REPORT

STUDENTS' PLACEMENT PROJECT

This project aimed to explore engineering students' placement experiences and to collect data to help the three stakeholder groups (students, employers and universities) to "do placements better" – "how to" guides. In particular:

- 1. Support for students in sourcing placements and how to talk about competences (mapping and recording their professional journey), prepare for aptitude testing and assessment centers etc.
- 2. Advice for employers on recruitment and selection (balanced with the other calls on students' time), constructing a good placement and assessment of the student.
- 3. Advice for employers about different sorts of placements and projects not just about work experience
- 4. Advice for HEIs on what employers are looking for, assessment, course content etc.
- 5. Model agreements for HEIs and employers

METHODOLOGY

Students' placement experiences were explored through interviews and one online survey. In total, 30 students participated in this study, of which 20 were interviewed (respondents R1-R20) and 10 completed the online survey (respondents R21-R30). Seven interviews were organized as testimonials/case studies.

Students were from the University of Bath, University of Cambridge, University of Hull, Imperial College London, University of Leicester, University of Salford, and Teesside University.

RESULTS

DESCRIPTIVE DATA

Age

Of the respondents, 18 were male and 12 were female. Sixteen of the respondents were between 18 and 21 years old, and 14 were between 22 and 30 years old.

Field of study

A great proportion of respondents (37%) were Mechanical engineering students (Figure 1). The majority of respondents (N=28) were studying towards a BEng or MEng, and 2 respondents were studying towards a PhD (one in Mechanical Engineering and one in Chemical/Process/Energy).

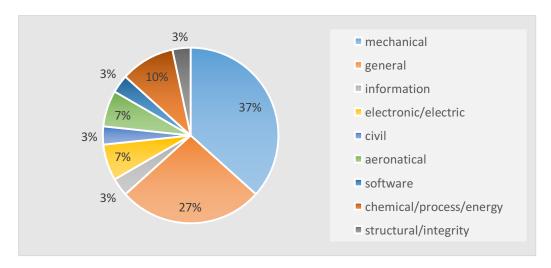


FIGURE 1. FIELD OF STUDY

Length of placement

The most common placement length was more than 10 months (Figure 2). Summer placements' length was usually between 5 and 10 weeks.

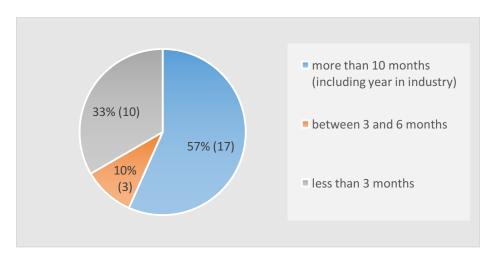


FIGURE 2. LENGHT OF PLACEMENT

Fees

Respondents doing a year in industry had to pay a fee to their university. The fee ranged between 900 and 1800 pounds.

Some students spontaneously mentioned how unsatisfied they were with the amount of fees paid during their placement experience, and questioned value for money.

(...) They could have a done a lot more. I paid a 1000 pounds just for one visit. (...) They said they would visit twice, but it was just one visit. Some of my colleagues just had a phone call. If they say they will visit twice, they should visit twice. It would have been nice if we met once in a couple of months just to see how things were going on, have a kind of supervision. [R11]

Salary

All respondents were working full-time during their work experience and being paid a salary ranging between 12,000 and 18,600 pounds per year.

OUTPUTS

Reasons for doing a placement

- Gain work experience
- Increase employment prospects
- Break from university
- Explore different engineering fields, narrow down interests (particularly relevant for students in General degrees)

The main reason for doing a placement was to gain work experience and increase job opportunities after graduation.

I was aware of some individuals being offered jobs by the companies they completed placements with. I also thought it would give me good experience for my CV. [R25]

The main reason was that I wanted to get practical experience and see what are typical engineering task. [R26]

Relevant work experience would enable me to stand out from other candidates when applying for graduate jobs. [R29]

Some students doing a year in industry also mentioned the possibility to take a break from university.

My placement wasn't compulsory for my degree but I knew it would be a really good thing to do in terms of getting a job and also it would be a really good break from university as well, and just kind of exploring the world of work. [R19]

(...) Also, it was an opportunity to take a gap year from my studies and refresh for my final year. [R26]

A total amount of 8-week work experience during summer was compulsory for some students in general degrees (e.g. University of Cambridge). However, the majority of these students also mentioned doing the placement to gain work experience and narrow down their interests.

It's just a general degree, and I wanted to know what engineering was about. [R13]

Supervision and assessment

University

Generally, students were very satisfied with the support their university gave them when searching and applying for a placement. University career services provided students with a list of companies and helped with the CV and cover letters. Some students mentioned that their departments had a specialized careers team who supported them throughout the process. When asked about what type of support would have been helpful, some students mentioned the opportunity to prepare for interviews (e.g. mock interviews).

Support was given however preparation and advice for internship interviews would have been appreciated. [R29]

For the majority of the inquired students, there was no formal supervision by the university, such as face-to-face meetings, during their time in the company. However, they were not expecting to have this type of supervision but were aware that they could contact the university if facing any issues.

I wasn't expecting much academic supervision. I did not have anything I felt I needed the supervision to help with. However, if I had felt the need for supervision I knew the support was there. [R25]

Most of the students had their placement assessed by the university through log books, and monthly or quarterly reports signed by their line manager at the company. Some students had also to prepare a presentation and/or write reports about the projects they were working in, but not necessarily about their placement experience.

The majority of students mentioned that the assessment of their placement was on a pass-fail basis. Just one student (Teesside University) mentioned how the placement was included in the final mark.

I had to complete a report and a presentation at the end of the placement. 5% of my final mark is the placement: how I did on the placement, the report and the presentation. [R18]

Students doing summer placements were also assessed on a pass-fail basis, after completing the required minimum weeks of work experience.

I had a supervisor, retrospectively, looking at my log book, and going through what I have done. [R13]

Employer

Most students had 1:1 meetings with their line manager, but also received more informal feedback on a daily basis and during team meetings.

I received excellent support throughout my internship not only from my direct line manager but also everyone else on the team whom I was working with. I was encouraged to ask questions-both technical and nontechnical and felt I was a valued member of the team. My supervisor/line manager always ensured I was comfortable with the tasks I was asked to complete and arranged regular meetings with me to review the work I had done. [R29]

Students working in small companies mentioned having constant feedback due to a close work relationship with their line manager and co-workers.

Supervision was great because it was such a small company. [R11]

Students working in big companies, although happy with the feedback received, mentioned that they would have liked to have received more frequent individual feedback by their direct line manager.

I was happy with the support received by the department overall. However, I did not have enough feedback meetings with my personal supervisor due to that he was responsible for all the projects in the facility. Please note that all the meetings I had with him were very productive but I just do not think they were enough. Also, it is important to note that any time I was asking him something I was receiving a response and support. [R26]

Placement experience

Most enjoyed aspects

- Doing something useful, with practical implications
- Gaining work experience in the preferred field of study or in different project (to narrow down interests)
- Being treated as a normal employee

The most enjoyed aspects of doing a placement were learning what engineering was in the "real world", and developing a wider set of technical and professional skills.

Practicing something that you can't do at university. [R5]

I am really enjoying the opportunity to see how the theory knowledge learnt in University is actually been used in real world practical projects. [R6]

I enjoyed the responsibility given to me and the fact that I was doing real work as opposed to just theoretical work. [R27]

I was able to see first-hand the application of theory, operating norms and complications that have the potential to arise on site. [R29]

The possibility to experiment different engineering roles and tasks was also mentioned as being extremely beneficial, particularly by the students who were in the general years of their engineering degree.

I went to the placement wanting to know whether I wanted to work in Structures once I graduated. So for me it was kind of a learning experience, trying to get to know the sector, knowing what the work was like, and experiencing the day to day business of working in a Structures company. [R14]

I felt I was trying a small company, and I am not really sure if I want to go to a small company, kind of a start-up, or a large company once I graduate. [R8]

Feeling part of the company, and not being treated just as an intern, was also pointed out as one of the most enjoyed aspects of the placement experience.

I think the best part was that I was seen as a team member of the department, so I wasn't seen as an intern. [R12]

Least enjoyed aspects

- · Lacking of challenging things to do, in particular moments
- Getting used to a new routine, and not having regular breaks as in school or university

Generally, students were very positive about their placement experience. As they were very eager to learn and gain as much work experience as possible during their time with the employer, the most frequent aspect that students' least enjoyed in their placement was the lack of work, or repetitiveness of work, during certain periods of time.

Sometimes there is not enough work which is when day seems bit longer than usual. Although reading documents is beneficial but I did not enjoy that as much as I enjoyed practical work. [R24]

Doing a placement for a year, I wish to be challenged for most of the time, but I guess that's the beauty of a work environment, there are days you wish to be challenged and days where low work load also pleases you. [R30]

There were a few weeks where I was doing a lot of checks... It was very tedious, it was quite long, but it was just for a few weeks. I was a pre-graduate student, so I was the obvious choice for these works. I really enjoyed everything else. [R16]

Students also mentioned difficulties in their initial adjustment to new working habits and routines.

I enjoyed the first week or so the least as I felt unsure what I was meant to be doing! [R25]

It's difficult to get in a work routine, staying in the same place all day, and focusing your attention, specially during the first weeks. But it's normal. You get used to it, and helps you to know the people in the company. [R7]

In the beginning of my placement I was given a number of tasks that weren't exactly the most interesting. And so at the beginning it was quite boring, but at the same time I almost feel like I needed that in order to actually get to know what was going on because I had no idea. It's a bit frustrating that you do have to go through that stage of being given less exciting tasks to do, but because you are new there, you have to understand and go through that period. [R19]

(in school) you have a break every 6 or 8 weeks and have the chance to recharge your batteries. It was really difficult not having that time-off, and being away from home. [R10]

Features of a quality placement

- Challenging experiences and variety of tasks and projects to work in
- Being given autonomy and responsibility
- Regular feedback
- Clear tasks
- Good work environment
- Location

Students want to acquire as much experience, knowledge, and skills as possible during their time in the company. Being given a mix of tasks and projects, and the opportunity to experiment different roles, was mentioned as an important feature to ensure a quality placement.

It is meant to be a learning experience year, so you should be able to get a broad range of experience. I worked in lots of different teams, did so many different things, and that was absolutely fantastic. [R15]

I was really lucky because I had a really good line manager that pushed me in different directions and gave me different projects on a range of topics. [R17]

Students wish their work to have an impact on the company and develop a sense of achievement.

It is good to have something where you can have some impact, even a small impact, because it drives you to work hard and with quality, and it gives you a sense of achievement once you complete it. [R8]

Have a small project entirely for the student on placement to do from the beginning till the end. [R30]

Regular and constructive feedback was a feature frequently mentioned by students, as well as clear work tasks.

I think is very important to discuss with the manager the work you are going to carry out, because often the job descriptions are very nice and sound amazing, but behind the fancy words there are some weird tasks. So it's important to ensure the transparency of the tasks. [R12]

My supervisor for this internship was really friendly and lovely, and I felt like I could go and ask him anything without feeling stupid, which was great because it meant I could learn as much as possible from the internship. [R14]

Having a good work environment – and good relationships with colleagues and managers – was referred by many students in order to fit in and enjoy the overall experience, and also to learn from more experienced staff.

A placement where they let you get stuck in and treat you like a normal employee. [R13]

If you want to enjoy your placement you have to go along with your colleagues and be interested in what you are doing. [R16]

(...) you are working with other people so they need to be able to support you and they need to be friendly and guide you as best as they can, because they have more experience than you. You are coming in as a newcomer, and it's great if you have people to help each other out and just create a good work environment. [R19]

Location of the company was also mentioned as an important feature of a quality placement, in order to guarantee a good work-life balance.

At this age it's important to be in a nice city, because you need to enjoy your life as well. I had an offer where the company was literally in the middle of the forest, and that's not a nice placement location.

[R12]

I definitely had a really good work-life balance, and I think you really appreciate that while doing a placement. [R17]

I've applied for jobs in Aberdeen, and I am from London. So... I think if I had gone to some of those it would have been a real struggle, because it would have been much a more cut-off and much more difficult. Location is definitely an important thing to take into account. [R10]

Pieces of advice for fellow students

- Be proactive and have a positive attitude
- Engage in extra-curricular activities
- Apply early

Students frequently mentioned the need to be proactive during the placement, ask questions and readjust work with line managers. Also, to show a positive attitude and a genuine interest on the work they are doing.

Go with a positive attitude, it's not just something to put on your CV. You need to have a passion about what you are doing, or just because your university wants you to do it. [R8]

Don't be afraid to talk to other employees in the company. Most people are willing to help you (...) Don't seat around in your corner writing your report, be more proactive. [R20]

Ask for lot of feedback and have a good communication with your line manager, because if something is not working, then that can help a lot. And if everything does seem to be working fine, then at least you can get tips on what to improve or what you can do better in the future. [R17]

Some students mentioned the importance of engaging in extra-curricular activities during university, being open to accept and engage in new projects during their placement.

Try to think outside the box and do extra things all the time. It is not hard to study and get great marks. If you do your work and spend some time studying, you can become very good academically, but then, when it comes to finding the right work, it matters a lot what you do outside your studies as well. So do as many extra-curricular activities you can. [R12]

Many students mentioned the need to apply early in order to increase their chances of getting a placement as closely aligned as possible with their interests and motivations.

That makes life a lot easier, because a lot of things are offered earlier in the year. So the early you apply, the better your chances are and better options are available. [R10]

Written by: Dr. Inês Direito

EPC Policy and Research Officer

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CASE STUDIES

Case Study 1

"It's definitely a plus in your CV"

Oishi Deb is a software and electronics engineering undergraduate at University of Leicester. She has finished her second year and is currently doing a yearlong placement at Rolls Royce where she is enjoying the opportunity to apply her knowledge in real world projects and also learn new skills that will benefit her future professional career.

Tell us about what you are doing in your placement and how did you find it.

I am doing a yearlong placement, working in Control - Software Engineering at Rolls Royce. I am part of the software design team for the Rolls Royce's BR700NG aircraft engine. I am working on the software for the aircraft's Engine Electronic Controller (EEC). I also get involved with the Electro-Magnetic Compatibility (EMC) testing software and learning more about the aircraft's engine control system. I am really enjoying this experience and I find it very interesting as it's very much related to my course. I am going to write a report on my placement work which will then be marked by the university and accredit my degree as having a yearlong industrial experience.

I started researching various placement opportunities and applied to few companies. On the same time, I started preparing myself for interviews, assessment centres etc. I really wanted to work at Rolls Royce so I applied on their website by completing the online application. Once my online application was accepted, I was invited to complete a series of online tests and once I passed that I was invited for the Assessment Centre. The Assessment Centre was a whole day session which started with the numerical test, presentation, competency based interview, team challenge and finally the technical interview. It went really well and I really enjoyed that experience. Following that, within 48 hours I received a call from them and I was so delighted to know that they offered me a placement role.

What are you enjoying the most and the least in your placement?

"I have enjoyed every bits of the work I get involved with."

So far the experience has been really good because I always wanted to do it and having this opportunity to experience that, is really satisfying. I have enjoyed every bits and pieces of the work I get involved with.

When I started, I was given a mini-project to work on, which is the part of the main project. Following that I get involved with the main software built for the BR700NG aircraft engine. I am really enjoying the opportunity to see how the theory knowledge learnt in University is actually been used in real world practical projects.

Additionally, I volunteered in few STEM (Science Technology Engineering Maths) events as a Rolls Royce's representative. These events are targeted to young people to encourage them towards STEM subjects. Following one such event, the head of the Control-Software engineering personally sends a thank you letter for my contributions to these events. That's been the best part so far during my placement.

I haven't found anything that I have enjoyed the least. When I started, everything was quite new so I adapted to that situation, it was more like interacting to people and finding out more about the team and the project work. It took time to get settle and adapt to everything but I gradually started picking up things. Initially it was quite challenging to understand the level of work, but I soon started enjoying the experience.

What do you consider to be the 3 most important features of a quality placement?

The first would be the opportunity to be part of such an experienced team, and to experience the real life project works. At university I do so many projects, but not anything like real life projects that actually make an impact to the business.

Another feature would be the opportunity to learn different things. I am working with different programming languages and I haven't used these languages (Ada95 or SPARK) in my university, and [Rolls Royce] they gave me the opportunity to learn different programming languages and various new things.

Finally, it's great to have the real experience of working in a company. Here they treat the interns as regular employees and they give pretty much same amount of work. I am going to meetings every week with other team members and in those meetings everyone talk about what they have done last week and what they will do in the next week. So, they ask me the same thing as an actual employee.

Has this experience benefited your professional and educational life?

"... it's really good to get these experiences while I am still a student. I am getting industrial experience in the area I am really passionate about, so when I'll graduate and will look for jobs I'll be so much better prepared."

Definitely, it helped me a lot. The knowledge and the skills I am learning is going to be so much beneficial in future. Moreover, I am developing my transferable and professional skills like adapting to a situation, interacting with new people, meeting tight deadlines etc. The company is a new world, it's not like the university, it's a work environment, a professional world. So this experience is really helpful because it's good to get these

experiences while I am still a student. I am getting industrial experience in the area I am really passionate about, so when I'll graduate and will look for jobs I'll be so much better prepared. I can explain to people that I have experience and knowledge, and it's definitely a plus to my CV.

What 3 key pieces of advice would you like to share with fellow students?

"Make sure to do something you are really passionate about then you will be able to enjoy it more." I would say definitely gain an industrial experience. It doesn't need to be for one year, you can do it for one or two months during the summer, but definitely do go for it.

Make sure to do something you are really passionate about then you will be able to enjoy it more. Companies are more likely to hire people who are passionate and knowledgeable. They want to see if the person will be willing to learn new things or not. Here in Rolls Royce, I am learning new things every single day and I am so passionate about it.

And the last but not the least do network with people. Talk to your lecturers or career advisors, mention them that you are interested and looking for placements, they might be able to point you to the right direction or they might have contacts with some companies. You never know. So the best way is to start networking with people and don't give up.

CASE STUDY 2

"I think the best part was that I was seen as a team member of the department (...) I was very welcomed there, they appreciated the work I was doing, and the feedback was very constructive all the time."

Cristian Balan is an aeronautical engineering undergraduate at University of Salford. He had an exciting one-year placement in Airbus, working both in Germany (Bremen) and France (Toulouse). In his placement Cristian felt he was part of the team and worked in fast-paced projects where he had the opportunity to work not only in research and development departments, but also in production.

Tell us about what you did during your sandwich year and how did you find it.

I have applied to several placements and had an offer from a UK placement company. But then I was referred by a lecturer to a German Airbus plant and then I had an interview in Germany. My placement comprised 6 months of work in Germany, in Bremen, and other 6 months in France, in Toulouse. This was because of the work itself. I started in a pure engineering department, where I worked in research and development. And then I got transferred in to production to apply what they were developing in the department.

What did you enjoy the most and the least in your placement?

I think the best part was that I was seen as a team member of the department, so I wasn't seen as an intern, because the workload was so high all the time. When I started there was a head reduction and various people weren't in the department anymore, so they needed people to do the work. And from day one I was seen as a new colleague. I enjoyed that a lot because I could develop differently. I had colleagues that were seen as interns, and they were doing excel spreadsheets all trough their placements, and that's not nice. I was very welcomed there, they appreciated the work I was doing and the feedback was very constructive all the time.

What I didn't enjoy was the fact that I had to leave! I didn't like the idea of not being able to work on the things I was working in Germany, but there was no time. That's a bit daunting because it's your work that is being taken by somebody else. And there were some projects that were not finished by the time I left because I started them some weeks before I had to leave. That's a bit sad. Even in France, I left some projects that needed to be addressed with some final points. But I think it's always the same when you have to leave from a place you like.

What do you consider to be the 3 most important features of a quality placement?

I think professionalism from the colleagues. I think they need to understand why you are there and be less selfish. There are some people who think "Ok, I am a full-time employee, and you are an intern, so I don't really care". I think it's really important to have amazing colleagues, that understand why you are there.

Secondly, the work itself. I think is very important to discuss with the manager the work you are going to carry out, because often the job descriptions are very nice and sound amazing, but behind the fancy words there are some weird tasks. So it's important to ensure the transparency of the tasks.

And thirdly, the location. At this age it's important to be in a nice city, because you need to enjoy your life as well. I had an offer where the company was literally in the middle of the forest, and that's not a nice placement location.

Has this experience benefited your professional and educational life?

"My CV is more credible now, and people call me with a different approach than before."

There are a lots of positive aspects. First of all, I think people treat me with more respect. My CV is more credible now, and people call me with a different approach than before. And secondly, I remember my interviews in the second year, and people were really like they were talking to a kid, literally, and just trying to understand why I cared about that placement, and why I liked engineering. It has been just one year and a half, but the approach from all the companies that contacted me so far is much different. I just had interviews a few weeks ago and I could see the change in their approach, a lot! And I think that's really great. And also, the offers are coming straight away, and I have been called by companies after sending my CV. From an academic point of view, I received master's offers very fast as well. I think it benefited a lot and also, personally, I became more organised in many aspects, even with my own thoughts. When I put down a piece of work, I am more technical now than before, trying to avoid just talking for the sake of talking.

What 3 key pieces of advice would you like to share with fellow students?

"If you do your work and spend some time studying you can become very good academically, but then, when it comes to work, it matters a lot what you do outside your studies. So do as much extra curricular activities you can."

I think everything starts from day one at university. So on first year you want to build confidence, build your personality and build a profile. I have seen a lot of CV's during my placement that don't tell me anything about a person. It's important to find your strengths and to build around them. Try to think outside the box and do extra things all the time. Because it's not hard to study and get great marks. If you do your work and spend some time studying, you can become very good

academically. But then, when it comes to work, it matters a lot what you do outside your studies. So do as much extra curricular activities you can.

Also, an advantage for me was languages. I think it's really important to learn at least a second language. I didn't speak German beforehand, and when I arrived there I realized that all the technicians wouldn't speak any English, so I had to boost my German in one month. Therefore, I think it's important to have language skills.

"(...) nowadays there are amazing people around Europe that speak three or four languages, and that's our competition now. Building language skills is quite important."

And nowadays there are amazing people around Europe that speak three or four languages, and that's our competition now. Building language skills is quite important.

And also try to do any sorts of online courses, developing in different areas as well, developing interests for business, economics, and maybe some international trade between countries. Because all what we are studying in engineering at university is pure science, let's say, it's just mathematics and formulas, and things like that, but it is important to know how all these things get integrated in real world. I know it's hard to think on all these aspects in second year, when you want to do a placement, but I believe if you are surrounded by the right people, you can learn a lot.

CASE STUDY 3

"I enjoyed the freedom of being able to help in any way that I could, and just being useful. I really did enjoy it, and it was a really good break from university, which was exactly what I wanted."

Tobi Danmole is a mechanical engineering undergraduate at Imperial College London. Last year he did a one-year placement, not only to gain experience and increase his chances of getting a good job, but also to have a break from university and explore the world of work. He has been offered a job in Rolls-Royce, after doing his placement in the company.

Tell us how did you find your placement

My placement wasn't compulsory for my degree but I knew it would be a really good thing to do in terms of getting a job and also it would be a really good break from university as well, and just kind of exploring the world of work.

So I searched online, went to the websites of the engineering companies I was interested, and looked at the careers section to see if there was anything available.

There was a good support from my university in terms of getting the CV ready, and they do give classes where you can learn about assessment centre techniques and all of that kind of stuff. They have careers fairs which is really good, but you have to take the initiative to look for placements and apply. In my opinion, if these placements were incorporated, somehow, into the university course, it would be really good.

Can you shortly describe you work at Rolls Royce during your placement?

During my time at Rolls-Royce, I worked as a manufacturing engineer which saw me deliver various projects. These projects involved implementing new systems, designed to help the shop floor staff. As a result they directly affected production, improving the efficiency for the shop floor staff, and gave me lots of responsibility.

Because these were new systems that my colleagues had not used before, I also had to train them, so they could use the systems effectively. In total I trained over 200 people, at different levels of the business, which was definitely not something I would have thought I could do, let alone have the opportunity and be given the responsibility to do so as well. Because of my expertise in these areas, I was able to support the business in many ways throughout my year, and my colleagues were able to support me, so that together a common goal was reached: Build aero engines!

What did you enjoy the most and the least in your placement?

"In the beginning of my placement I was given a number of tasks that weren't exactly the most interesting (...) but at the same time I almost feel like I needed that in order to actually get to know what was going on because I had no idea (...) because you are new there"

The placement experience was really good overall. I enjoyed the freedom of being able to help in any way that I could, and just being useful. I really did enjoy it, and it was a really good break from university, which was exactly what I wanted.

In the beginning of my placement I was given a number of tasks that weren't exactly the most interesting. And

so at the beginning it was quite boring, but at the same time I almost feel like I needed that in order to actually get

to know what was going on because I had no idea. It's a bit frustrating that you do have to go through that stage of being given less exciting tasks to do, but because you are new there, you have to understand and go through that period. I think it took me like 6 months to thoroughly understand what I was doing. So, I think you just need to stick with that and then you will be able to do more useful stuff, which I was able to do. But first I just needed to understand what exactly was going on.

What do you consider to be the 3 most important features of a quality placement?

"You are coming in as a newcomer, and it's great if you have people to help each other out and just create a good work environment."

I would say, number one, depends on you as a person. You need to be available. If you don't look for opportunities to do stuff and get stuff done, then they are not going to come after you. You need to be outgoing. Just make yourself available to do whatever needs to be done.

And number two would be the people around you, because obviously you are working with other people so they need to be able to support you and they need to be friendly and guide you as best as they can, because they have more experience than you. You are coming in as a newcomer, and it's great if you have people to help each other out and just create a good work environment.

And three, I would say keeping focused. Keeping focused in terms of staying on the task, staying on the goal, trying to achieve and accomplish what you have to do.

To what extent has this experience benefited your professional and educational life?

"(...) they offered me a job, which is really good! So this year all of my friends in university have been looking around for jobs and I don't have to worry about that. It has taken a huge weight from my shoulders this year."

I am not sure just yet... But the good news is that they offered me a job, which is really good! So this year all of my friends in university have been looking around for jobs and I don't have to worry about that. It has taken a huge weight from my shoulders this year. But at the same time it hasn't really helped that much in terms of what I am

learning right now. With my year out, I forgot a whole bunch of stuff. So when I came back I had to remember it all and pick it up all over again. Which mean that it was harder to readjust to university, but I wouldn't take it back. It definitely helped in terms of the softer skills, like communication, being organised and making sure that I was getting my tasks done on time.

What 3 key pieces of advice would you like to share with fellow students?

"Make yourself known and get familiar with the place you are in."

Number one, I would say get stuck in. Make yourself known and get familiar with the place you are in.

Number two, I would say do fun stuff with everyone else and go out and just enjoy other peoples' company at work. See how you can build relationships and friendships that way, and just network, basically.

And number three, I would say, just a bigger number one! I think getting stuck in is really important. If you don't stuck in, then nothing will happen for you. If you don't get stuck in, employers won't see your desire to actually want to be there, and so nothing happens. If that's where you would like to work, you have to give the right impressions so that they will hopefully offer you a job afterwards.

CASE STUDY 4

"I couldn't recommend doing a placement enough to anyone. I think this was one of he best decisions I have made. I wasn't originally signed up to do it but I changed my mind and I am so delighted, because I think it's really invaluable to have real world experience throughout a year. It puts what you learned in university in such a good perspective, and I found that really helpful."

Emily Jones is a civil engineering undergraduate at University of Bath. She did a one-year placement in industry where she had the opportunity to work in different projects and have a real world experience of what a civil engineer does. Emily describes her placement as being an invaluable experience, and recommends every student to be proactive and embrace all the opportunities been offered during their placement.

Tell us about your year in industry and how did you find it.

At my university we have a page where they share a list of available jobs, places where people have been before, and we pick the ones we want to apply to. Then we apply to the companies directly. Our Placement Team is really good, and they check our CV for us, and give lots of workshops on how to get through assessment centres, interviews, etc., which is very useful.

My company has a well developed graduate and placement scheme, so they already had a lot of things in place to make sure I was getting what I needed out of the placement. In my year there were around forty people doing the placement and we met once a month where one of us presented our placement to the other students.

What did you enjoy the most and the least in your placement?

"My company was really good because they were rotating me around, making sure I got a view of so many different aspects of the project I was working on, and trying to get me involved in other projects as well." I couldn't recommend doing a placement enough to anyone. I think this was one of he best decisions I have made. I wasn't originally signed up to do it but I changed my mind and I am so delighted, because I think it's really invaluable to have real world experience throughout a year. It puts what you learned in university in such a good perspective, and I found that really helpful. My company was really good because they were rotating me around, making sure I got a view of so many

different aspects of the project I was working on, and trying to get me involved in other projects as well. I think I was quite lucky in my company. They were very responsive to anything I wanted to do.

What did I enjoy the least... At the beginning it was difficult. I was on a site where there was a lot of men, and being a woman, and quite young, having to tell them what to do that was quite difficult to start with. But by the end I didn't really think about it.

What do you consider to be the 3 most important features of a quality placement?

It is meant to be a learning experience year, so you should be able to get a broad range of experience. I worked in lots of different teams, did so many different things, and that was absolutely fantastic.

You also have to have a good relationship with your supervisor, line manager and colleagues. I went to them whenever I wanted to change anything and they were able to get it sorted for me, because obviously I wasn't in a position of power to do that. Having a good relationship with my supervisor and my team was really important.

And finally making sure you pick something that you think you will enjoy as well, and if you don't enjoy it, try to make sure you get as much out of it as you can. I do particularly think that I want to do my placement again, afterwards. I am going back to them in the summer because I enjoyed it so much! And the reason was, I think, because I tried to make the most of the year. So try to take whatever opportunities you have and don't really say 'no' to anything they ask you to do.

To what extent did this experience benefit your professional and educational life?

"Now that I am back to university it has been so much better. This year I'm a lot more focused in university, I can get things done a lot easier, and I think we have to be that focused during the day at work."

Educationally, my time management skills, definitely. Now that I am back to university it has been so much better. This year I'm a lot more focused in university, I can get things done a lot easier, and I think we have to be that focused during the day at work. And professionally, the company I worked for was quite a large company, and I think it will look very good on my

CV to have that there. Also, I just think that any experience that you have that came out positively – and I did a very good job for the year – it's a really good thing to back you up. In addition, it's a year towards my chartership as well, which is nice.

What 3 key pieces of advice would you like to share with fellow students?

"Do choose things that you think you would enjoy because you'll have to do it for a whole year." Pick a placement that you think you will enjoy and definitely don't just apply and apply and apply. Do choose things that you think you would enjoy because you'll have to do it for a whole year.

Try and make the most of the placement that you do get. If you are not enjoying it, tell your supervisor to get you moved around and try to do different things. It's basically making the most of it, because you are there for the year.

And definitely just don't say 'no' to any opportunities that were there for you, because you won't get those opportunities again. I worked in some huge projects last year that I probably wouldn't get the opportunity to work on if I was a graduate; it was just because I was there for a year. If you can do it just for a month it would be a really good learning experience for you, so take on whatever you can, I would say, to try and gain as much as you can from your placement.

Case Study 5

"I think it's really important if you are given the opportunity to enter a company for a short period of time to see as much as the company as possible, and not just the little sector where you are working, so that you can have a better feel of how companies, in general, work."

Madeleine Steer is an engineering undergraduate at University of Cambridge. In Cambridge, all engineering undergraduate students are required to complete a total of 8 weeks of internship experience during summer. However, although being compulsory for her degree, Madeleine also wanted to do internships in order to explore which field of engineering she wanted to specialize in the future. These internships allowed Madeleine to actually experience the work of different companies, and gain a wider perspective of what to expect in different engineering sectors.

Tell us how did you find your placement

I needed two more weeks as part of the requirement of my degree, as I have done six weeks in the year before. I then decided to go on a five weeks' placement, during summer, at the company. There is a database in Cambridge, from the university's Engineering Department, which you can search through and specify where in the UK, what kind of sector, etc., all different parameters. I was looking for Structures companies near where I lived, and decided to do a placement in a big company that had a site relatively close to my home.

I already went through this process in the year before, so I knew how to go about applying to different companies. I did use a book called "CV's and cover letters" which was provided by the Careers Services at the university, to help formulate my letters. The Engineering Careers section is really good in Cambridge and they were always very helpful.

What did you enjoy the most and the least in your placement?

"(...) for me it was kind of a learning experience, trying to get to know the sector, knowing what the work was like, and experiencing the day to day business of working in a Structures company. It was really valuable for me to actually be able to experience it."

I went to the placement wanting to know whether I wanted to work in Structures once I graduated. So for me it was kind of a learning experience, trying to get to know the sector, knowing what the work was like, and experiencing the day to day business of working in a Structures company. It was really valuable for me to actually be able to experience it. However, besides this very interesting experience, I reckon that I would probably prefer to be in something else once I graduated.

I think the things I enjoyed the most were the creative side of things. There was one thing where we had to design a particular cover to a building, which was kind of a more creative activity. In contrast, the rest of the stuff that I did was more analytical and calculatory, involving regulations, which was more repetitive and regimented than I expected. This was, probably, the stuff that I enjoyed the least. But overall, this experience definitely did teach me a lot about how the sector works, what people do day to day when you actually work in a Structures company, and what kind of work you can be expected to have. It [the internship] also allowed me to work with a supportive and friendly group of people, and let me feel what it was like to work within a larger team.

What do you consider to be the 3 most important features of a quality placement?

First of all, being able to experience any part of the company which you are curious about. I think it's really important if you are given the opportunity to enter a company for a short period of time to see as much as the

company as possible, and not just the little sector where you are working, so that you can have a better feel of how companies in general work. You can't experience that without actually being in a job.

And then, a part from that, I think being given some autonomy as an internship student is extremely valuable. Being given a project which you can complete, or some kind of task which you are then given a bit of freedom as to how you complete it, because it gives you a chance to experiment and then also be guided by your supervisor.

And number three would be having really involved and enthusiastic supervisors. My supervisor for this internship was really friendly and lovely, and I felt like I could go and ask him anything without feeling stupid, which was great because it meant I could learn as much as possible from the internship.

To what extent has this experience benefited your professional and educational life?

"For me it was unbelievably valuable to experience it for a short period of time before actually deciding whether I wanted to do this later on."

A lot! Specially because I thought this might be something I would be really interested once I graduated, and I think that doing it made me realise that maybe this wasn't quite what I was expecting. So, without doing it, perhaps I would have graduated and gone in to a Structures job and disliked it in

comparison to something else. For me it was unbelievably valuable to experience it for a short period of time before actually deciding whether I wanted to do this later on.

What 3 key pieces of advice would you like to share with fellow students?

"I would advise to do one every summer, even if just for a few weeks, because having a lot of different internships in your CV is really beneficial when looking for a job once you graduated. You will have so much more experience of different jobs and different sectors, and a more balanced view about what you might want to do in the future. And it is also a good way to earn money throughout the summer as well!"

Definitely have this experience, if you can. I would advise to do one every summer, even if just for a few weeks, because having a lot of different internships in your CV is really beneficial when looking for a job once you graduated. You will have so much more experience of different jobs and different sectors, and a more balanced view about what you might want to do in the future.

And it is also a good way to earn money throughout the summer as well!

And do send lots and lots of applications. Don't give up if you don't get any replies. Just send out as many as possible to the companies that you think you might be interested in and then, hopefully, you will get some back.

Also, if you are worried about travel expenses to get to interviews for internships, make sure that you enquire about travel expenses before going to the interview. In many cases the companies reimburse your travel expenses. So, be sure that travel costs are not an obstacle to go to the interview for the internship you really want to get.

CASE STUDY 6

"I think I've become more interested in my own course. And then, as a person, it has made me more mature and given me a better idea of what I want to do next. I still have some doubts from time to time, but now, at least, I know what I enjoy doing, and what I am looking for in a job."

Ana Miarnau is a mechanical engineering undergraduate at University of Bath. She had an international one-year placement at a research organisation in Switzerland. Initially, she was not meant to do a placement, but after speaking to students at the university who had been on a placement before, Ana thought it was a good idea to get work experience before graduating and increase their chances of finding a good job once graduated.

What did you enjoy the most and the least in your placement?

"I was really lucky because I had a really good line manager that pushed me in different directions and gave me different projects on a range of topics."

"(...) it's given me definitely really good time management skills and it also helped me to take my course a bit more seriously and appreciate it more."

Overall I think it was absolutely fantastic. I was really lucky because I had a really good line manager that pushed me in different directions and gave me different projects on a range of topics. And I worked in a very international environment, which I really like, and interdisciplinary, which meant one day I was working with a physicist, the next day with

software engineers. Also, what I really liked was that in general, sort of with respect to the university, it's given me definitely really good time management skills and it also helped me to take my course a bit more seriously and appreciate it more. Whereas in the first and second years you just go along with whatever is given to you, I think this year back to university has definitely been different. My time management is better and I am enjoying it more, too.

The worst parts... I can't really think of any. Maybe in the beginning, when I was given a project that was quite outside the scope of my studies because it was more electrical engineering based, and it was a little bit frustrating. But I soon talked to my supervisor and got moved to another project, and from then onwards I really enjoyed it.

What do you consider to be the 3 most important features of a quality placement?

I would say having enough work to do, because I did have maybe one week where I had almost no work to do and it can be really frustrating. So, having good quality and good quantity of work to do.

Secondly, having a good team or a good line manager is very important. I know other students who went to other placements and I think they didn't enjoy it as much as I did.

And then the last one, maybe having good work-life balance. Being in Switzerland, I definitely had a really good work-life balance, and I think you really appreciate that while doing a placement.

Has this experience benefited your professional and educational life?

Definitively yes, to a very very large extent, I would say. As I said before, I think I've become more interested in my own course. And then, as a person, it has made me more mature and given me a better idea of what I want to do next. I still have some doubts from time to time, but now, at least, I know what I enjoy doing, and what I am looking for in a job. So it really has benefited me.

What 3 key pieces of advice would you like to share with fellow students?

"(...) don't be afraid to ask questions. In fact, ask as many question you can (...) have the initiative and look for opportunities for yourself"

I would say don't be afraid to ask questions. In fact, ask as many questions as you can, even if they're completely off topic.

Also, I would say, try and find opportunities for yourself. When I had that week where I didn't have too much work to do, I didn't sit and wait until work was coming to me. I went around to my

other colleagues, who I wasn't working with, but I just went around and asked them if there was anything that I could help them with. So, have the initiative and look for opportunities for yourself.

And then, the last one, would probably be to ask for lot of feedback and have a good communication with your line manager, because if something is not working, then that can help a lot. And if everything does seem to be working fine, then at least you can get tips on what to improve or what you can do better in the future.

CASE STUDY 7 (to be checked)

"You got to learn the lesson to rely on other people and look for help when you need it. I think it helped me to come to university because if I hadn't done it, I would be struggling with problems and trying to solve things on my own, when there are better options out there, such as going to look for help and working together in group. I think that is, at the moment, perhaps the best thing I have learnt."

Charlie Constable is a first year engineering undergraduate student at University of Cambridge. He took a gap year before coming to university, through the Engineering Development Trust 'Year in Industry Scheme', in order to try and feel how actually engineering works.

Tell us about why did you decide to take a gap year and how did you find it

I did it through the Engineering Development Trust 'Year in Industry Scheme'. I was intending to take a year, anyway, after the university, so why not just take it before? So I took my year and went to find a job on something which I found really interesting and very helpful. And I thought it would help me getting in to the university, and being more engaged in engineering that way. I thought it would be useful to try and feel how actually engineering works, and if it was the thing I wanted to get in to. And I think it's important to get some stuff in and not just do academics forever. In the future, when applying for jobs, I do have my feet grounded in the world of industry.

But it was quite difficult, to be honest, because it was the first time I had to live away from home. It was difficult sort of readjusting to work environment as opposed to school and university. These things are quite different. At the time I really felt it was really worth doing it, especially in that project, because things were not going brilliantly at that time for the company. It was kind of all hands on deck and they gave me a huge amount of responsibility. It gave me the chance to do a lot of things that otherwise I wouldn't have been able to do if I were in a big company.

I worked for a year for a company called "Turner & Townsend" in Birmingham, and I was working through them for a company which is a conglomerate sort of company between Three mobile and EE. I was building health and safety software for them. It was a general engineering job, so I wasn't doing anything specifically in the field.

What did you enjoy the most and the least in your gap year?

"The work environment is much more integrated, a lot more like you are a team all together, and it was a really valuable experience to gain before going for a proper career or a job, because you know that beforehand." What I enjoyed the least was... because it was a year and I suddenly gone there from being in school where you have a break every 6 or 8 weeks and have the chance to recharge your batteries. It was really difficult not having that time-off, and being away from home. That was

the worst thing. And also, because I was working in consultancy, I had much more mature fellow workers, and it made quite difficult for me to feel that I had other stuff to do there other than work. So that was tough!

However, I think it was definitely well worth doing it. I really enjoyed the people in a lot of ways. I really enjoyed just going to an office, and everyone has a lot of things to do, but there is a chance to talk about things, discuss about our ideas in a way that is a lot less competitive than at school or university. The work environment is much more integrated, a lot more like you are a team all together, and it was a really valuable experience to gain before going for a proper career or a job, because you know that beforehand.

What do you consider to be the 3 most important features of a quality placement?

I think it has to be some kind of mix in the work you are actually doing. I was very lucky because I was given a great long-term project to develop software, which meant I had a lot to do.

I think it's important to get on with your team as well. I think it would have been very difficult doing that sort of thing if I hadn't really been friendly with all the people I was working with and with my boss. It would have been a lot harder. If you don't go along with your boss you start to struggle, you don't work efficiently, you struggle to get good chances to work because you feel they don't trust you that much.

And I think it's important to be interested in the field of what you are doing. Because you start to feel it as more important to yourself, and more interested in the work you are doing.

"I think it's useful, specially before university, trying things that you know you are going to come against, but that aren't quite on your comfort zone."

Has this experience benefited your professional and educational life?

Yes, definitely. The team work aspect was great. When I went to work I was very much a lone wolf sort of thing. At school I always worked for myself, done everything myself, relied

upon myself. And I think the biggest lesson I learnt is that you can't do that, specially somewhere like a place of work, or when you are in your internship, because you are surrounded by people who are experts in their field. You got to learn the lesson to rely on other people and look for help when you need it. I think it helped me to come to university because if I hadn't done it, I would be struggling with problems and trying to solve things on my own, when there are better options out there, such as going to look for help and working together in group. I think that is, at the moment, perhaps the best thing I have learnt.

Personally there are a lot of other benefits, because I worked in software and I have never really done anything else that was software orientated so... I think it's useful, specially before university, trying things that you know you are going to come against, but that aren't quite on your comfort zone. And so software has completely new to me, I went there completely blind. But actually now, having done that and coming to university, and having to code every week, etc., etc., is a lot simpler and a lot less daunting than it would be if I just came here directly without this experience.

What 3 key pieces of advice would you like to share with fellow students?

"Apply early. I think it's probably one of the most obvious. That makes life a lot easier, because a lot of things are offered earlier in the year. So the early you apply, the better your chances are and better options are available."

Apply early. I think it's probably one of the most obvious. That makes life a lot easier, because a lot of things are offered earlier in the year. So the early you apply, the better your chances are and better options are available.

I think it's also important to know where you are living. I've applied for jobs in Aberdeen, and I am from London. So... I think if I had gone to some of those it would have been a real struggle, because it would have been much a more cut-off and much more difficult. Location is definitely an important thing to take into account.

And finally, it's important not to be disheartened by failure. Lots of people who come through schools, through university, think that they can succeed in everything, 'everything you put in your mind you can do'. And once you get into the world of work that's not quite so true, and there aren't so many jobs available. And if five people apply

to the same job as you, and who are better than you are, well... that chance is gone. It doesn't means you are not good; it just means that someone is better. I think it's important to be told that everyone has this. So, just keep going and stuff will come.

CONTEXTUAL LEARNING IN UK HE ENGINEERING:

HEADLINE RESULTS OF A SURVEY CONDUCTED DURING SEPTEMBER/OCTOBER 2015

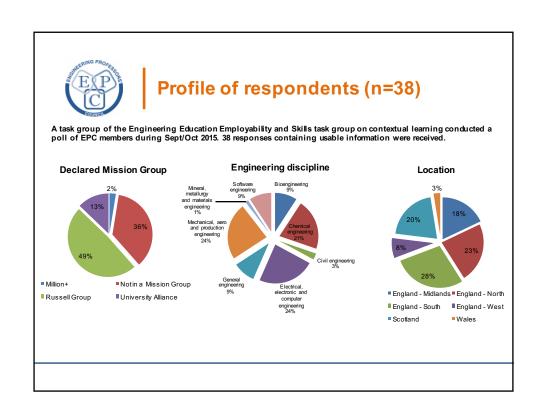


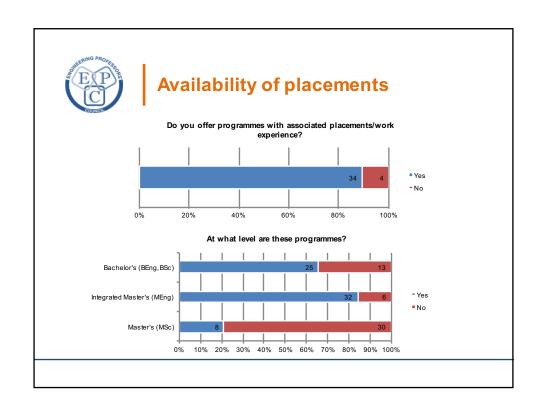
Contextual learning in UK HE engineering: headline results of a survey conducted during September/October 2015

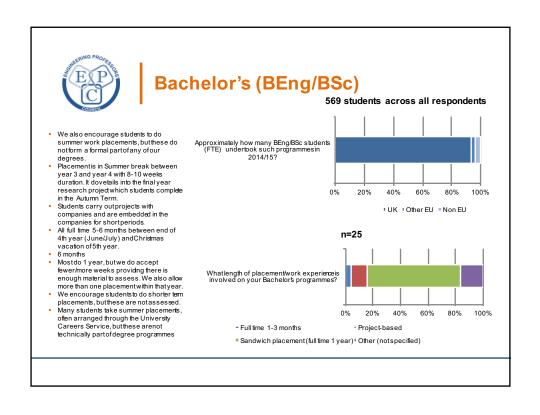


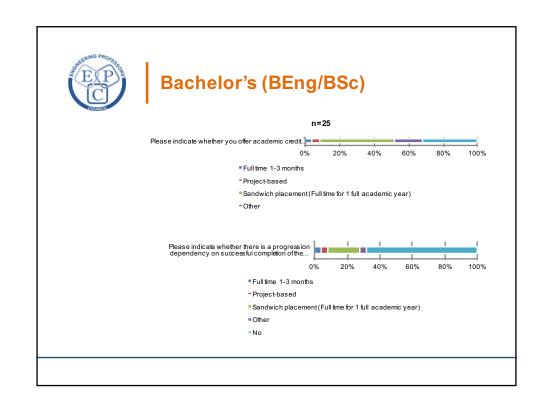


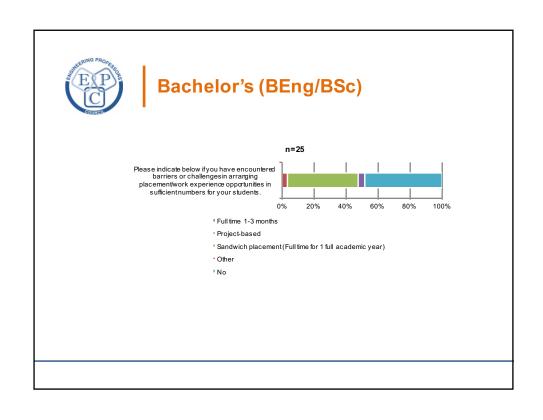


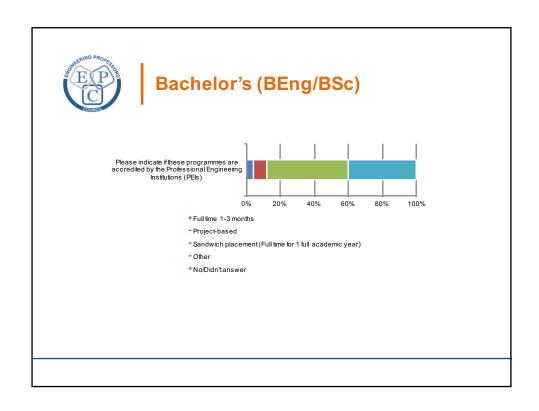


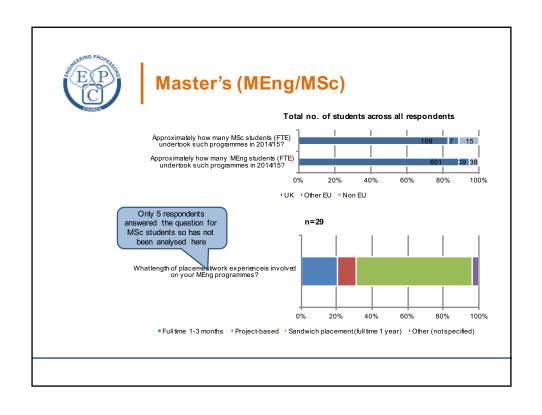


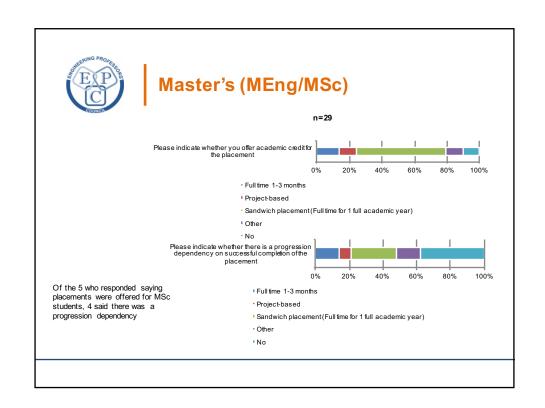


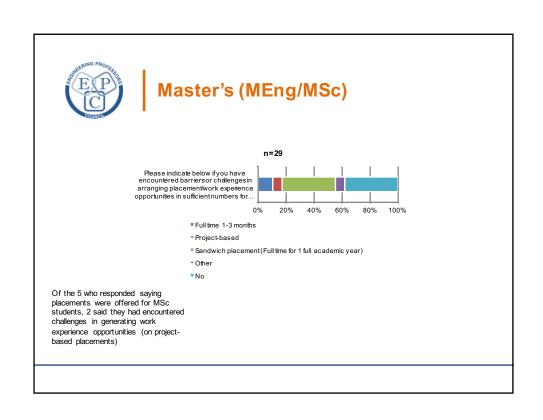


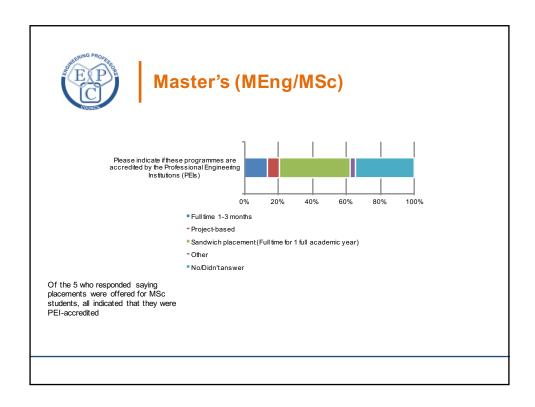


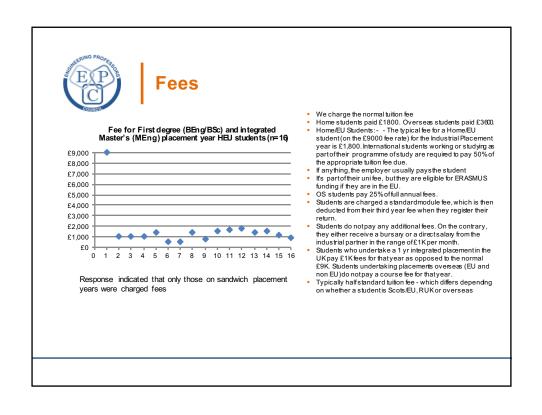














Supervision: average no. of students per member of staff

Few respondents answered the question specifically. Those who did responded typically with 2 or 3 (although there was one poor blighter with 55...). The verbatims provided an indication of the practice - which is variable across institutions...

- Academic tutors tend to have between 1 and 3 placement students. The module leader is available for general support as well.
- A dedicated administrator supervises the whole IE cohort while they are out on their placement year.
- All placement students are supervised by an individual member of staff as the
- Diacements are project based.

 One person has oversight of all of all students, but they may be visited by other staff. Many staff don't get involved at all.
- There is only one academic (placement tutor) looking after all placement students at the
- This is highly variable and will depend on the nature of the relationship between the company and the university
- This varies across the programmes. All students going on placement will be allocated a Placement Tutor who will visit them at least once. Some Placement Tutors only supervise 1 or 2 students, others may have up to 20 depending on the programme.
- Typically 2 students per academic
- We have one designated Extra Mural Year (EMY) tutor



Comments on academic credit and progression dependency

- Failure in the placement results in students being moved to the equivalent programme without placement.
- William placement. If the placement year is not successfully completed, then the student would have to transfer back to the native programme.
- If they cannot find placement, or complete it, then they will transfer to the non-placement
- degree programme.

 If they fail the Work Based Learning module they have to resit.
- The placement year is not a pass for progression year
 No but so far we have not had any unsuccessful placements.
- There is no progression dependency. If a student does not fulful the placement requirements to pass, they are considered to have intermitted the year and are rolled on to a normal 3 year degree
- There's a minimum academic performance requirement to take such placements, but if a student fails it (extremely rare) they just don't get the placement recognised on their degree
- · We have no academic progression point dependant on the completion of the placement
- year.
 Yes if they fail completely, they would have to take an alternative module in their final year to achieve the required credits
- The placement year is worth 10% of the overall degree $\,$ mark. They are assessed at 7% for their final report and 3% for moderated employer feedback



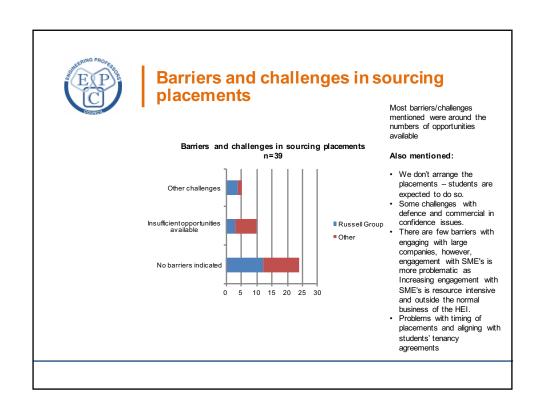
Methods of assessment

A range of practice including

- Placement journal/log booksFormal written report by student
- Oral presentation/poster
- Report from the company line manager and academic visitor Regular formal report

- Logbook; industry supervisor's report. Project dissertation.

 Portfolio of work meeting learning outcomes and a presentation
- Project plans and reports. Also, when appropriate, prototype devices Project report submission and work report
- Combination of report written by student, employer report, oral presentation





What safeguards are in place to ensure the student is working at an appropriate level?

Range of practice including:

- Industrial Placements provide a project outline and they are required to address the way in which the project will meet the requirements of a MEng degree programme. To assist a copy of the Industrial Experience Supervisor Handbook is provided which gives details on course requirements.

- Use of academic (visiting) tutors through the year to check progress
 Rolling submission through the year to ensure students are picking up the right information and level of learning.
- · All companies are pre-screened and contacted to discuss requirements needed for the placement to be suitable and agreed with the academic links in the department prior to
- contracts of employment being signed
 Apart from bimonthly reports from students, I expect employers who were really unhappy would contact us. Doesn't tend to happen.
 Each placement provider has to register with the department through a letter of agreement
- Learning contract with company



How do you support students who are out on placement?

- A diverse range of approaches including:
- Regular emails and phone calls Regular visits
- Occasional visits
- There is a student handbook with advice. Academic supervisors are available via e-mail and if
- needed Skype. The academic supervisor provides feedback to the reports.

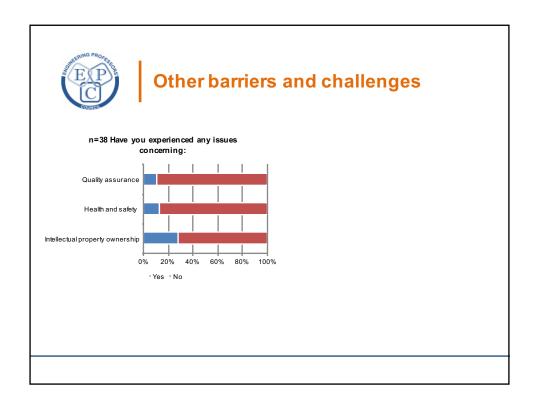
 Team of staff dedicated to supporting the industrial placement year, who are available business hours. In addition each Engineering School allocates a lead Placement Tutor.



How do you support industrial cosupervisors in understanding what is required of them and the student?

A diverse range of approaches including:

- · Written guide to placements given to employer
- "Not really a relevant question; as long as the student carries out meaningful work then that's up to the employer. We would be concerned if students were only given menial tasks that didn't develop them as engineers."
- Regular meetings and contact of Placements Team with work-based supervisors.
- · They sign up to learning outcomes developed by the student.





What advice, if any, do you give to students about how to present their learning outcomes in ways that are meaningful to employers?

A diverse range of approaches including:

- · We use the UK SPEC table
- We give a talk
- Our careers service provides advice/employability workshops
- We encourage students and co-ordinators to work together to develop meaningful learning objectives and then support them upon their return to university in summarising their learnings while out on their placement.
- · Completion of reflective journals

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