is essential to all these disciplines, our "Transmaths" projects aimed to understand how different practices in this subject during the transition to University influence students' choices and future success in STEM subjects (and others, like Medicine, in general). We focus on the study of transitional moments because very often these present students with dangerous situations (and mathematics is regarded as particularly difficult here) where "new rules" of all sorts can be problematic for many of them.

In this symposium we present some of our findings, focusing on the theme of "alienation", and seeking explanations from socio-cultural theoretical perspectives. Some of our results reported elsewhere (e.g. Williams 2011, Pampaka et al 2011; visit the project's website for more: www.transmaths.org) suggest that there is a special problem with first year STEM students' engagement with mathematics, and that many practices during transition to University can be alienating for many of these students in different ways. The four papers that form this symposium will aim to (i) outline the nature of and extent of the problem, (ii) explore the students' experiences of engagement/disengagement and support/alienation, and (iii) develop theorisations of alienation and disengagement in educational transitions more general.

Our first paper (Pampaka and Pepin) will show, through a quantitative analysis, that there is objective evidence of alienation and disengagement problems during the transition to University and will evidence the extent of the problem. Then, based on socio-cultural theoretical frameworks the second and third papers (Hernandez-Martinez and Harris) will explore, through qualitative analyses, some of the practices that students found to be alienating, and will discuss how these practices influence students' experiences and decisions. Finally, our last paper (Williams) will use Cultural-Historical Activity Theory and Bordieusian frameworks to help generalise our findings to transition problems in education in general.

Our current work is attempting to "transfer" this knowledge and have a more direct impact in policy and practice in Higher Education by working directly with several key partners. We expect to be able to talk about this work as part of the general discussion.

Importance of the research

There is a worldwide concern about participation and retention of STEM students in Higher Education, mainly because of the consequences that a shortfall of skilled individuals in these areas can have for the economy of industrialised nations.

In the UK, the Robert's report (2002) first identified this critical problem and since then the government has commissioned several research studies and initiatives to try to understand and solve the problem. In more recent years and perhaps magnified by the worldwide economic climate, these issues have gained even more importance due to the increase in university fees and the subsequent demand for a better education. Universities are under pressure to deliver better standards of education while at the same time are increasingly financially constrained. Hence, understanding of how to increase participation and retention is vital to their agendas.

The research literature has identified transitional moments as important for both participation and retention (most students choose careers during this period and their experiences of first year determine in great part their engagement and achievement). Transitional issues in Higher Education are of great relevance and importance and therefore the results presented in this symposium are timely because they address a common and crucial problem for the UK, one that if not resolved could have serious effects in the economy and the position of the country as world leader in science and technology. For the same reasons, this study is of international significance, as other industrialised nations have reported similar problems.

The quality of our research lies in the strong methodology backed by a solid theoretical framework: our ESRC funded work in the last 5 years (or more) draws on a variety of methods: large scale longitudinal surveys, case studies in various institutions at both sides of the transition, including interviews with students and different stakeholders and classroom observations. Our methodological and theoretical frameworks are also unique in the sense that we build both on theoretical socio-cultural perspectives as well as robust measurement and statistical models to derive and triangulate our findings.

The implications for policy, practice and theory are evident and the papers in the symposium clearly address these issues. Furthermore, we have realised the potential of our results and we are working with key partners in “transferring” this knowledge by creating tools that “speak” to each of the communities of practitioners, policy makers and academics.