

Engineering Successful College to University Transitions - The Engineering Academy

Overview

Summary

The main aim of this project was to understand and co-develop successful support approaches and mechanisms for students making transition into their first year of study in Higher Education, by direct entry into second year from Further Education colleges. Specifically this project focussed on Engineering Academy students making their transition into year 2 of an engineering degree at the University of Strathclyde from a network of Further Education colleges.

Two engineering student interns carried out the study in collaboration with key academic and engineering academy staff. The student interns, who had just completed second and third year respectively, had both taken non-traditional access routes to studying engineering at the University of Strathclyde. One through the engineering academy route whilst the other came to first year engineering through a further education college HNC route.

Initially, the study focussed on capturing the current experience of Engineering Academy students, specifically:

- Interaction with University during HNC study
- Social and academic integration
- CV and employer engagement
- Departmental practices
- Summer schools
- Student union groups and societies
- Library and on-line services
- Social media

Opportunities for improvement were then explored, specifically :

- Interaction with University during HNC study
- Induction to University
- Managing expectation and informing choices
- Social and academic integration
- Mentoring including peer mentoring
- Student event
- Summer schools

In order to fully understand the Engineering Academy student transition experience and develop appropriate support mechanisms the following methodology was adopted:

- A literature review
- Survey of Engineering Academy students
- Interviews with EA staff
- Case studies from other institutions
- Library and on-line services
- Social media

A full research report is available below.

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Context

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Themes

Student Transitions

Rationale

As a new programme the engineering academy concentrates on adapting students from HNC and preparing them to advance straight into (Higher Education) HE, and dealing with both the social and mental expectations of obtaining a degree. Literature clearly identifies challenges, barriers and success factors for transition from Higher to Further education. However, there is a limited body of research which reports on the discipline of engineering. Approximately, 80 students per annum will be entering year 2 of an engineering degree at Strathclyde through the Engineering Academy. The motivation of this study is to understand their experience, and in particular to highlight strengths and potential areas for improvement. It is also hoped that transferable lessons can be learnt across the university since these students represent a large proportion of the students entering Strathclyde through non-traditional routes.

The specific aims of this project were to investigate and identify:

1. The transition experience of students from FE Colleges into Strathclyde.
2. Positive aspects and key strengths of the current transition experience
3. Particular challenges faced including academic, social and cultural issues
4. Mechanisms and approaches with the potential to enhance and develop the widening access student transition experience clearly addressing the challenges faced and building on existing strengths.

Successes

The main outputs from the project are:

- A clear picture of the current experience of Engineering Academy students transition from Further Education to Higher Education, based on the qualtrics survey.
- Recommendations for improving the transition experience

The main recommendations are listed below (full details can be found in the research report available to download at the bottom of the page). Recommendations are presented in the form of the different transitions that Engineering Academy students make: "Working through an HNC", "Arriving at university" and "Getting started"

Step 1 Working through an HNC

An effective coordinated institutional strategic approach to inform the students while studying for their HNC

For the students working through their HNC there must be a clear understanding of what their aims are and what is expected of them. It is important for students to feel a part of Strathclyde to reduce anxiety and misinformation. One of the largest contributing factors for an unsuccessful transition relates to the lack of preparation for and understanding of what University involves, and ill-informed preconceptions about what they will encounter. To avoid this issue the University must ensure students receive the same basic information and at the same time, requiring a coordinated approach across the Engineering Academy (EA).

HNC staged emails

There are certain tasks that all the EA students must complete before they can successfully be enrolled into 2nd Years Engineering. Every student has to register online, collect their student cards, attend their induction day, and receive their timetables. Students do expect information immediately, especially through any online methods of enquiry. Even though it is impossible for the departments to answer every question straight away, the use of such staged emails is to cancel down the amount of confusion and uncertainty through their HNC.

Video Tutorials

Emails sent from the moment of being accepted into the EA programme, providing video guides that students can follow, useful for areas such as the VLE, registration and timetable.

Department Induction

A department induction is crucial for the students arriving to have a full understanding of the years ahead of them. It should outline the departments' course structure, opportunities of switching from BEng to MEng to allow students a good grasp of what is available to them. Also the induction should include careers prospects and graduate career information and a further look at any available scholarship information.

Tour of Faculty

There should be a tour showing the HNC students where they will be when arriving at University, laboratories, PC laboratories, workshops, research laboratories. The tour should also include the McCance building for student resources and finance. This will help create a better picture to the students of what they will be coming to after their HNC. It will create a better relationship with students and staff as they will be able to ask questions with a member of their department issuing the tour

HNC-Engineering Academy Activities

According to previous work, inductions before entry can be an innovative way to provide additional support and build good relationships. The gaps in transition can be better utilised to provide clarity of expectations, build confidence and motivation and allow students to integrate. This process is most effective if it starts before proceeding into university such as HNC student entering a whole new environment for them in 2nd Year University.

Providing the students tasks to do before entering 2nd year can benefit both students and staff. HNC students are nervous of what is awaiting them at University. Providing students with tasks not only allows the students to familiarise themselves with their department and university but also relieves any pressure for the students who aren't entirely sure what to expect when they arrive at University.

Such tasks will also allow an element of academic integration for the EA students. Whilst these tasks can be basic they should encourage independent study, with a different level of expectation being asked of them. These tasks can also help staff to see where the students are in their HNC and what students could be at risk of falling behind and the level to which the HNC students are being taught whilst at college.

As well as selected activities, an introduction to Myplace with the use of Quiz days and how to upload assessments will be created. These online activities help the students to use Myplace and have a better understanding how VLE works at an earlier stage.

EA Mentoring

While being at college the students will be linked with an EA buddy/mentor - an EA student from University. This would work better with a 3rd or 4th year EA student who is more settled down in class and able to give sound advice and help. Mentors should be trained.

Peer matching could provide a better peer link for the mentoring programme, e.g. matching a mature student studying on the HNC with a mature student at University, this could help regarding communications and empathy, ensuring a better link between the peers. This would also include comparing each student from diverse backgrounds with a buddy with a similar path. This would help encourage students showing that those from similar backgrounds are able to proceed with University.

One final addition to the idea of peer mentoring, is to run group sessions of HNC students with 1st year university students. The current students will teach those arriving from HNC what they should expect when arriving and how to work with class choices, coursework, assignments, societies and events. This creates a social and academic link for the students beginning the EA programme, while alleviating the issue preformed peer groups come second year.

University Class at College

It will be effective for students to experience classes and lectures that they will experience at University. From evidence received from informal interviews and from the 2015 EA survey many students found Maths incredibly difficult due to a large gap in academic difference from college to University. Taking first year university maths classes while at college studying for their HNC will allow this gap to be closed and provide useful insights into what studying at university is like.

Along with the idea of a class, an introduction into formal report writing could resolve the issue that report writing doesn't seem to feature much at college. The omission of this skill can hinder the progress of the EA student. A class(es) on the university campus for college students which develops these skills would be beneficial.

Step 2. Arriving at University

The Induction Checklist

Students who have completed their HNC and have succeeded to the 2nd Year of the EA will join the rest of Strathclyde in their chosen degree.

Remembering that the rest of the students have successfully had a 1st Year buffer in the academic and social transition, the students may struggle in adjusting to university. Remaining aware of the students' needs, alongside the resources of departments and staff, it is recognised that the induction for the EA students is very much departmentalised. As such, it is impossible to recommend a strict, one-size-for-all model. Therefore we recommend the creation of the induction checklist, separate for students and staff, that would highlight certain activities. The induction checklist provided below aims to cover the following areas: Student preparation and skills; Academic Integration; Social Integration; Communication of services available.

- Email Students With Induction information, Communications and Checklist
- Update staff knowledge on Support services
- Introduce students to IT facilities/ services – Myplace.
- Ensure PDAs engage with students.
- Introduce Students to Support Services.
- Host a Campus tour
- Host Library tour
- Discuss aims and objectives of programme to study.
- Host social integration Events for Students/Staff.
- Host group activities for Students. Set Up Engaging And Useful Induction Task For Students.
- Promote Current Excellence Or Achievement In Department, Aspirational Achievements.
- Stage Daily Emails in Week 1 to Stress Importance of Checking Email.
- Introduce PDP Development And Interaction.
- Create Achievable Task To Complete For Week 1 And Upload To Myplace.
- Promotion of Careers and End of University Opportunities.
- Advice on Volunteering and Placements, Plus Any Scholarship Available.
- Encouragement to ask for help in Tutorials. Ensure students know to ask for help.
- Discuss with students referencing and plagiarism.
- Discuss advice on Study Skills.
- Discuss Health & Safety regulations- Laboratory/studio-based.
- Notify students of Network Log-in code.

Step 3. Getting Started

All students should be given a package explaining all of the support services (The new Student Experience Service booklet would be appropriate). Support Services should be labelled clearly, detailing exactly what they do and who to talk to about certain issues. There is an unnecessary level of bureaucracy within the University that both students and staff struggle to navigate. Students and staff need to know who to talk to, but the survey and interviews revealed that this is not always the case.

Creation of a University wide social media policy which allows the University to communicate with students through informal social networking methods such as Facebook. Staff should be made aware of the positive aspects of social networking, and how it can be implanted and used in a professional environment. A short seminar is suggested. This is key to understanding student demands, needs and requirements, and would allow students and staff to develop a better understanding of what the other party expects.

Students should be encouraged to reflect both personally and academically on their performance. This is particularly important after receiving feedback from a project/ assignment/ exam

Students should have catch-up meetings with their PDA to discuss overall progress and how they are doing. Feedback workshops should be offered which would give students the opportunity to understand how to understand their feedback, and the next steps for improvement

Lessons Learnt

In future years it would be beneficial to capture data from Engineering Academy students as they enter and exit year groups. Prior to them leaving for their industry placement.

Challenges

There were some difficulties engaging responses from Engineering Academy students during the summer months. One possible reason for this is that Engineering Academy students undertake an industrial placement over the summer.

Scalability

This project focussed on the first cohort of Engineering Academy students i.e. students finishing their first year of study in Higher Education (Engineering Year 2 about to enter Year 3). In total this was 42 students. A further 80 students came to Strathclyde through the Engineering Academy in session 2015 /16.

Suggestions for Transferability

The outputs from this work could be applicable to other students entering year 2 of a Higher Education from Further Education. In the first instance within Strathclyde across other faculties.

Student involvement

The summer internship consisted of Paul Kirkland, a 4th year student (Electrical and Mechanical Engineering) (who transitioned from college into 1st year) and Charlotte S.Moran (Electrical and Electronic Engineering) an Engineering Academy student after completing 2nd year. The intention was to bring together both personal experiences and research of student transitions from FE to HE

The first cohort of engineering academy students were also engaged through participation in the survey.

Attachments

File	Modified 
PDF File EA Transitions Final Report with Survey.pdf	Feb 09, 2016 by Alex Buckley