

## Evaluating an online induction course at the University of Strathclyde

### 1. Introduction

There has been recent focus on the use of online learning to support students' transitions into higher education. For example, Piatt (2009) describes the use of a game format with social elements as an online supplement to existing induction processes. Whitton et al (2014) describe a 10-week course consisting – again – of an online game which introduces new undergraduate students to the campus and local environment. The provision of *pre*-induction support has also received some attention. Keenan (2009) reports on the use of online pre-induction resources to reduce the information burden on induction week. Watling (2009) describes a project providing students with access to a university's virtual learning environment prior to induction, and a set of materials and activities designed to deliver insight into academic skills. Hills (2006) reports on the pilot of a summer pre-induction course intended to reduce the anxiety and isolation of incoming students, by providing relevant information and chances to communicate with other students.

'We are Strathclyde' is a new online course designed to support first year undergraduate students arriving at the University of Strathclyde. The course is intended to give students a sense that they are joining the University community, where they will be both challenged and supported to engage. The course calls on aspects of Salmon's model of online learning (Salmon 2003) to establish the kind of 'presence' discussed by Vygotsky (1978). The course design sought to establish an online Community of Inquiry (Garrison et al 1999) to engage students through reflective activities with active tasks and with their peers. The course aims to familiarise students with what they will encounter when they start, to help them be better prepared and more likely to succeed when they encounter challenges. This is done through focusing on three levels: practical information about the University and the support that is available to them; information and activities to help them build their academic skills; and high-level reflection on fundamental issues. Students are also encouraged to begin to create social networks via discussion forums.

The course is run over four weeks, with an expected minimum of two hours activity per week. There are between 14 and 16 activities each week. The activities are primarily videos, questionnaires and polls, and discussions to contribute to. The videos include interviews with current students and academic staff about the nature of university-level study, and a filmed story element that follows three fictional students through their first year, encountering a range of common issues such as financial concerns and the need to balance study and socialising.

Individuals were invited to participate in the course in August 2016, after their place at Strathclyde had been confirmed but prior to registration at the University. The course ran for four weeks, supported by members of the Education Enhancement team at the University of Strathclyde who moderated discussions and facilitated live online interactive video broadcasts (Google Hangouts).

The purpose of this study was to evaluate the course in order to inform future redevelopment. The study was particularly focused on two questions:

- What was the level of students' engagement in the different elements of the course?
- Was there any relationship between students' engagement in the course, and their confidence about starting at Strathclyde?

### 2. Data collection

Data were collected for students who viewed any element of the course during the four week duration. The cohort consisted of 624 students, 15% of the students who were invited to participate in the course. For those 624 students, data was collected from a pre-course questionnaire, and on their engagement in the course activities. The engagement data consisted, for each of the activities in the course, of data about whether a student viewed the activity, and – for those activities that involved tasks – whether the learner completed the task. The viewing of activities was subject to permission conditions, and data about learners' permission to view an activity was also collected: in most cases, permission to view an activity was dependent on the learner having viewed the previous activity. There was a total of 63 activities, 29 of which involved tasks (17 discussion forums and 12 quizzes).

Data were also collected from a post-course questionnaire, completed by 113 students (18% of the cohort), which asked students to rate the course, comment on the most and least useful aspects, provide suggestions for improvement, and – mirroring the pre-course questionnaire – asked them to rate their confidence about beginning their studies, and to state any concerns they had.

In mid-October 2016 – the fourth week of teaching – first-year Strathclyde students were invited to complete a questionnaire exploring their experience of induction. 255 of the 624 students in the 'We are Strathclyde' cohort completed that questionnaire.

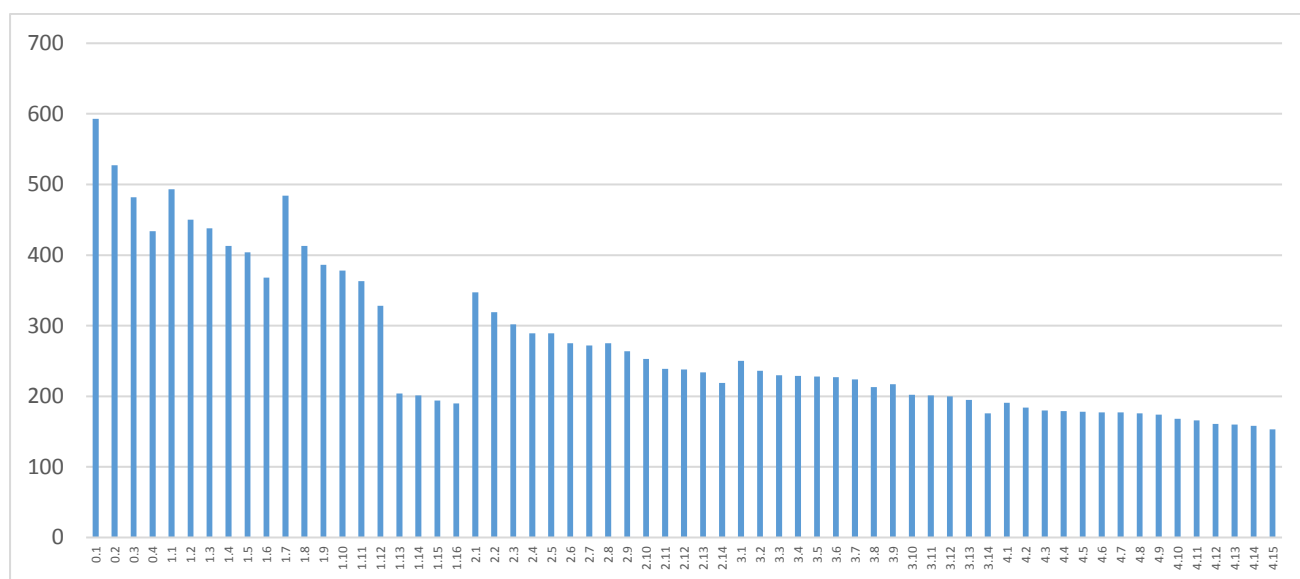
All data was linked at the individual level, allowing exploration of the relationship between learners' engagement in the course and their perceptions as reported in the questionnaires.

### 3. Results and discussion

#### a) *Engagement in the course*

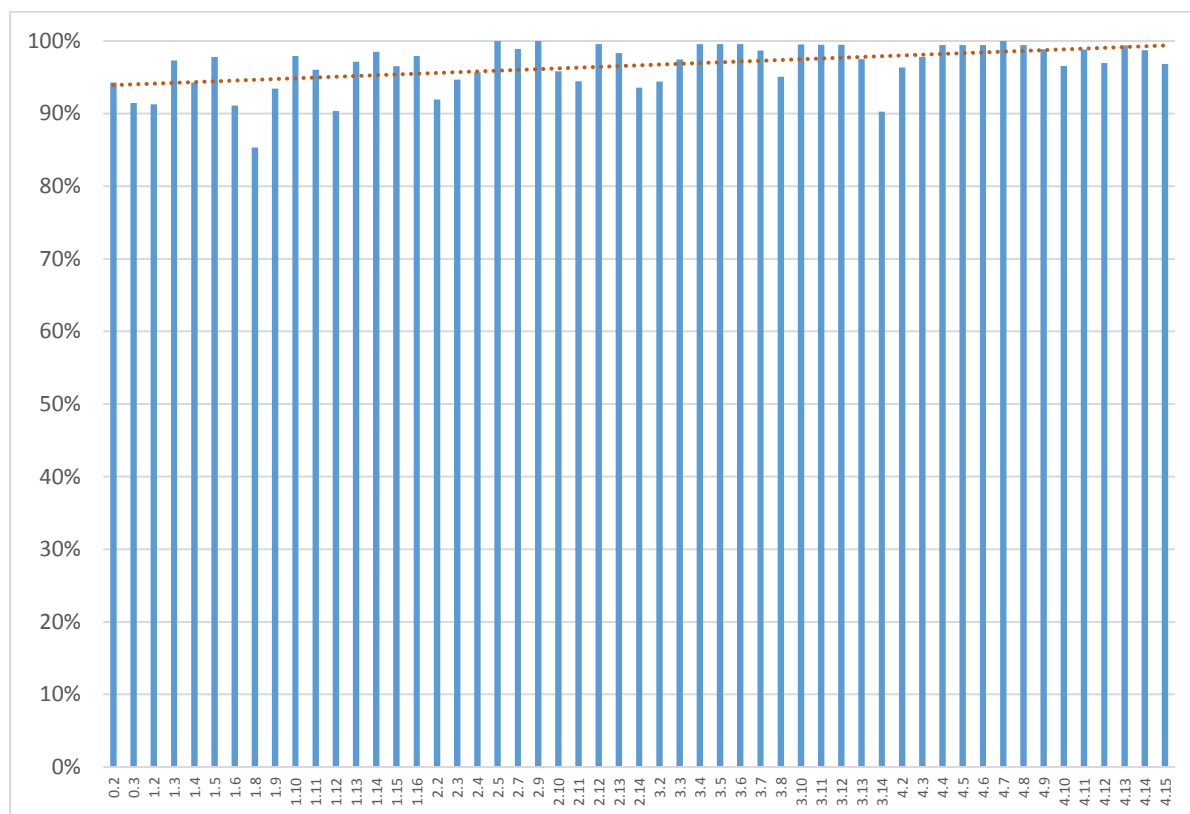
Figure 1 shows the number of students who viewed each of the 63 activities, in chronological order. As expected for a purely online course, a decline in engagement is seen over the duration, from 593 students (95% of the cohort) viewing the first activity to 153 (24%) viewing the final activity. Peaks can be seen for those activities without restrictions on viewing permission: the first activity of each week (0.1, 1.1, 2.1, 3.1 and 4.1) and also activity 1.7. The pronounced dip for activities 1.13 – 1.16 is primarily due to more stringent permission conditions for those activities.

Figure 1: Views per activity



To more accurately gauge students' engagement with activities, it is important to take into account the fact that students were not automatically permitted to view an activity; for the vast majority of activities, students were required to have viewed the previous activity. Figure 2 shows, for each of the activities, the proportion of students with permission to view the activity who actually did so. Ten activities have been excluded, either due to errors in the underlying data or because there were no permission conditions for those activities.

*Figure 2: Proportion of students with permission to view an activity, who viewed the activity*

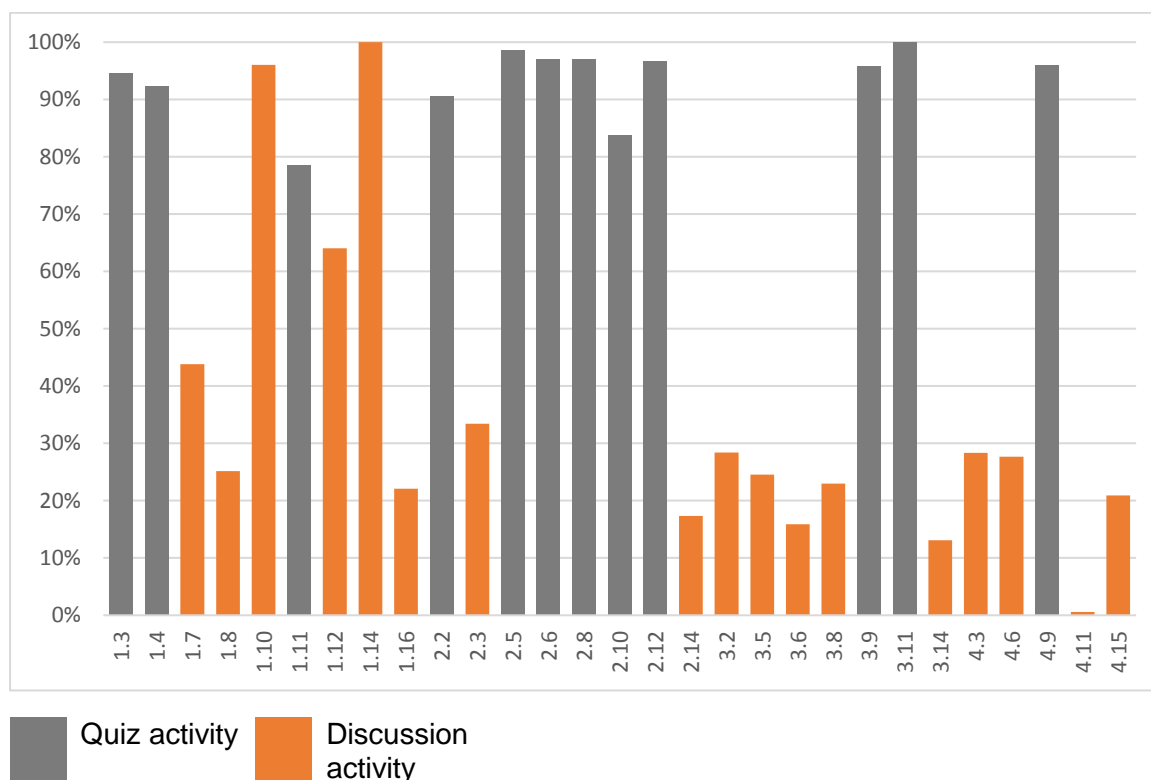


The chart shows that the proportion of eligible students who viewed each activity was fairly high, with an average of 97%. The trend line shows that eligible students were more likely to view activities that were later in the course, i.e. as the course progressed engagement was stronger.

A lower percentage of eligible viewers for an activity suggests that the previous activity reduced learners' enthusiasm: they viewed that activity, but did not go on to view the subsequent activity. On that basis, there is some indication that tasks – as opposed to videos or resources to read – were less popular with students: three of the six activities with the lowest engagement were tasks (two of them being discussion forums), compared to only one of the seven activities with the highest engagement. The activities with the lowest proportion of viewers were 1.8 and 3.14, suggesting that activities 1.7 and 3.13 were relatively less popular with students: 1.7 was a discussion task, asking students to introduce themselves, while 3.13 was a Google Hangout where members of staff answered questions from students.

Twenty nine of the activities were tasks, inviting students either to complete a quiz or poll, or to post a discussion on a forum. Figure 3 shows the proportion of students who viewed a task who also completed the task (either by answering the quiz or poll, or by posting a contribution on a forum).

Figure 3: Proportion of students viewing a task, who completed the task

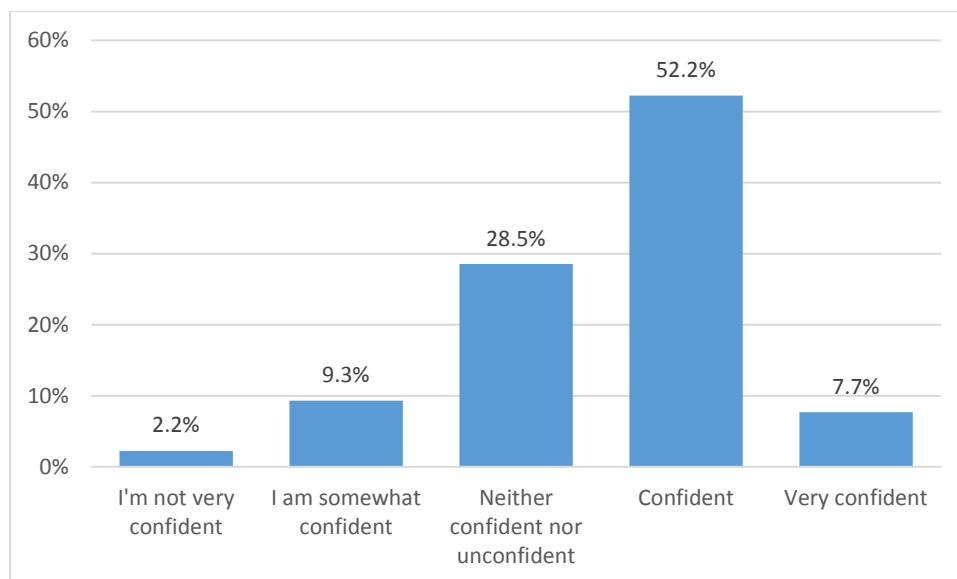


The chart shows a wide variation in the proportion of students who completed each of the tasks. There is a clear pattern suggesting that students were less likely to complete discussion tasks. Seventeen of the 29 tasks were discussions, and discussions comprised all of the 15 tasks with the lowest level of engagement. The average task completion for the discussions was 34%, compared to 93% for the quizzes. In that context, it is particularly striking that two of the discussion tasks showed very high levels of engagement: 96% of viewing learners completed task 1.10, which was a discussion following a video on the nature of a university; 100% of viewing learners completed task 1.14, which was a discussion following a video on the characteristics of a successful student. In the context of the general pattern suggested by the engagement data, these appear to be particularly successful activities.

#### b) Confidence and engagement

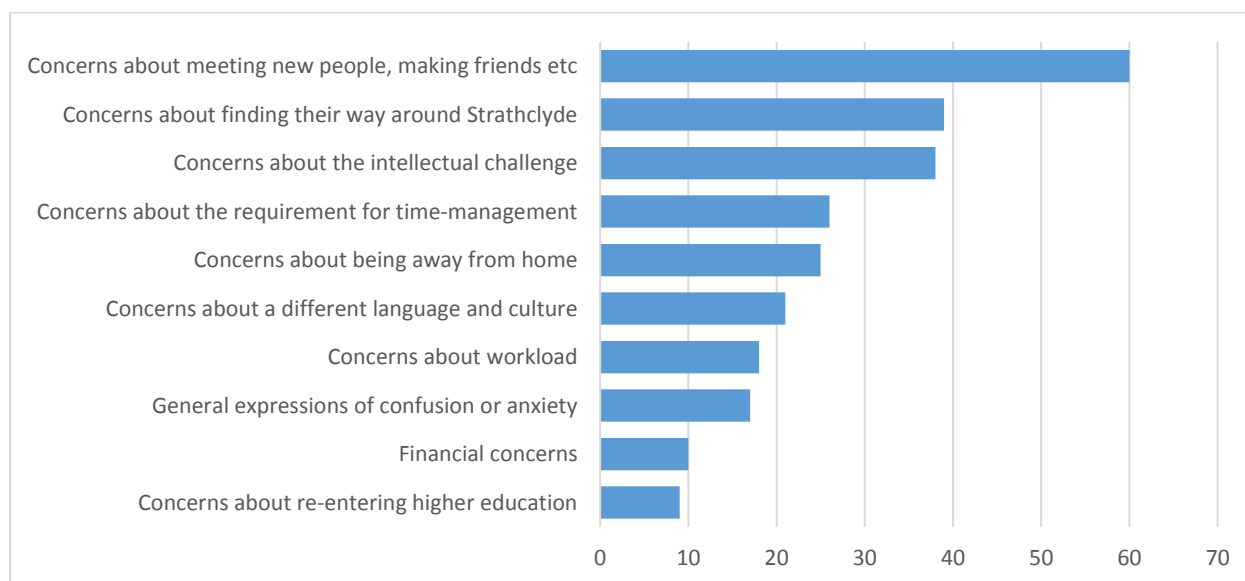
Both the pre-course and post-course questionnaires asked students to provide their level of confidence about starting at Strathclyde. Figure 4 shows the confidence levels of the 624 students who completed the questionnaire prior to the course. 60% of the students are either confident or very confident. There was no statistically significant correlation between students' levels of confidence prior to the course, and their engagement in the course (either in terms of proportion of activities viewed or tasks completed).

Figure 5: Responses to pre-course questionnaire question, 'How do you feel about starting at Strathclyde?'



Students were also invited to provide text responses to the question 'What concerns, if any, do you have about starting at University?'. Two hundred and eighty students provided comments, and analysis of the data revealed 10 common themes. Figure 6 shows the number of students whose comments featured each of those themes.

*Figure 6: Occurrences of 10 common themes in response to pre-course question, 'What concerns, if any, do you have about starting at University?'*



The most common group of concerns, by some margin, relate to social integration: making friends, getting along with flatmates, meeting new people, etc. There were also a high frequency of concerns about navigating around the Strathclyde campus. Concerns about intellectual challenge were similarly common, expressed either in terms of managing a step up from school-level academic work, or about particular aspects of learning in higher education such as independent learning and what to expect from lectures.

Figure 7 shows the change in confidence between the pre-course and post-course questionnaires. To provide a more accurate picture, the pre-course data have been restricted to those who completed the post-course questionnaire. The data thus represent

how students' confidence about starting at University changed over the duration of the course. The data consist of 112 responses.

*Figure 7: Confidence about starting at University, pre-course and post-course questionnaires*

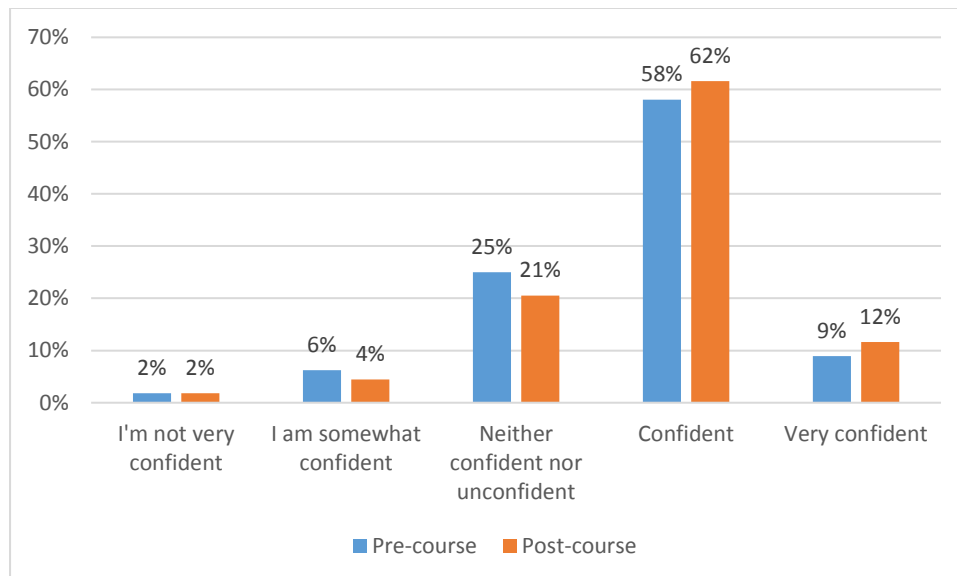
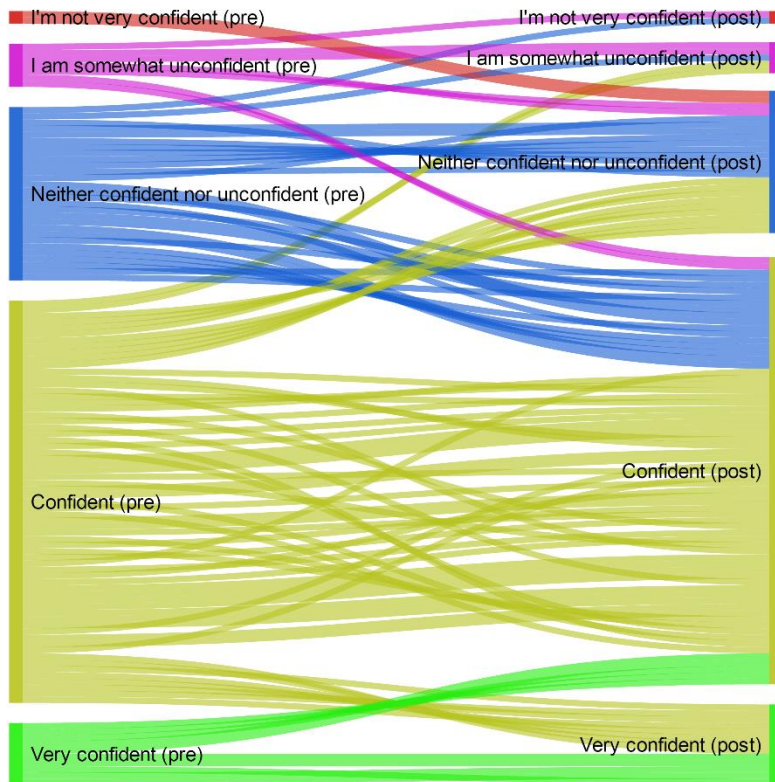


Figure 7 shows that there was only a slight change in confidence by the end of the course, for those students who did go on to complete the post-course questionnaire. The proportion of students who were confident increased from 58% to 62%, and the proportion of students who were not very or only somewhat confident decreased from 8% to 6%. This is a positive finding, but is weaker than might be expected, given that this group of students – those who completed the post-course questionnaire – viewed, on average, 62 of the 63 activities, and completed 18 of the 29 tasks.

To explore this further, figure 8 consists of a Sankey diagram showing the flow between pre-course and post-course confidence levels. In total, the confidence of 30 students increased, the confidence of 19 students decreased, and the confidence of 63 students stayed the same. Figure 8 reveals in more detail the considerable amount of flux in individual students' levels of confidence, which is masked by the overall picture given in figure 7.

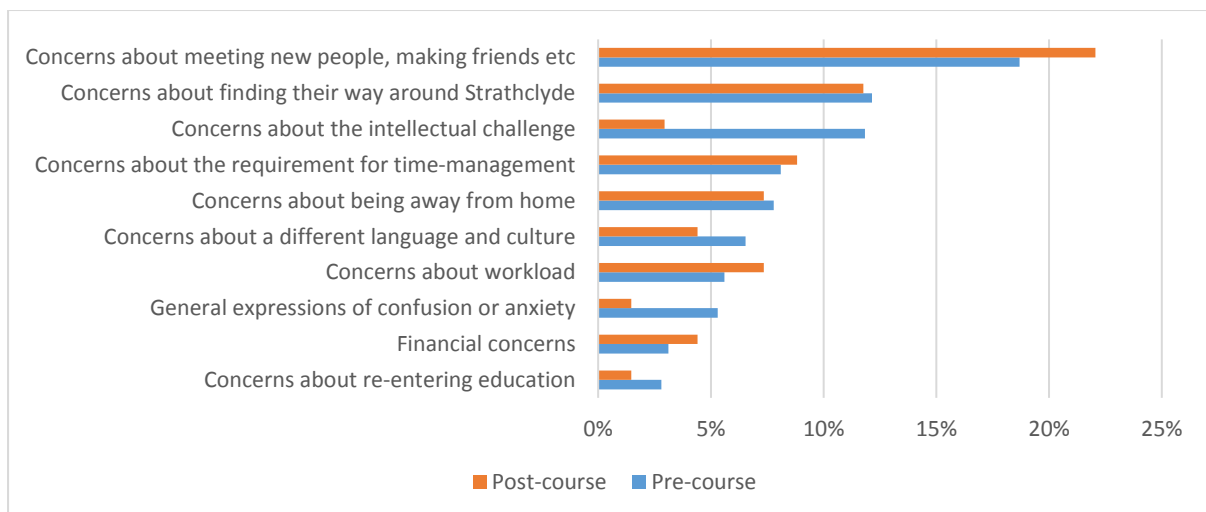
*Figure 8: Sankey diagram showing pre- and post-course levels of confidence<sup>1</sup>*

<sup>1</sup> Sankey diagrams were generated using <http://sankeymatic.com/build/>



The quantitative data provided did not shed any light on the changing confidence levels: there was no statistically significant correlation between the change in students' levels of confidence, and their engagement in the course (measured by the proportion of activities viewed or tasks completed). The post-course questionnaire mirrored the pre-course questionnaire in asking students to provide comments about any concerns they had. Fifty six students provided substantive comments about their post-course concerns. Analysis of the data found similar themes, and so the data were coded using the same codes used for the pre-course questionnaire. Figure 9 shows the proportion of comments that contained each of the 10 themes, for both the pre-course and post-course questionnaire.

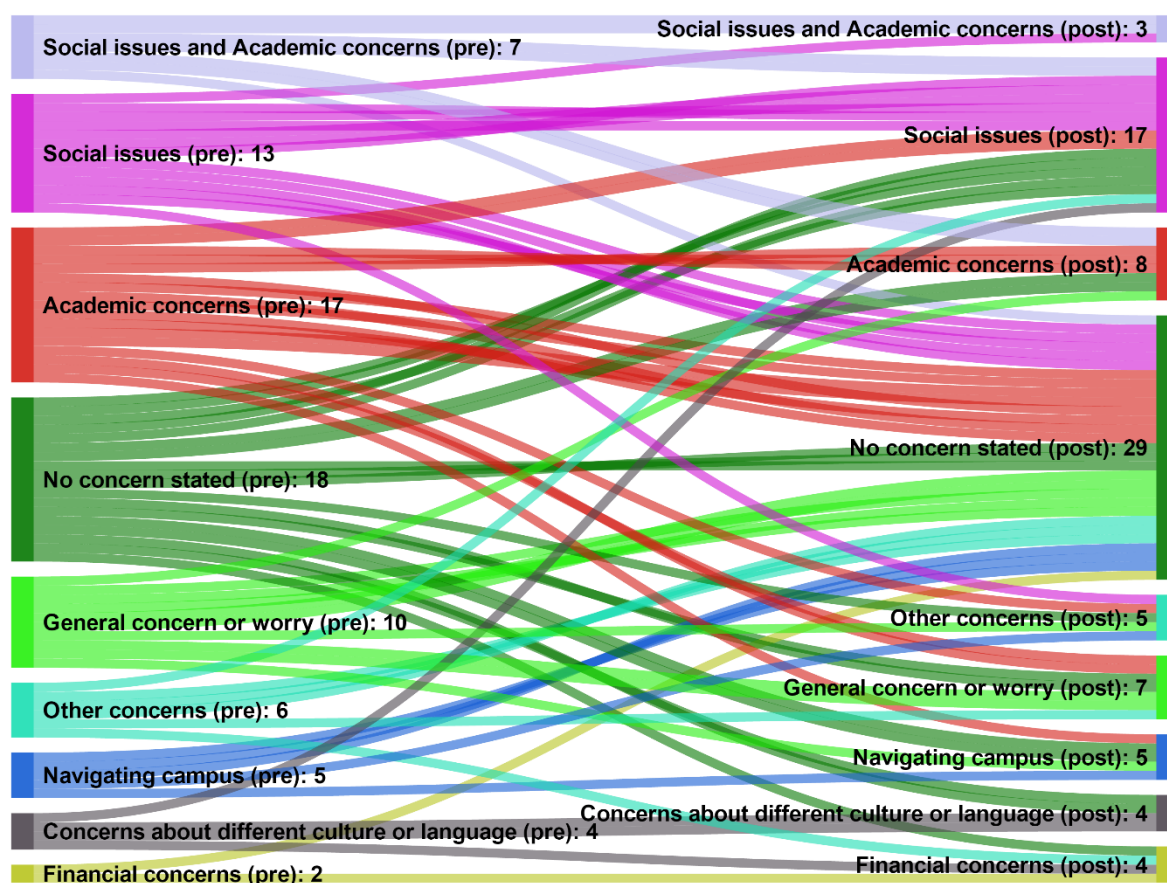
Figure 9: Occurrence of concerns in pre- and post-course questionnaires



The decrease in concerns about the intellectual challenge of the course is pronounced, as is the decrease in general expressions of confusion or anxiety. To eliminate any possibility that

these changes are due to the particular students who completed the post-course questionnaire, it is important to look specifically at those students who provided comments before and after the course. Thirty nine students provided substantive comments about their concerns both in the pre-course and the post-course questionnaire. Figure 10 is a Sankey diagram showing the change in individual students' concerns between those two points. The themes have been combined for ease of presentation.<sup>2</sup> The figures in the diagram represent the number of students who voiced each of the concerns.

Figure 10: Sankey diagram showing pre- and post-course concerns



The numbers are small, so caution should be exercised when interpreting the data, but figure 10 shows a considerable amount of change in students' concerns between the pre-course and post-course questionnaires. For example, while the number of students concerned about navigating the campus does not change (five students expressed that concern both before and after the course), different students are expressing that concern: only one student retains the concern – of the other four, three did not state a concern after the course, and one student had other concerns. The greatest shift is away from academic concerns; a category of concerns including worries about particular study methods, greater intellectual challenge, academic workload or returning to study. Prior to the course 24 students expressed that concern, either alone or in conjunction with concerns about social issues. That constitutes nearly two thirds of the relevant students. By the time of the post-course questionnaire, that number had more than halved to 11 students. Only five students carried that concern from the pre- to the post-course questionnaire; but for some students

<sup>2</sup> The 'No concern stated' combines both those students who did not enter a comment, and those who explicitly stated that they had no concerns.



their concern merely changed, e.g. from an academic concern to a general worry, or to social issues. In contrast, the group of concerns that increases in prominence is related to social concerns: making friends, living away from home, meeting new people etc.

Overall, the picture presented by figure 10 is complex. There is some evidence that the course helped to reduce students' concerns about academic issues, but it is also evident that between starting and finishing the course, some students' concerns merely changed (with a notable increase in social concerns), or developed where previously no concern had been reported.

Finally, for 255 students, data was collected from the Strathclyde Induction Survey a few weeks after completion of We Are Strathclyde. This included a question asking students how well they feel they are settling in to Strathclyde. A small but statistically significant positive relationship was found between the proportion of tasks that students completed on the course, and the extent to which they felt they were settling in well.<sup>3</sup>

Overall, those students who completed the post-course questionnaire (and had therefore continued studying until the end of the course) were very positive about the course. 90.1% of respondents to the post-course questionnaire reported that they liked or strongly liked the course, with only 0.9% (1 student) disliking the course.

#### 4. Conclusion

We are Strathclyde was intended to engage students in a range of activities that introduced them to key ideas, resources and skills that would prove helpful as they began their courses. The data suggest that the course succeeded in engaging students: around a fifth continued studying until the end of the course, and on average students viewed 44% of the activities, and completed one quarter of the tasks. Those students who completed the post-course questionnaire were very positive about the course.

Despite these positive findings, there was only a very moderate improvement in students' confidence about beginning their studies. While many students' confidence increased, for a substantial minority their confidence decreased. Investigation of how students' concerns changed between the pre-course and post-course questionnaires provides evidence that rather than eliminating students' concerns, the course played a role in clarifying concerns, shifting concerns, and bringing concerns to light. One of the purposes of the course was to help students to reflect on the challenges that they may face. It is plausible to interpret the flux in students' confidence and concerns as limited amount of evidence of that reflection.

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<sup>3</sup> A Pearson correlation of 0.14,  $p < 0.05$ .

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