Does it Click? Assessing the Role of a Student Response Systems in the Formation of Academic Self-Efficacy Beliefs within a Diverse Student Population

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Outline

Introduction

This paper addresses the role of Academic Self-Efficacy (ASE) as a catalyst for retention and success for students in Higher Education (HE). We consider an undergraduate first-year Introductory Economics module at the University of East Anglia (UEA) to evaluate the effectiveness of teaching innovations aimed at increasing student confidence and ASE. Our investigation develops three significant contributions to the research on ASE in HE by: (i) exploring the theme of ASE based on a plurality of student views; (ii) accounting for different methods to elicit ASE, with attention to the role played by Student Response Systems (SRS), a field still largely unexplored in related literature; and (iii) contributing to a wider teaching development project -currently funded by the Higher Education Academy- to complement the learning analytics results through interpretative narratives gathered directly from the student population.

After Bandura's (1977) seminal contribution on self-efficacy and human behaviour, the literature on ASE has developed a comprehensive debate from theoretical frameworks to empirical investigations (Zimmerman, 1995, 2000). ASE is acknowledged as playing an important role in a wide range of learning dimensions in HE (Jungert and Rosander, 2010; Zajacova *et. al.* 2005). Nevertheless, to the authors' knowledge, there is no contribution assessing the role of learning technologies in eliciting ASE beliefs. SRS are a widespread teaching device in HE and their positive effect on student engagement is widely recognised (Hoekstra and Mollborn, 2012; Crossgrove and Curran, 2008). However, investigations of the impact of SRS technology on student attainment and learning have generated controversial results (Anthis, 2011; Elicke and McConnell, 2011). Taking a position at the edge of these two literature strands on ASE and SRS, our study opens a debate on the contribution of learning technologies that goes beyond attainment and engagement to impact directly on student confidence and self-assessment skills.

Methodology

Our project adopted mixed methods to evaluate the effectiveness of an SRS regarding self-efficacy and confidence on a first-year undergraduate Introductory Economic module. While quantitative data were collected for the duration of teaching (September 2013-May 2014), we employed qualitative methodology to explore students' views through focus groups conducted at two specific moments of the academic year. Following approval from the Ethics Committee of UEA's School of Economics, recruitment began in November 2013 through email contact to all students on the module (N=171). The November focus group explored the impact of the innovations introduced within the module. In order to capture possibly divergent opinion between home and international students, participants were selected according to their home domicile and then on a first-come, first-serve basis. Ten students (5 home, 5 international) participated in November. Recruitment to two focus groups in March 2014 aimed to reflect possible diversity in confidence levels between high-performing and low-performing students; two focus groups were held, with 6 and 4 participants, respectively.

Findings

The November 2013 focus group aimed at assessing the impact of the innovations within the module. Students were asked about their learning experience: how helpful they found revision questions in lectures; the impact and helpfulness of feedback questions; whether using SRS was enjoyable, what difference SRS made to their learning and why this was or was not the case.

Students' views were also sought on the impact on their confidence in lectures, seminars and workshops, whether they compared their own learning to that of their peers, and if they felt in control of their learning.
Students reported diverse opinions on the helpfulness of feedback questions. On occasion this reflected their own backgrounds. More often, however, the variety appeared to reflect preferred learning styles: some gained a sense of accomplishment in validating their competences, a few reported that comparing performance with their peers had no impact on them, while others felt motivated to improve if their answers were wrong. The use of SRS also drew diverse responses. Students described how they contributed to their self-assessment. Most enjoyed or were not bothered by the SRS, although some felt their use in workshops was intense. An international student valued the anonymity of clickers and being able to respond with "honesty". One home student expressed scepticism about SRS; alone of the group he reported he had covered the course material at A-level and felt that SRS held up the flow of the teaching session. In line with Nielsen *et al.*'s findings (2013), a theme conveyed strongly by all participants was the impact made by the lecturer and seminar leaders. Students responded very positively and felt engaged with the module when teaching staff were enthusiastic, conveyed the material clearly, and showed interest in undergraduates.
Spring 2014 focus groups concentrated on confidence levels in learning throughout the module; what methods were useful in confirming students' knowledge; and whether their attitudes to their achievements had changed over the module. Similar views surfaced in both focus groups regarding motivation from SRS, the positive impact of engaging teachers and the confidence students obtained from achieving good grades. Key differences between the two groups were also reported, especially in attitudes and study habits between the semesters. For example, one lower-performing student reported he had hardly studied until his mid-term results made him realise he had to work much harder to improve his marks; another student had "hated" and avoided the Library during the first semester but it had now become her "second home". By contrast, higher-performing students had followed study habits consistently and did not report distinct differences between the semesters. They also exhibited a broader perspective on their overall education.

These findings suggest that first-year undergraduates respond positively to SRS technology. SRS help them become involved in their learning; give them a means of assessing their performance and comparing it with that of their peers, which often motivates them to improve their work and obtain a sense of achievement. The implication of the students comments is that the technology itself does not promote a sense of self-efficacy, rather that it is a tool that must be used effectively in combination with constructive teaching strategies and with teaching staff exhibiting engaging and responsive behaviours. Given that most students used SRS to confirm their knowledge, and as a means of motivating them to improve, we suggest that SRS help to empower undergraduates in their learning journeys.

Key References

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