The importance of self-efficacy in transition to higher education: a case study on an online Induction resource for Master's students

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KEY WORDS: Student self-efficacy, Transition, Online Induction, International students, Master's students

SUMMARY

The state of a student's self-efficacy, or belief in oneself to achieve a particular result (Bandura, 1997), influences their academic performance (Schunk and Pajares, 2002). Hence supporting students to enhance their self-efficacy from the start of their learning journey is significant to achievement of their degree. One of the ways to improve student's self-efficacy in their transition to university is through training since the provision of information and active learning enables students to make informed decisions about their education, professional development, and personal circumstances during their studies. This is significant for students who may not have studied previously in the UK since negotiating a foreign culture and education system can influence their confidence to thrive in a higher education environment. Therefore, the paper seeks to answer the question, "How does the self-efficacy of students who previously studied in the UK compare with students who did not previously study in the UK following completion of an online Induction resource?" by evaluating a virtual Moodle course designed and implemented in the 2022-2023 academic year to support students to transition into learning at an engineering and business department. Analysing responses collected from 61 full-time master's students to an online survey post-completion of the Induction resource, this initial study finds that the Moodle course is helpful in supporting student's transition to study. Reflections and recommendations for improving this resource to benefit student self-efficacy are provided to support the work of engineering educators dedicated to enhancing the student experience.

INTRODUCTION

Self-efficacy is the belief in one's capability to plan and perform actions to attain a specific outcome (Bandura, 1997). In the context of teaching and learning, student self-efficacy can be developed through training: students are provided with the knowledge and encouragement to make informed decisions and seek answers independently, thus building their confidence to do what is needed to achieve their personal, professional, and academic goals. As student self-efficacy correlates with academic performance (Schunk and Pajares, 2002), developing this belief at the first opportunity during Welcome Week or Induction is paramount to supporting the student learning journey.

However, each student brings their distinct challenge of transitioning from their existing academic experience to a new level and environment for learning along with their own lived experiences and cultural differences. Hence designing an inclusive resource to support students in transitioning to academic study can be challenging, particularly in a large engineering and business department consisting of a diverse range of new students across programmes, courses, and of UK and international backgrounds. Yet to establish one learning community, it is important to provide a common resource for consistent information to support students in their first few weeks to transition into a new learning context. This is important for students who have, and students who have not, previously studied in the UK to ensure *all* students transitioning into learning have the self-efficacy to navigate the practices and processes of the department and behaving in accordance with its values.

Therefore, this paper addresses the research question, "How does the self-efficacy of students who previously studied in the UK compare with students who did not previously study in the UK following completion of an online Induction resource?" by presenting a case study of an online Induction resource in which each student journeys through a curated blend of information and activities to support the transition to independent learning and flourishing in the educational setting. An initial study evaluating the responses of 61 full-time master's students to an online survey evidences the resource can support students to develop their self-efficacy within an academic environment. Thus, this initial investigation posits recommendations for developing an online resource to support student transition through developing self-efficacy and recognises opportunities for furthering this work to advance the student experience.

LITERATURE REVIEW

At the start of a new academic degree, students are placed, whether physically and/or virtually, into an imposed environment of instruction and information. Whilst this environment appears out of their control, students do ascertain control over how they react to this environment (Bandura, 1997). Bandura (2012) continues to state that the perception of an environment, its opportunities and limitations directly influences behaviour. Therefore, a student with low self-efficacy, when perceiving a difficult environment, will refrain from pursuing a solution; conversely, a student with high self-efficacy will work the problem and find a way through (Bandura, 2012). The challenge comes with creating a starting academic environment to influence how students perceive a problem and how a department can set students on a positive path to proactively learn through problem-solving. If self-efficacy is "the extent to which students feel that they might be able to make a difference" (Yorke and Knight, 2006, p. 5), the significance of making a positive first step on this student experience journey must start from the earliest opportunity.

Hence a successful transition can be key to support student self-efficacy. The QAA (2023) reports that international students register a significantly higher number of concerns and complaints than home students; clear expectations from both provider and student could help to reduce these concerns. A considered induction underpins these expectations vital for an international student challenged by language barriers, alien pedagogical approaches, and homesickness (Cowley and Hyams-Ssekasi, 2018). This adjustment period can impact wellbeing and a student's ability to perform effectively in their studies, particularly for international students (Wu, Garza and Guzman, 2015). When supporting this adjustment, it is important to be mindful that one international student's needs are not the same as all others (QAA, 2023). Therefore, it is important to consider the experience of students who may not have previously studied in the UK.

It is important to not confuse self-efficacy with self-confidence. Whilst self-efficacy is a belief in one's ability in a situation, self-confidence can be understood as how a person presents their confidence to others (Dacre Pool and Sewell, 2007). An international student placed in an unfamiliar situation may present a different level of self-confidence than a 'home' student familiar with UK culture. To thrive in this new space, students need to feel a connection and a sense of belonging to British culture (Minutillo et al., 2020). This sense of belonging needs time to develop, and considerations must be made for late arrivals, thus scholarship is needed on how best to deliver a longitudinal induction programme that utilises online provisions that provides flexibility.

Whilst the transition to higher education can be framed as a challenging start, the same period can be seen as one of opportunity for personal transformation whilst surrounded by like-minded individuals (Hernandez-Martinez et al., 2011). However, the arrival of COVID-19 significantly impacted this opportunity for personal transition and self-efficacy. Students transitioning between levels, i.e., school to university, reported being more negatively

impacted than their older peers (Viegas, Lima and Costa, 2023). Scoupe, Römgens and Beausaert (2023) further recognise the importance of giving students the capacity to understand and recognise the importance of their peer groups to build networks and increase understanding of their values and objectives. This tricky transition from one learning level to the next must be supported with a considered induction programme, signposting to students from the very start of their journey that they have the enduring support of the department and its staff, as well as peers.

AN ONLINE INDUCTION RESOURCE TO DEVELOP STUDENT SELF-EFFICACY

Founded over 40 years ago, the department was built with the concept of connecting industry with academia. Based at a Russell Group university, this engineering and business department attracts many international students. The full-time Master's programme alone attracts approximately 1300 students a year, with the vast majority arriving from outside of the UK. This global student cohort presents a challenge in onboarding a wide range of lived experiences and educational journeys. With the intense teaching nature of the one-year full-time master's degree, it is imperative that students are confident to know where and how to seek help. Alongside this community are undergraduate and part-time students and degree apprentices that balance various demands including work and family, and diverse educational backgrounds. Connecting these three groups and supporting them into the transition to higher education in the UK at the earliest opportunity strengthens their sense of belonging within the department.

Of these three groups, only the full-time master's students previously had access to an online induction resource consisting of disjointed documents downloadable from a virtual learning environment. The emphasis was on teaching with information on wellbeing bolted on the end, giving a sense of peripheral importance to academic activities. On review, the language did not reflect the warm welcome the department aimed to communicate. This prompted a need for a redesign: a new, online Induction resource for incoming students to actively work through to develop their confidence in becoming independent learners able to proactively seek solutions to questions and problems (Figure 1). Hence the redesign is valuable to supporting students' sense of self-efficacy.

Figure 1. The student journey from joining university through induction to developing self-efficacy
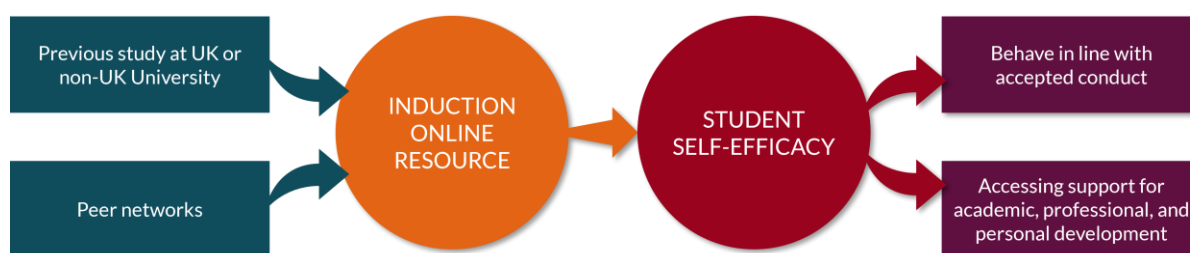
Thus, an online Moodle resource was created for incoming students for the 2022-2023 academic year. 1500 students across all programmes including degree apprenticeships, undergraduate, and postgraduate were enrolled on to this resource which contains 6 key areas of interactive content: a welcome to the department, guidance on navigating the campus, an overview of technical systems, information on academic processes and expectations to study, support for the student experience, and next steps that transition students from this departmental resource to their course-specific site. While students received similar messages in these key areas, specific pathways for separate degree streams and programmes enable students to receive tailored content, such as relevant web links, to avoid information overload in supporting self-efficacy. Content from existing students was also embedded in the resource to provide peer input. This content was directed by the students themselves to reflect their experiences and to allow the student to be the centre of the design.

METHODOLOGICAL APPROACH AND KEY FINDINGS IN EVALUATION OF AN ONLINE INDUCTION RESOURCE

To evaluate the influence of the Induction resource to develop student self-efficacy, an online survey was disseminated using Qualtrics for students to anonymously respond to. Drawing on the self-efficacy questionnaires designed by Imperial College London (2022), the survey asked students questions related to their general self-efficacy (10 questions) and educational self-efficacy (13 questions). Students responded to each of these questions on a five-point scale: Not at all confident, Slightly confident, Somewhat confident, Quite confident, or Extremely confident. These questions, in addition to initial demographic questions and ascertaining if students had previously studied at a UK or non-UK institution, provide moderating variables for the research question. Three free text questions were also included to draw out more nuanced answers around support for educational experience and career development, as well as other comments. Questions did not require a response, so students can skip questions in completing the survey (this also means incomplete responses are included in the analysis and are identified below). The study received approval from the University Ethics Committee.

Following completion of the online Induction resource, 75 responses were received to the survey with a majority of responses (n=61) from full-time master's students, of which 10 (16%) previously studied in the UK and 51 (84%) had not. Hence this evaluation focuses on full-time master's students for comparison, yet there is an opportunity to expand the investigation to compare self-efficacy in degree apprenticeship, undergraduate, and part-time master's students, as well as increase the sample size beyond this initial study so it is representative of the larger group.

From the 61 responses, all respondents found the online resource to be either helpful or very helpful in supporting their transition into studying in the department (Table 1). For instance, a student who previously studied at a non-UK university commented "most of the things are getting covered". Students who did not previously study at a UK university commented "Thank you for being there" and "I really like it here". While it is evident the online resource is helpful for students, it is noted there is still opportunity for improvement, such as integration: "There is no communication amongst different WMG course students" (student who did not previously study at UK university).

Table 1. How helpful was the department's Induction resource for you to make a successful transition into studying at the department? (N=61)

Previously studied at	Not helpful at all	Unhelpful	Helpful	Very helpful	Total
UK University	0	0	4(7%)	6(10%)	10 (16%)
Non-UK University	0	0	22(36%)	29(48%)	51 (84%)
Total	0	0	26(43%)	35(57%)	61 (100%)

One of the concerning findings related to student's self-efficacy is their confidence in being able to access independent student advice, such as advisors from the Student's Union, when facing a difficult situation (Table 2), in which 46% (n = 28) respondents are 'slightly confident' or 'somewhat confident'. This is a noticeable finding as in comparison to other results, more students responded that they are less confident. This suggests that the online resource can be improved for all students on how to access independent student advice and what for.

Table 2. Will be able to access independent student advice when facing a difficult situation? (N=61)

Previously studied at	Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident	Total
UK University	0	2(20%)	2(20%)	4(40%)	2(20%)	10
Non-UK University	0	6(12%)	18(37%)	18(37%)	7(14%)	49
Total	0	8(14%)	20(34%)	22(37%)	9(15%)	59*

*two students (4%) did not respond to this question

Despite initial expectations in which students who previously studied at a UK university may have higher self-efficacy than students who did not due to the prior experience in navigating a similar higher education environment, results show that students who previously studied in the UK do not consistently rate their self-efficacy higher than students who did not previously study in the UK. For example, in Table 3, 50% (n=5) of those previously studying in the UK rated themselves as quite or extremely confident at being able to interpret assessment feedback compared to 73% (n=37) of those that previously studied outside the UK. While it is recognised that the responses of students who previously studied at a UK university lack a rigorous representation, this initial indication suggests further exploration is needed.

Table 3. Rating of self-confidence in being able to interpret assessment feedback to improve future work? (N=61)

Previously studied at	Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident	Total
UK University	0	1 (10%)	4 (40%)	2 (20%)	3 (30%)	10
Non-UK University	2 (3%)	1 (2%)	11 (18%)	26 (43%)	11 (18%)	51
Total	2 (3%)	2 (12%)	15 (58%)	28 (63%)	14 (48%)	61

In contrast students who previously studied in UK universities responded they are more confident at being able to find guidance to prepare for an assignment, with 70% (n=7) identifying themselves as quite or extremely confident, compared to 57% (n=29) of students who previously studied at a non-UK university (Table 4). This may indicate that students who previously studied at a UK university are more likely to be confident in navigating assessment in UK institutions.

Table 4. Will be able to find guidance to prepare for an assessment? (N=61)

Previously studied at	Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident	Total
UK University	0	1 (10%)	2 (20%)	3 (30%)	4 (40%)	10
Non-UK University	0	6 (12%)	16 (31%)	19 (37%)	10 (20%)	51
Total	0	7 (12%)	18 (29%)	22 (36%)	14 (23%)	61

One student who did not previously study in the UK explained: "Some countries have many students here and they usually have their own networks and transfer a lot of information which is difficult for other students to catch immediately." This suggests the importance of peer networks to navigate university, such as the role of cultural or national networks. Hence an inclusive approach to an online Induction resource may help students to increase their self-efficacy by identifying and connecting students to established peer groups, such as student societies and clubs.

It is appreciated that a main component of higher education is professional development to prepare students for future careers in industry. After completing the online Induction resource, 67% (n=41) of respondents felt quite or extremely confident about accessing professional development opportunities when they arise (Table 5). This is consistent across respondents regardless of previous study locations. When asked what help was required to succeed in their chosen profession, respondents concentrated on three areas: engagement with industry, careers support and development of professional skills. A student who previously studied in the UK outlined that this would help "students have a better idea of what is possible and what they can pursue."

Table 5. Will know how to access professional development opportunities when they are available? (N=60)

Previously studied at	Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident	Total
UK university	0	1(10%)	2(20%)	3(30%)	4(40%)	10
Non-UK University	0	7(14%)	9(18%)	21(41%)	13(25%)	50
Total	0	8(13%)	11(18%)	24(39%)	17(28%)	60*

*one student (2%) did not respond to this question.

An important element of a new learning environment are the expectations to acceptable conduct. Respondents noted a high level of confidence in their ability to behave in line with the university values: 56% (n=34) are 'extremely confident' (Table 6). This initial finding suggests the importance of an online resource for enabling students to comprehend and apply common values for the creation of a shared learning environment.

Table 6. Will behave in line with University values? (N=61)

Previously studied at	Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident	Total
UK University	0	1(10%)	2 (20%)	1(10%)	6(60%)	10
Non-UK University	2(4%)	2(4%)	5(10%)	14(27%)	28(55%)	51
Total	2(3%)	3(5%)	7(11%)	15(25%)	34(56%)	61

In contrast students are less confident on behaving in line with the expectations of an independent learner (Table 7). For instance, 33% (n=19) of respondents identified they are 'extremely confident' whilst a majority of respondents (71%, n= 42) are 'quite confident' or 'extremely confident'. This is an area in which the online Induction resource can be improved given the importance of independent learning at master's level.

Table 7. Will behave in line with the expectations of an independent learner at the department? (N=61)

Previously studied at	Not at all confident	Slightly confident	Somewhat confident	Quite confident	Extremely confident	Total
UK University	0	3 (30%)	2 (203)	0	5 (50%)	10
Non-UK University	2(4%)	0	11(22%)	23(45%)	15 (29%)	51
Total	2(3%)	3 (5%)	13 (21%)	23(38%)	19 (33%)	61

Overall, initial findings evidence the online Induction resource is helpful in supporting student's transition to the department, including students who previously studied in the UK and those who did not. Regarding student's self-efficacy, it is noted the resource has enabled students to anticipate that their actions will be aligned with University values and departmental expectations of independent learning, as well as access opportunities for professional development. Yet it is noted the resource may be improved in developing student's self-efficacy regarding assessment and accessing independent student advice.

DISCUSSION

In entering a new learning environment with its unique culture and ways of educating, students must reconcile their previous education experiences, and even recent professional work, with the nuances of studying for a degree within the department. For instance, international postgraduate students are known to have diverse feedback literacies, hence intercultural awareness to assessment and feedback is essential to promoting academic success (Rovagnati, Pitt and Winstone, 2022). Therefore, in recognising the potential for differing self-efficacies between students who previously studied in the UK and those that have not is significant to appreciating nuances in student experiences, which can be improved in the online resource to support self-efficacy related to assessment and feedback.

An online Induction resource can help students in preparing the transferrable skills to study at master's level (Robb and Moffat, 2020). Also, this resource can help students flourish in an academic environment by accessing independent advice and professional development. This is important in supporting students to transition across the wider spectrum of activities that constitute a holistic student experience.

Students from highly represented countries can form exclusive peer networks before arriving at university. This can create a sense of alienation for students from countries with a lower representation. To ensure both academic and social success, it is crucial for students to have a pro-social attitude to feel confident in seeking support from peers when required (Brouwer and Engels, 2022). When this pro-social attitude is challenged by apparent closed groups, this willingness to seek support from others is reduced, hence it's important that students can independently seek the support they need. Therefore, a shared online induction resource can help to improve confidence in seeking support and reduce risks of spreading misinformation within informal peer networks. However, an online resource must be designed to complement in-person welcome sessions since these social opportunities enable students to form a cohesive community.

As a student's socio-cultural capital influences their initial expectations of university, peer input remains a trusted source of information (Mearman and Payne, 2023). Sources of anticipation include the level of interaction with their cohort, communication with the tutors, and managing the level of study. With a large international body, the range of the socio-cultural capital is vast, and the range of peer guidance must reflect this same diversity. The delivery method for induction impacts student welfare, with some reporting that they feel pressure to quickly understand a mountain of information (Billing, 1997). This can be

the case when students are not placed at the centre of the design. By designing an always-available online induction resource with the student needs at the centre, reflecting the emotional journey travelled rather than an administrative journey, intertwined with lived experiences, students can start their learning journey with a positive first step to enhancing their self-efficacy towards academic achievement.

CONCLUSIONS & RECOMMENDATIONS

An online Induction resource can support student self-efficacy, which is significant in enabling students to confidently transition into new learning environments with unique processes, principles, and expectations. A curated virtual resource tailored to the department and student programmes enables an individualised learning journey that promotes relevant guidance to accessing advice, careers support, university values and departmental expectations to independent learning, which are key to student self-efficacy to succeed. Therefore, engineering educators are recommended to:

- Invest in the development of a flexible, virtual resource that make it possible for students to transition into a new learning environment where they can flourish

- Incorporate peer voice into an online Induction resource in which current and recent students can share their learning experience in a way that contextualises advice into practice

- Ensure the longevity of the online resource so students can return to it throughout their studies for relevant information

In conducting this initial study, it is recognised that the limited number of responses from full-time master's students who previously studied in the UK makes it difficult to rigorously compare their self-efficacy to students who did not previously study in the UK. In addition, a lack of comparison of self-efficacy prior-to and post-completion of the online Induction resource can make it a challenge to capture changes in self-efficacy. While these are opportunities to further research, nonetheless the initial findings of this study demonstrate the help of the online Induction resource to support student's transition.

To expand on the investigation of an online Induction resource, engineering education researchers may explore the inclusive design of such a resource to recognise and support diverse students. In addition, it is beneficial to also consider the use of an online Induction resource to support the self-efficacy of undergraduate students and degree apprentices to promote the flourishing of all students in the department. Hence engineering education

researchers have several opportunities to support students transition to a new learning environment to make it possible for students to succeed.

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