Understanding how students manage their employability

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Abstract

In this study we explored the process by which students manage their employability, the skills and attributes gained by students as a consequence of undertaking a particular activity and how their experiences influence how they subsequently manage their employability.

Quantitative and qualitative data were collated from five separate groups of students. Each student cohort had completed one of the following activities: a credit-weighted optional professional development module (PDM), an industrial placement year (IPY) or a study year abroad (SYA). The fourth student cohort was in the final stages of completing an integrated Master's degree (MBiol). The final student group was the control group who had undertaken none of these four activities and were in the final stages of their three-year undergraduate degree.

On the whole, students who have undertaken an activity were very positive about their experience. We found that students had very clear reasons for engaging in a particular activity and, in many cases, related to enhancing their employment prospects. Those engaged in any activity report more focused career plans (in the case of the MBiol, IPY and SYA groups) and, in the case of the PDM group, high levels of self-awareness and understanding of employer requirements. We found students in the control group to be the most uncertain of their future career plans. The reasons for not engaging in the employability initiatives described here and lack of career planning amongst the control group require further investigation.

Introduction

Graduate employability is a key strategic issue for the Higher Education (HE) sector internationally, driven by government initiatives and labour market demands.

Many different definitions of graduate employability exist (Williams et al., 2015). One commonly used is that that put forward by Yorke (2006): "*a set of achievements – skills, understandings and personal attributes – that makes graduates more likely to gain employment and be successful in their chosen* occupations". An alternative conceptualization of employability is put forward by Holmes (2011, 2013). He argues that graduates must not only possess a set of skills but also '*act in ways that lead others to ascribe to them the identity of a person worthy of being employed'*. Holmes emphasises the *process* by which the graduate identity emerges and views this as developing over time through engagement with opportunities and interactions with employers and work that affect students' sense of self and their ability to position themselves in the job market. This is supported by Tomlinson (2007, 2012), who reports that the way individuals engage with the world of work is dependent largely on their self-perception as a future

worker and the types of work-related dispositions they are developing.

In the UK, the proportion of students graduating with a first degree (undergraduate) has increased by 27% in the last 10 years (Universities UK, 2013). This increase, combined with a downturn in the economy, has contributed to enhanced competition for graduate-level employment. A first degree (undergraduate) once considered an important differentiator in the employment market, is now considered a 'basic minimum' for many jobs. Consequently, graduates are engaging in strategies to enhance their employability outcomes through undertaking work placements, participating in extra-curricular activities and pursuing a postgraduate qualification (Morgan, 2012; Brooks & Everett, 2009).

At the same time, there continues to be concerns voiced by employers around the mismatch between the skills and competencies graduates leave university with and those required to be successful in a work environment. Disparity between industry expectations and HE provision typically focuses on generic skills – also termed transferable or employability skills. Documented gaps include deficiencies in communication skills, teamwork, leadership skills, critical thinking, decision-making, enterprise and commercial awareness (BIHECC, 2007; CIHE, 2010; CBI, 2011; ABPI, 2015). To address these gaps, HEIs have largely responded by introducing learning and teaching initiatives into the curriculum designed to promote the development of such skills. Common are provision of work placements, introduction of professional-development type modules (or units) as either credit-bearing or non-credit-bearing modules or leading to some type of employability or skills award (Walton, 2011).

Data relating to the effectiveness of these initiatives on student employability are rather limited. The most common are statistics which measures labour market outcomes six months after students graduate. Examples include the DHLE (Destination of Higher Education Leavers) statistics in the UK and the Graduate Destination Survey data in Australia. Whilst these provide useful information on employment outcomes, they do not provide evidence of the impact that individual interventions make on student learning of employability attributes and how these translate into the workplace. Nor do they provide information on how graduates present or articulate their experience to employers. To gain insight into these more complex areas, the views of students are normally gathered through surveys or other self-reporting methods (Harvey, 2001; Wilton, 2012; Watson, 2011; Divan & McBurney, in preparation).

In our study we were interested in understanding the process by which students manage their employability. Career management is an important dimension stressed by Bridgstock (2009). She argues that in a rapidly changing and competitive economy, graduates must not only have the appropriate skills and dispositions to be successful but should also be able to proactively navigate the world of work and self-manage the career building process. We were interested in capturing the student experiences in relation to four activities offered by a Biological Sciences Faculty in a Russell Group University: an industrial (work) placement year (IPY), a study year abroad (SYA), a professional development module (PDM) or an integrated Masters programme (MBiol). We also included a control group, that is, a group of students that had not undertaken any of these activities to evaluate their experiences and career management approaches.

There is some information in the literature relating to the impact that undertaking a work placement has on student employability. Mason et al., (2006) found using the DHLE as a measure of employment outcome, that structured work experience has a clear positive effect on the ability of graduates to secure graduate-level employment within 6 months of graduation. Work placements can also contribute to the development of general employability skills and build students' confidence in their workplace capabilities (Wilton, 2012; Billet, 2011; Clinton & Thomas, 2011). It can also boost students' self-perception of future employability prospects, for example, Qenani et al., (2014) report that students are almost 2.5 times more likely to feel highly confident about their employability if

they have gained work experience through an internship during their programme of studies. There is also some evidence that indicates that students holding a Masters qualification benefit from better employment prospects than those whose highest level of qualification is an undergraduate degree (Artess et al., 2014; CIHE, 2010). However, there is very little information on how study abroad programmes impacts employability. Similarly the impact on employability of professional development type modules embedded into degree programmes is also under-studied.

In this study we sought to understand the process by which students manage their employability. Specifically, we considered the following:

- What motivates students to undertake a defined activity (MBiol, SYA, IPY, or PDM) or not (control)?
- What were the experiences (skills and confidence) gained through undertaking a particular activity?
- How do their experiences influence how they subsequently understand and manage their employability?

Methods

Questionnaire design and administration
This study consisted of a mixed method design in which quantitative (Likert scale of 1-5) and qualitative (open-ended) questions were combined into a series of questionnaires. The questionnaires were administered to five separate groups of students, studying one of seventeen biological science undergraduate degree programs at a single Russell Group University. Each student cohort had completed one of the following activities offered by the University as part of their degree: a credit-weighted optional professional development module (PDM), an industrial placement year (IPY) or a study year abroad (SYA). The fourth student cohort was in the final stages of completing an integrated Master's degree (MBiol) which combines three-years of an undergraduate degree with a fourth-year of postgraduate study. The final student group was the control group who had undertaken none of these four activities and were in the final stages of their three-year undergraduate degree.

The survey was constructed on the Bristol Online Survey (BOS) platform and the link to the appropriate survey was sent to the relevant student group via email. The surveys remained live for approximately 8 weeks with one reminder e-mail being administered within this time frame.

Separate questionnaires were constructed for each of the five groups. The survey comprised 26 questions categorized thematically into four sections:

- general information about the respondents (programme of study, year of study and employability activity engaged in (i.e. PDM, IPY, SYA, MBiol or none of these);
- motivation for undertaking a particular activity (PDM, IPY, SYA or MBiol) or for not undertaking any of these activities (control);
- the skills and attributes gained by students as a consequence of undertaking a particular activity as well as self-perceptions of how well they understood employer expectations and their level of confidence in presenting themselves to prospective employers in a way that would convince employers they are 'worthy' of being employed;
- future career plans including their awareness of the diversity of careers open to them.

The questions were underpinned by the work of Bridgstock (2009) on the strategies deployed by students to manage and build their career and informed by conceptualisations of employability described in the introduction above in particular those of Yorke (2006), Holmes (2011, 2013) and (Tomlinson 2007; 2012).

Data analysis
Both the qualitative and quantitative responses were used to build up a detailed understanding of the students' experiences. For questions where qualitative responses were provided, these have been categorized thematically and expressed as a percentage. Where binary (yes or no) questions have been used, again these have been expressed as a percentage of those

providing a particular response. Where Likert scales have been used (1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree or 5 = strongly disagree) the "strongly agree" and "agree" responses are combined and presented as a percentage.

Results

Respondent characteristics
The survey was administered to 493 students across all undergraduate programmes in the Faculty of Biological Sciences. The response rates from students who had undertaken one of the activities and the control group (students who had undertaken none of the activities) ranged from 7.1 to 36.8% as shown in Table 1.

Activity	Number in group	Number responded	Response rate (%)
PDM	99	8	8.1
SYA	35	7	20.0
IPY	97	10	10.3
MBIOL	38	14	36.8
Control	224	16	7.1

Table 1 The number of respondents for each activity and the control group and the percentage response rate.

What motivates students to undertake a particular activity?
Students were asked to explain the reasons they had chosen to undertake an activity and their responses were categorised thematically. As anticipated the main reason given by respondents who had taken the Professional Development module was to help them prepare to apply for jobs (58.3%), for example developing employability skills, including creating a professional CV and interview preparation. A third of responses cited professional skills development (33.3%) as the reason for taking the module, including communication and presentation skills development. The third reason was to help them manage their career (8.3%).

Two respondents specifically stated they thought a PDM would help them to successfully apply for an industrial placement year. An indicative comment was "*I believed that it would be helpful in applying for work*

placements and would give me a broader range of skills outside of science. I also expected to gain some skills in business and communication from it."

Unsurprisingly, the vast majority (67%) of respondents who had taken a study year abroad cited a culturally-related reason for doing so. The range of responses included having an interest in living abroad, seeing how research is conducted abroad and having a broadening life experience with the support of the University. Other minor reasons (11%) included potential enhancement of their employability and their degree, whilst another considered the SYA to be a unique opportunity.

The two overarching drivers for students to undertake an IPY centred on employability and career development (65%), for example, to support practical research skills development, making contacts and helping to choose a particular career path. The second was gaining work (specifically laboratory) experience in an area of interest (35%). A representative comment was "*In order to boost my employability and as a taste of what life in the scientific laboratory environment was like. I knew that it was an invaluable experience and wanted to improve my practical skills as well as working in a business environment.*"

Respondents who are taking an MBiol indicated the guaranteed funding (16%) for a higher level qualification was attractive, but the opportunity an MBiol provided to determine if a research career was desirable was the most popular reason given (32%). A total of 24% of responses indicated the MBiol would provide a competitive edge in the employment market compared to a standard BSc. Of the responses, 28% also indicated the reason for taking an MBiol was the research experience they gained from an extensive laboratory project.

The main reason (30%) given by students (control group) who did not to take one of the employability activities was they did not appeal. This was stated in different ways but a representative comment was "*The Industry or study abroad year – I didn't want to move abroad or away as I would have to leave my pet rats behind. The MBiol – I don't like practical work and all the projects were lab*

based. The Professional development module - I wanted to use my credits for science." A quarter (25%) cited personal reasons for not undertaking one of the activities, these included ill health, having taken previous degrees and not being able to extend the length of their studies, not feeling able to leave and financial reasons. The remaining reasons (15%) were timing, they wanted to go straight through and secure a job or postgraduate position; the fact they intended to leave science and interestingly they now had some regrets about not taking one of these employability initiatives. For example, an "*Industrial year didn't appeal to me, although I do really regret not applying for a year abroad. I did consider the MBiol but wasn't entirely sure it was for me, again now I've spoken to people on it I regret not doing so.*"

What were the experiences (skills and confidence) gained through undertaking a particular activity?

Students were asked to identify the most valuable skills they had gained through the employability activity they had undertaken. Their qualitative comments, categorised thematically are presented in Figure 1. Three areas were identified: transferable skills,

research/practical skills and industry-knowledge. All student groups highlighted transferable skills (e.g. confidence, independence, communication) as the most valuable skills gained (with the SYA and PDM groups scoring 100%). The MBiol group scored almost equally between research/practical skills and transferable skills (50%: 50%). Surprisingly, industry-knowledge was lower than anticipated with the IPY group scoring only 8%.

We explored the extent to which engagement with a particular activity had increased respondent awareness and/or confidence of employer requirements, their own personal strengths and weaknesses and how they presented these characteristics to others in particular employers. These data are presented in Figure 2. The SYA students were the least aware of employer requirements (scoring lowest at 42.9%) and the least confident in presenting their skills to others (57.1%). The highest scoring in both these areas was the PDM group at 100% and 87.5% respectively. However, the SYA group was the most confident in their personal strengths and areas for development, whilst the control group were the least confident in this area.
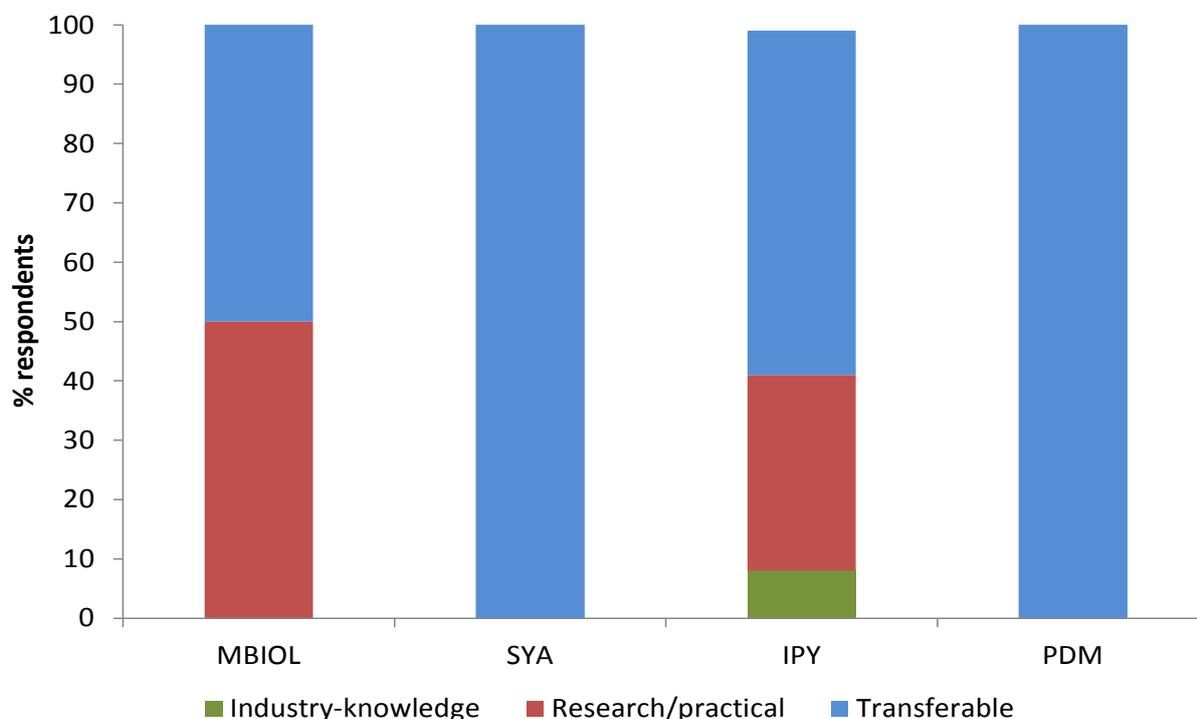
Figure 1 Most valuable skills gained as a consequence of undertaking the activity

## Confident in the following:
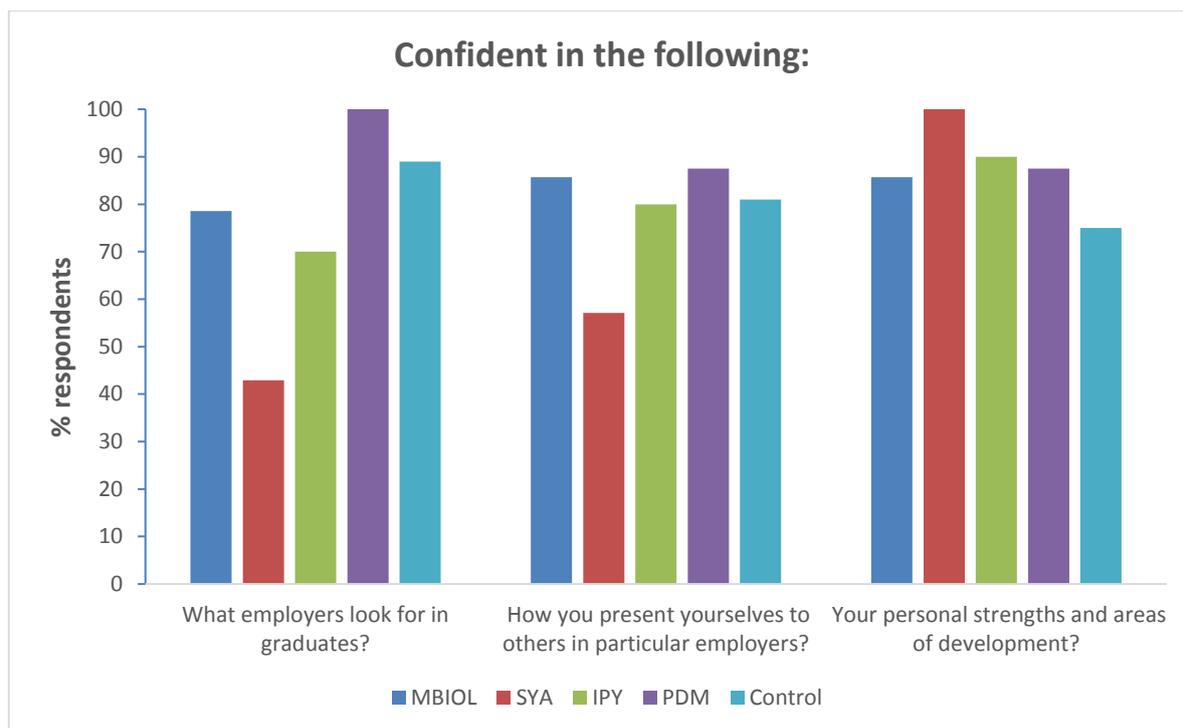
Figure 2 Percentage of respondents scoring confident in the following areas: what employers look for in graduates, how they present themselves to employers and personal strengths and areas of development

How do these experiences support students in managing the next stages of their careers?

As shown in Figure 3a, when asked about their future career plans, 70% or above in all student cohorts were planning on pursuing a career in science with the exception of the control group; only 44% within this group said they planned to pursue a career in science.

When students were asked if they planned on applying for higher level study (Masters or PhD), the majority of IPY students said "yes" they were (90%), compared to 57% of the MBiol and SYA groups. The control group and the PDM groups were lower at 37.5% and 14% respectively (Figure 3b).
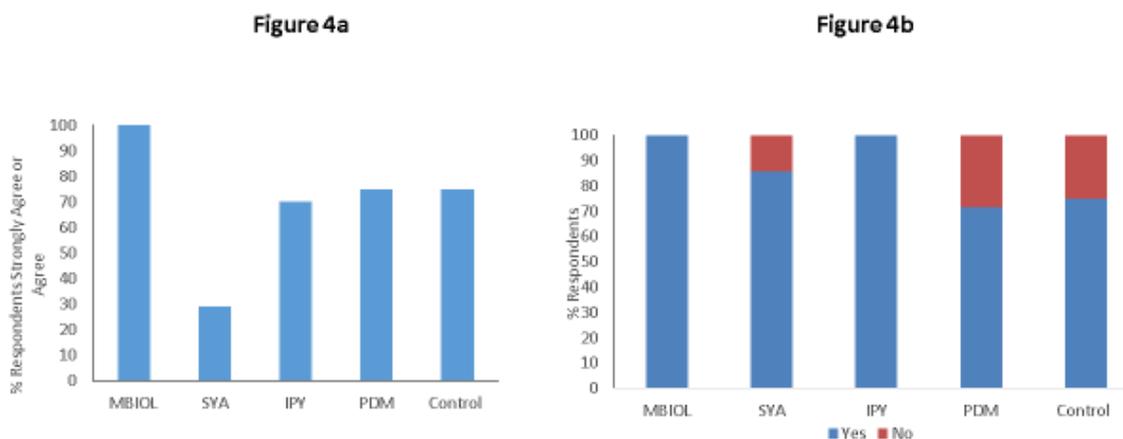
Figure 3a
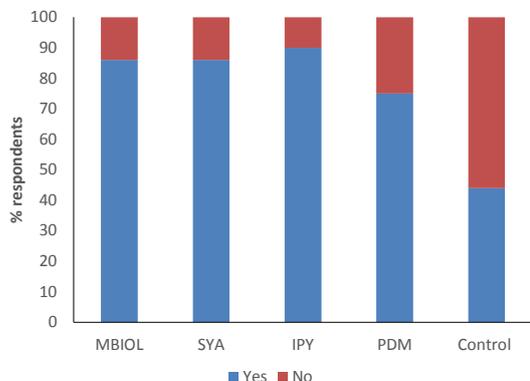
Figure 3b
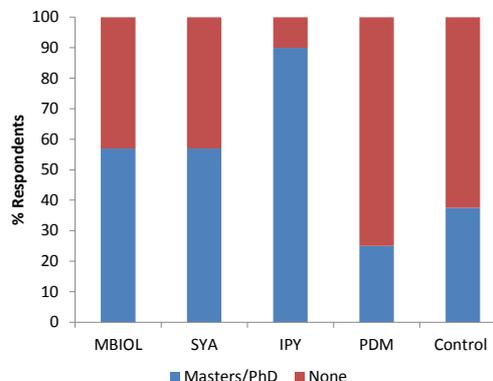
Figure 3 (a) The percentage of respondents planning to pursue a career within science and (b) The percentage of respondents planning to pursue higher level study (Masters/PhD)

Figure 4a

Figure 4b

Figure 4 (a) The percentage of respondents who agreed that undertaking the activity had prepared them for work after study and (b) The percentage of respondents who were confident in achieving their career goal.

For those that were not planning to pursue a higher level qualification, we found that two-thirds (67%) of those in the control group said they were undecided as to their next career step compared to 17%, 33% and 50% of IPY, MBiol or SYA student groups respectively. When asked, if they were aware of the diversity of careers open to them, the control group also scored low, with only half of the cohort indicating they were aware of the diversity of careers open to them.

Interestingly, 70% or more of students within the MBiol, IPY, PDM and control groups agreed the activity they have undertaken or their degree (control group) had prepared them for work after study, with 100% of the MBiol students considering this to be the case (Figure 4a). However, only 29% of students from the SYA group agreed that it had prepared them for work. Nonetheless, in response to the question as to whether they are confident in achieving their career goal, 100% of the IPY and MBiol cohorts agreed, 87.5% of the SYA group agreed with the PDM and control groups lower at approximately 70% (see Figure 4b)

Discussion

The aims of this study were to understand what motivates students to undertake a defined activity, to explore the experiences gained and to understand how these experiences influence how they manage their employability.

Our data shows that the main reasons cited by students for undertaking a PDM, MBiol or IPY centred on developing various aspects of their employability. Some of these motivating factors were broader as in the case of the PDM group, focusing on preparing them for employment, developing transferable skills and understanding how to manage their career. The PDM group were also the most confident in understanding the skills required by employers and in presenting themselves to others, in particular employers. This is in line with the learning and teaching students are exposed to on this module, which includes multiple interactions with employers and the maintenance of a reflective log articulating skills development. Reflective tasks in which students are able to articulate and evidence their skills are recognised as an important way in which a professional identity can develop (Peet, 2015), such that students learn "how to portray themselves as focused and capable individuals with definable skills sets" (Bennett, 2016). In this respect, the module was successful in achieving this aim.

In comparison, the year-long research project was the main reason students chose to undertake an MBiol. They believed it would help them decide if they wished to pursue a research career, and they reported it would provide them with research experience beyond the standard undergraduate degree, thus giving them a competitive edge in the employment market. This is in line with the

work of Morgan (2012), Dickinson et al., (2015) and Divan et al., (in preparation) which shows that one of the main reasons a student pursues a Masters qualification is to enhance their employability prospects. The work of these authors has been conducted with student groups taking stand-alone Masters programmes (i.e. postgraduate qualifications that are not combined with undergraduate degrees). In particular, our work (Divan et al., in preparation) with Masters graduates in biological sciences have shown that that these graduates report a higher-level qualification (i.e. a Masters) adds value in the employment market. Studies with employers have also indicated that in some sectors, a Masters-level qualification is preferred at the point of recruitment over a standard undergraduate degree (CIHE, 2010). In particular, the extended research experience is perceived to be of considerable value by students if they are interested in pursuing a career in research (Divan et al., in preparation) and by those recruiting into higher-level doctoral research degrees (McBurney & Divan, manuscript submitted).

The majority of students undertook an IPY because they considered it provides employability and career development opportunities, including the opportunity to make industry contacts, developing research skills and knowledge of the world of work. There is a good body of evidence that suggests completing a work-integrated placement builds student confidence in their workplace capabilities (Billet, 2011; Clinton & Thomas, 2011), provides students with better understanding of the nature and standard of industry-required skills (Gamble et al., 2010), and improves employment outcomes (Mason et al., 2006). Surprisingly, less than 10% of students who had taken an IPY considered industry knowledge to be the most valuable skills gained through their IPY, with the majority identifying transferable skills gained to be the most valuable.

Unsurprisingly, the vast majority (nearly 70%) of students had taken the SYA for cultural reasons, with less consideration given to the way it may enhance their degree and employment prospects. This was reflected in our findings in that this group had the lowest awareness of what employers seek in a graduate and they were the least confident in presenting their skills to others, in particular employers. Interestingly, they felt most confident in understanding their personal strengths and areas for development, which may be a consequence of living independently and studying abroad for a year.

The most surprising data came from the control group. These students had decided not to take any of the activities in this study, although regrets were expressed by some students that they had not utilised these opportunities. The main reason cited for non-engagement was that none of the opportunities appealed. Other reasons for not taking one of these activities included personal issues, for example ill health and financial reasons.

We were also interested to note that the control group had the highest percentage of students who did not want to pursue a career in science, the highest proportion of students who did not want to pursue a higher degree and were the least decided in terms of their career plans. As Bridgestock (2009) writes, this uncertainty is likely to markedly affect graduate employment outcomes. In contrast, the MBiol, SYA and IPY groups were much clearer about their future career plans, more likely to pursue a career in science and self-reported the highest levels of confidence in achieving their career goals. Our work suggests that engaging in a period of professional practice such as the IPY or the MBiol or in a SYA can focus students' career planning. Engaging in the PDM developed valuable skills, such as high levels of awareness of employer requirements, self-presentation and appraisal of their capabilities, but did not appear to have the same impact as the MBiol, IPY or SYA activities on focused career planning.

The control group findings need further exploration, in particular the reasons for the low uptake of the four activities investigated in this study and why "none appealed". The free responses identified some barriers to access such as ill health, disability and finances. A more in-depth understanding of these factors is required and ways in which employability activities could be tailored to enable increased uptake.

Future perspectives
In summary, we found that students have very clear reasons for engaging in a particular activity which in many cases related to enhancing their employment prospects. Those engaged in any activity report more focused career plans (in the case of the MBiol, IPY and SYA groups) and in the case of the PDM group, high levels of self-awareness and understanding of employer requirements. We found students in the control group to be the most uncertain of their future career plans. The reasons for not engaging in the employability initiatives described here and lack of career planning require further investigation.

Acknowledgements

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