

Student attitudes towards and skills for sustainable development

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I. Executive summary

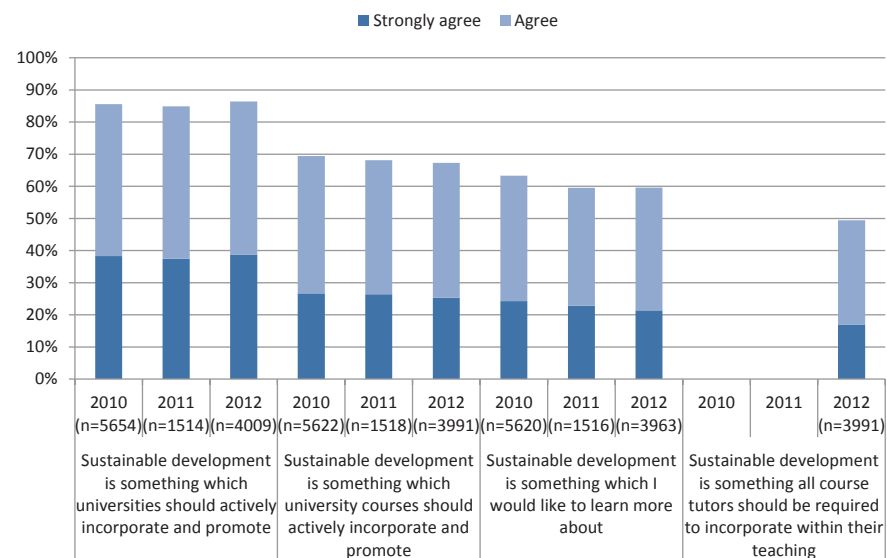
Research into student attitudes towards, and skills for, sustainable development (SD) was conducted in 2012, continuing research from 2010 and 2011. This longitudinal study has identified trends in demands and expectations from students new to university; tracked longitudinal attitudes from first-year students as they progress their university careers; captured student opinions both pre and post increase in tuition fees. Overall, the results for academic year 2012-13 continue and reinforce the previous findings, showing no notable differences except where highlighted in the full report.

Key findings

The research reinforced the conclusions of the 2010 and 2011 reports through the following key findings:

- 1 over eight in every ten students consistently believe that SD should be actively incorporated and promoted by universities, and this increases as respondents progress through their studies;
- 2 over two thirds consistently believe that SD should be covered by their university courses;
- 3 over 60% of students want to learn more about SD;

Summary of student responses to key questions about sustainable development in universities and teaching (years refer to the date the research was conducted)



- 4 80% of third-year students see universities as key players in the delivery of skills for SD;
- 5 a desire to learn more about SD increases as respondents progress through their studies;
- 6 there is a continued preference among students for a reframing of curriculum content rather than additional content or courses;
- 7 the majority of students continue to interpret SD as predominantly being about the environment, with less recognition of the social and economic aspects.

This third year of the research uncovered the following new insights from students:

- 8 a desire for teaching to include extra-curricular activities within the range of learning opportunities for sustainable development;
- 9 third-year respondents state they are more likely to accept graduate positions with a lower starting salary than respondents answering in their first and second years;
- 10 first-years in 2012 state they are more likely to accept reduced starting salaries for a job in a company with a positive performance on sustainability than previous years.

Recommendations

The authors make the following recommendations on the basis of the findings:

Students and students' unions should:

- 1 work with course representatives to raise the importance of SD in the formal and informal curriculum;
- 2 work in partnership with their parent institution in delivering extra-curricular activities, highlighted by this research as a key opportunity for sustainability skills development;
- 3 work holistically with staff at all levels across their parent institution to embed and institutionalise sustainability.

Academics should:

- 1 engage with students, students' unions, senior management and estates staff to incorporate SD into extra-curricular activities as part of the informal learning experience;
- 2 work with the wider academic community to build materials and approaches to embed SD across the curriculum and subject-specific disciplines where appropriate;
- 3 seek to develop sustainability and employability skills in students to assist with the development of graduates who can contribute to a 'green economy'.

Higher education institutions (HEIs) should:

- 1 allow academic staff the flexibility to develop formal and extra-curricular resources for sustainability and employability skills relevant to their discipline;
- 2 work with employers and professional bodies to identify the skills and knowledge needed for business opportunities in the 'green economy';
- 3 conduct further research on: the effect of increased tuition fees and the health of the economy on student choices and preferences; the different definitions of SD being used by students, academics, and policy makers.

Government and policy makers should:

- 1 support the higher education (HE) sector in responding to the clear student demands for SD to be promoted in their institutions;
- 2 assist with the understanding of student demands and aspirations around SD, and its delivery in institutions, for example through the inclusion of questions in the National Student Survey;
- 3 provide guidance to ensure learning and teaching resources on employability include SD, and vice versa.

Employers and professional bodies should:

- 1 work with HEIs and policy makers to identify the skills and knowledge needed for business opportunities in the 'green economy';
- 2 work with academics to incorporate employability and sustainability skills into the curriculum and extra-curricular activities;
- 3 work with students' unions on providing opportunities for work placements that provide relevant experience and improve sustainability skills for students.

In summary, in response to the clear student demand, we recommend all HEIs adopt a holistic approach where students, senior management, academic staff, estates staff, employers and professional bodies work together on embedding SD throughout all curriculum, extra-curricular, operational, research, and enterprise activities.

The 2012-13 phase of this national online survey achieved representative samples of 4,099 first-year students and 2,657 third-year students. As in previous waves of the research, all students were in HE and taking their first degree after not more than a year away from formal education. Survey promotion avoided any references to SD to reduce potential bias.

New insight

- 2012 research revealed a desire for teaching to include extra-curricular activities within departments included within the range of learning opportunities for SD.
- First-year respondents in 2012 are more likely to believe that their institution is delivering on practising and promoting skills for SD than first-year respondents in the two previous waves of research, however they are significantly less likely to report wanting to learn more.
- As might be expected, preference for teaching on employability also increases as respondents advance through their university careers.
- Third-year respondents are also significantly more likely to accept graduate positions with a lower starting salary than respondents answering when in their first and second years.
- Similarly, first-years in 2012 are also more likely to accept reduced starting salaries for a job in a company with a positive performance on sustainability than previous intakes. Further research would be required to assess whether or not this can be attributed to the increase in tuition fees these respondents are contributing.

Continuing trends

- Evidence continues to suggest that students become increasingly focused on employability throughout their time at university. Second-year students (49.7%) expressed a slight preference for employability over furthering their subject-specific knowledge and this preference was exaggerated among 2012 third-year respondents (52.1%). The situation is reversed among 2010 (47%), 2011 (46.9%) and 2012 (46%) first-year responses, indicating that first-year students are considering employability less within their university experience.
- A wider range of core, softer skills is seen as most important, relevant and valued by future employers, rather than sustainability specific skills. This suggests a need to reframe the debates surrounding inclusion of education for sustainable development (ESD) (34.8% of third-years in 2011 ranked the ability to apply environmental and social skills as one or two in terms of importance (where one is most important) for employers compared with 70.2% ranking communication skills as most important).
- Alongside this, further work with the business community to both communicate the tangible benefits of SD more widely, and to identify the most valuable skills, is needed to ensure skills for SD are valued and demanded.

2. Policy briefing

Following previous research conducted in 2010 and 2011, a desk research study informed an online survey of first- and third-year students in 2012 across the UK. Samples of 4099 first-year students and 2657 third-year students responded to the survey. This research completes the tracking of the 2010 intake throughout their university careers, having surveyed respondents as first-years in 2010, second-years in 2011 and third-years in 2012. By surveying three intakes of first-year students (2010 to 2012) this research has also captured attitudes and opinions both pre and post increase in tuition fees.

The overarching aims of the research were to understand any trends in new first-year students in 2012 as well as tracking the university careers of third-year students (surveyed as first-years in 2010 and second-years in 2011) in terms of their demands, expectations and experiences surrounding skills for SD. This research continues to be of value given the debates surrounding the green economy as a solution to the economic situation currently facing the UK. The associated jobs creation linked with the green economy and the sustained high levels of youth unemployment continue the emphasis on developing graduate skills in sustainability.

The current research findings reinforce the conclusions of the 2010 and 2011 research showing no notable differences (except where these are mentioned explicitly). The 2012 research reinforces the encouraging results and also reveals new insights to changes in attitudes and skills as respondents have progressed through HE (having tracked the 2010 intake from first to third year), and also among first-year students with the 2012 intake being the first to contribute increased tuition fees:

- students in all years of their university careers, and across first-year intakes for the past three academic years, continue to see sustainability skills as important and relevant, both at university and beyond into the workplace;
- students see universities as a key player in the delivery of these skills (79.7% of third-years in 2012 agree or strongly agree), though also ascribe responsibility to business and their selves, with this acceptance of responsibility increasing as respondents progress their HE careers (96.9% of 2012 third-years compared to 95.8% 2010 first-years) highlighting a role for institutions, students' unions and other representative bodies to promote the skills agenda;
- business involvement remains key in ensuring universities and individuals are able to understand and assist in the development of the most appropriate and valued skills.

A number of policy relevant issues remain:

- respondents in 2012 (and previously) offer somewhat contradictory results in that while they believe universities have an obligation to act on sustainability (69.1% first-years agree to some extent), the sustainability performance of a university is less likely to influence choice of university over traditional factors such as course and university reputation (eg 27.3% first-years ranked environmental performance as very important);
- continued monitoring will be needed to assess the importance of non-traditional influences over institution choice as increased tuition fees become the norm. Further research could also aim to unpack the extent to which action on sustainability is taken as a given by prospective student populations;

- 2010 desk research highlighted ESD to be a nebulous concept with no nationally accepted definition to incorporate the five core areas of SD among practitioners.¹ The 2011 and 2012 research continues to highlight this lack of clarity with students understanding sustainability to be environment-focused compared with the wider definitions offered by practitioners and academics;
- these wider concepts are ranked consistently as important and relevant for educational and employment careers, however they are not interpreted as SD (50.4% 2012 first-years think the ability to act as a responsible citizen locally and globally is very important to their future employers, however only 20.6% rank application of environmental and social skills as most important to employers). This will have repercussions for policy makers and practitioners developing curricula and resources for teaching sustainability;
- in a time of economic uncertainty and youth unemployment and where green 'growth' has been advocated as solution, the need for a workforce competent in 'green skills' both light/soft and dark remains pertinent;
- regular liaison with the graduate employers is necessary to ensure any reframing captures the most valuable employability skills and also has the potential to assist businesses in identifying innovative opportunities through contact with sustainability literate students and graduates. Expectations for their institution to be actively promoting and incorporating SD significantly increase as respondents progress through HE as does a desire to learn more about SD;
- third-year respondents are also significantly more likely to accept graduate positions with a lower starting salary than respondents answering when in their first and second years. Similarly, first-years in 2012 are also more likely to accept reduced starting salaries for a job in a company with a positive performance on sustainability than previous intakes. Further research into the influential factors on these changes, for example continued economic uncertainty, and increased tuition fees is necessary to gain a full understanding;
- the continuing debate on HE curriculum reform and the development of graduate attributes should also ensure the full definition of sustainability is included;
- finally, in continuing turbulent times for HE and graduate employment, longitudinal work into the student demands, aspirations and considerations will be key in understanding the impacts of increased financial pressures and ensuring HE is able to meet the expectations of both students and their future employers.

¹ The five core areas are: living within environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.

3. Background

3.1 Context of the research

The UK continues to face a continued period of economic difficulty and uncertainty. Associated with this have been high levels of unemployment, particularly among 16-24-year-olds in the UK with numbers topping one million in November 2011.² Looking in more detail at graduate unemployment, research has found that graduate full-time (FT) employment has fallen continuously between 2002 and 2010, from 57% of graduates in 2002 to 51% of graduates in 2010.³

Therefore a need exists to ensure graduates are fully equipped with the skills desired and valued by their future employers. Moving towards a 'green economy' has frequently been put forward as a major part of the solution to the current situation which means that the field of ESD bears increasing relevance. Recognition that all businesses will need to develop resilience to climate change and to use natural resources efficiently, and that a workforce with appropriate skills is required, is increasing.⁴ This is matched by an expectation among the vast majority of recent graduates (96%)⁵ that they will be involved in sustainability in some way during their careers.

This research, first conducted in 2010,⁶ was designed to improve the limited base of research on ESD beyond the setting of FE. It aimed to better understand student attitudes to and aspirations towards developing skills in SD both within and beyond HE, as well as understanding the policy context within which HEIs are operating. The longitudinal element to the research aims both to further understanding and to build a clear picture of how attitudes may change throughout university careers as well as tackling any changes in attitudes and experiences among students entering their first year of study.

Auxiliary influences on the research have included the vote, in December 2010, to increase student tuition fees, which has the potential to become a shaping influence on student choice and demand. Therefore a clear and detailed understanding of student expectations is necessary to ensure graduates leave university with optimal skills from the perspective of students, employers and policy makers.

With the UN Decade of Education for Sustainable Development coming to an end in 2014, this research presents a timely opportunity to take stock of current practices and identify where attention might best be focused going forward.

2 <http://www.guardian.co.uk/news/datablog/interactive/2011/nov/16/youth-unemployment-map>

3 http://www.local.gov.uk/c/document_library/get_file?uuid=0eb95341-f5d8-4ee1-b09a-b988201e9513&groupId=10171

4 BIS (2011) *Skills for a green economy: A report on the evidence*.

5 Sky (2011) *The Sustainable Generation: The Sky Future Leaders Study*. Results based on research with 751 graduate trainees and recently graduated MBA students and potential middle managers earmarked for leadership positions.

6 Available at: http://www.heacademy.ac.uk/assets/documents/sustainability/firstyearattitudes_finalreport.pdf and http://www.heacademy.ac.uk/assets/documents/esd/Student_attitudes_towards_and_skills_for_sustainable_development.pdf

3.2 History of the research: 2010 and 2011

As outlined above, the current research is a development of research conducted in 2010 by NUS and sister company NUS Services again on behalf of the HEA. This pioneering piece of research aimed to go some way to fill the gap in understanding student attitudes towards and skills for SD in the UK. This two-phase study, incorporating a purposive desk review informing an online survey conducted in October 2010, gained 5,763 responses. Respondents were first-year students who had not taken more than a year away from formal education and were taking their first degree. The final report detailing the findings for the 2010 research can be found online, at http://www.heacademy.ac.uk/assets/documents/sustainability/FirstYearAttitudes_FinalReport.pdf The study was repeated in 2011 and also expanded to survey both first- and second-year students meeting the same criteria as in 2010 (ie no more than a year away from formal education). A sample of 1552 first-year students and 1641 second-year students was achieved. The 2011 report can be found at: http://www.heacademy.ac.uk/assets/documents/esd/Student_attitudes_towards_and_skills_for_sustainable_development.pdf

4. Aims and objectives

4.1 Project aims

The overarching aims of this research are to build on the findings and recommendations from the previous two waves of research in 2010 and 2011 in order to further develop the understanding of the ongoing attitudes of students in terms of:

- current attitudes towards and understanding of SD among first- and third-years;
- first-year student attitudes towards, and skills in, SD over time;
- attitudes towards and skills in SD as students progress their university career;
- the impact of changes in the HE landscape with the introduction of increased tuition fees for 2012 first-year students by tracking first-year responses from 2010 to 2012.

With this in mind, the following objectives were defined for the research:

- to construct a team of ESD policy and research experts to provide the HEA with a history and overview of SD as delivered in schools and FE from both policy, and skills and attitudes perspectives;
- to augment the existing literature review through post-2011 review of the effect of SD in terms of student attitudes and skills within HE;
- to engage with a representative sample of first-year HE students from a wide number of HEIs within the UK in order to understand:
 - existing skills and knowledge;
 - attitudes to SD;
 - unmet needs in SD;
- to engage with a representative sample of third-year HE students from a wide number of HEIs within the UK in order to understand how time at university impacts on:
 - existing skills and knowledge;
 - attitudes to SD;
 - unmet needs in SD;
- to produce a report including recommendations to the HE sector in order to enhance ESD in terms of meeting student needs through creation and development of sustainable policy.

4.2 Research objectives

A two-phase research approach was designed to meet these objectives, following the approach adopted in the 2010 and 2011 research projects, namely a desk-review phase feeding in to a phase of UK-wide empirical research.

The objectives for each of these phases can be broken down as follows:

4.2.1 Desk review

- To focus on advances made in understanding and delivery of ESD (including the transition from schools to HE) since research was historically conducted in 2010.
- To understand evidence of existing student attitudes and skills in ESD and how ESD is currently being delivered in the UK.

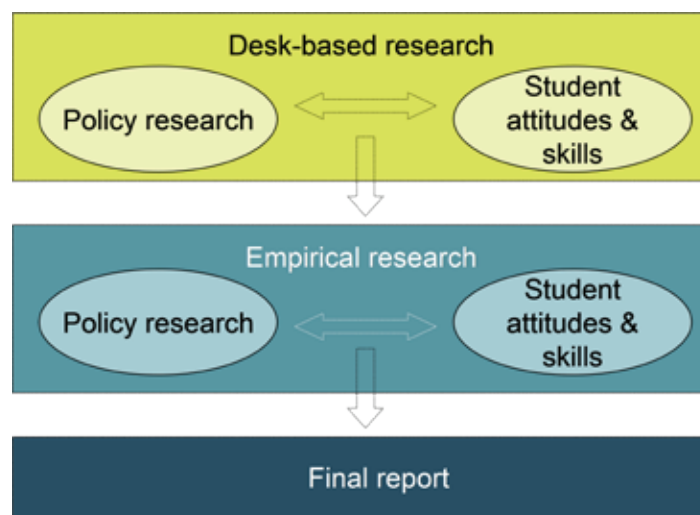
4.2.2 Empirical research

- To replicate the 2011 empirical research, with pertinent updates where necessary, in order to determine first-year students' understanding of and attitudes towards SD issues with a view to understanding how this has changed since the previous wave.
- To replicate, and update where necessary, the 2011 empirical research in order to understand the impact and influence of universities, if any, on student attitudes towards and skills in SD.
- To understand stated aspirations to study SD and gain insight into the degree to which first-year students in HE feel that these aspirations are being met;
- to repeat this among third-year students.
- For both cohorts: to understand existing provision and interpretation of ESD and any stated unmet needs in ESD through empirical research.
- For both cohorts: to use the empirical research to clarify what measures HEIs could take to meet stated unmet needs in terms of aspirations to study SD and improvements to existing provision of ESD.
- To assess any significant differences within the 2010 cohort as they progress through university (first-year 2010, second-year 2011 and third-year 2012 students).
- To assess any significant differences between first-year attitudes between years (comparing 2010, 2011 and 2012 data).

4.3 Methodology

As outlined above, a two-phase methodology was conducted; a desk-based research period reviewed existing policy-based research and existing research into student attitudes and skills feeding into empirical research, which took the form of a national online survey. These two phases are demonstrated in Figure 1.

Figure 1. Research methodology



A project steering group consisting of representation from the HEA, NUS Services, and Change Agents UK (formerly StudentForce for Sustainability) met on two occasions to discuss:

- project set-up and methodologies;
- initial empirical research findings and reporting strategy.

4.3.1 Desk research

To provide a foundation for the empirical work, and as part of the robust analysis, this project featured a short desk-based research phase covering:

- existing publications and datasets on student attitudes, skills, unmet needs and perceived wants, which have been published since the 2011 wave of research;
- recent historical policy (post 2011) in ESD.

Core documents for inclusion in the desk research were identified through a process of consultation with the expert steering group along with purposive literature searches online (eg using Google search and Google Scholar). The consultation and search aimed only to discover sources published post-November 2011 to provide an update to the desk review conducted as part of the previous research. Identified documents were summarised into a summary table and findings were fed in to the next phase of the project – the empirical research.

4.3.2 Empirical research

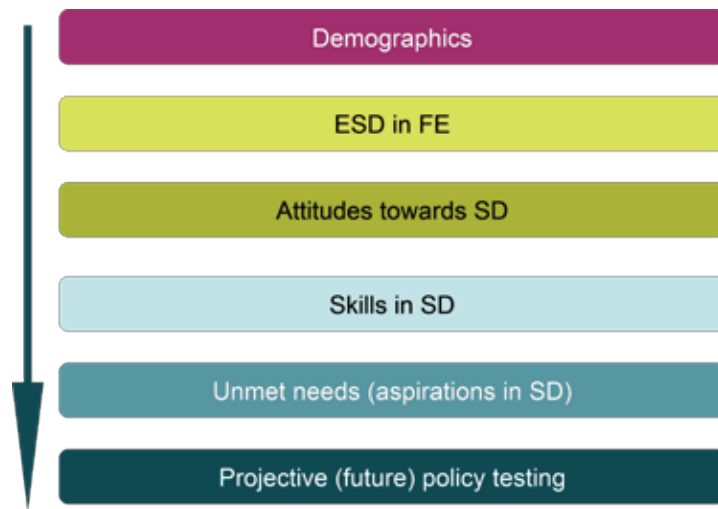
Informed by the findings of the desk review, along with consultation with the steering group, surveys were designed for first- and second-year students around the following core themes:

- student attitudes to SD issues;
- student definitions of SD;
- student aspirations towards ESD and expectations from HEIs;
- student attitudes towards potential future policies to include SD within the curriculum;
- student awareness of the future green economy and skills needed.

Empirical research was run via an online survey, applying quantitative methodologies to measure attitudes and skills. The skills under investigation in this research matched those developed for the previous research to be key indicators of the core skills in SD: living within environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.

Two surveys were designed, one for first-year students, one for third-years. The overall content of the surveys was a deliberate repeat of those used in the 2010 and 2011 research in order to capture comparable longitudinal data. Additions were made to capture further data on attitudes towards skills and employability, hypothesised to be increasingly important as the 2010 cohort progresses through their university career and also with the increase in tuition fees for the 2012 intake. Figure 2 outlines the overall flow of the surveys.

Figure 2. Survey flow



Recruitment

The NUS Extra mailbase was used to provide access to 25,000 first-year students and 25,000 third-year students who were targeted with an HTML email. The HTML email directed respondents to an allocated web page for the project where the surveys could be accessed.

Within the third-year sample were respondents who completed the 2011 research as second-years and gave their permission to be recontacted for future research by NUS Services

Support of a range of HEIs and students' unions was also secured to promote the surveys. This was typically through notifying interested members of staff to highlight to their first- and third-year students, and advertising through email or newsletter notifications.

The surveys were additionally incentivised with a £1000 prize fund, including a first prize of £500.

The surveys achieved representative samples of 4,099 first-year students and 2,657 third-year students.

5. Outputs and findings

5.1 Desk research – headline findings

The aim of this desk research is to provide an update to the research carried out previously for the HEA and to use existing work to inform empirical research. The core findings can be summarised as follows:

- in depth research within one institution reflects the findings of this and previous waves of empirical research concluding that students see sustainability skill as influential on future employment, but also note that students are failing to understand the value of some of the softer skills in developing a more sustainable society. Other research also revealed that students often find it difficult to articulate their own skills and recognise how these match the attributes desired by employers;
- skills for SD should be clarified and aligned with those employability skills that are better understood in HE and by employers. While a majority of HEIs claim to have already tailored their curriculums to enhance employability, research among students and employers has revealed the need to provide more work-based learning opportunities to improve skills and abilities. These opportunities should be provided throughout student careers. In terms of teaching and educating on ESD, a lack of materials was no longer seen to be an issue within the UK;
- some authors call into question the role of HE, feeling that moral and social aims have been overshadowed by economic goals of employability skills and preparation for the workplace. The suggestion here is that HEIs should be going beyond skills and knowledge and including other aspects of living within a sustainable society;
- a vicious cycle seems to be in operation in terms of understanding and identifying skills needs for sustainability. Research has found that many employers lack an awareness of and understanding of skills requirements and the implications of the green economy. This calls into question their ability to communicate skills needs to HEIs and students and, therefore, the ability of HE to develop the necessary skills among graduates;
- research has revealed that some employers remain sceptical over the mechanisms for engagement with HEIs on curriculum issues, despite other findings suggesting that HEI engagement with employability is high. Suggestions include government intervention to assist with skills auditing, along with increased involvement of professional organisations, for example through accreditation of qualifications.

5.2 Empirical research – headline findings

The online survey was designed to build on the findings of the desk review and provide new insight and add further clarification to the 2011 research, both longitudinally at point of entry to university and throughout university career, on what students' attitudes are to, and skills in, SD in terms of:

- existing skills – the influence of FE;
- understanding, attitudes and behaviour for SD during HE;
- learning and using SD skills in HE;
- sustainability and employability.

The remainder of this chapter is arranged according to these themes. Key findings from each of these themes are presented at the start of each section.

Results from the three waves of research are presented, with each section considering an update from the 2012 research, along with any notable trends and changes both across first-year responses and as respondents progress through their university careers. Figure 3 below presents a key in order to help interpret the graphical representations used within this section.

Figure 3. Guide to graphical representations

Tag	Survey data
First-years	Survey data from: • First-years 2010 (n=5763) • First-years 2011 (n=1552) • First-years 2012 (n=4099)
2010 cohort tracker	Survey data from: • First-years 2010 (n=5763) • Second-years 2011 (n=1641) • Third-years 2012 (n=2657)
2012 research	Survey data from: • First-years 2012 (n=4099) • Third-years 2012 (n=2657)

5.3 Existing skills – the influence of FE

Key findings

- Schools continue to be key vehicles of SD through a range of schemes.
- Respondents who attended schools (private or state) with integrated sixth-form colleges show the highest recollection of sustainability initiatives.
- Recognition in 2012's first-years remains consistent with 2011 and, as with 2011 responses, lower than 2010.
- 2012 third-year responses confirm the trend of reducing recall of FE schemes as students progress through their university careers.
- Retrospective recall of coverage of SD skills within the FE curriculum shows that most first-year respondents in 2012 believe that most skills were at least partially covered, reflecting findings in 2010 and 2011.
- Further research could focus on understanding better the relationship between SD skills and recall of SD schemes – are skills/behaviours remembered when FE scheme specifics are not?

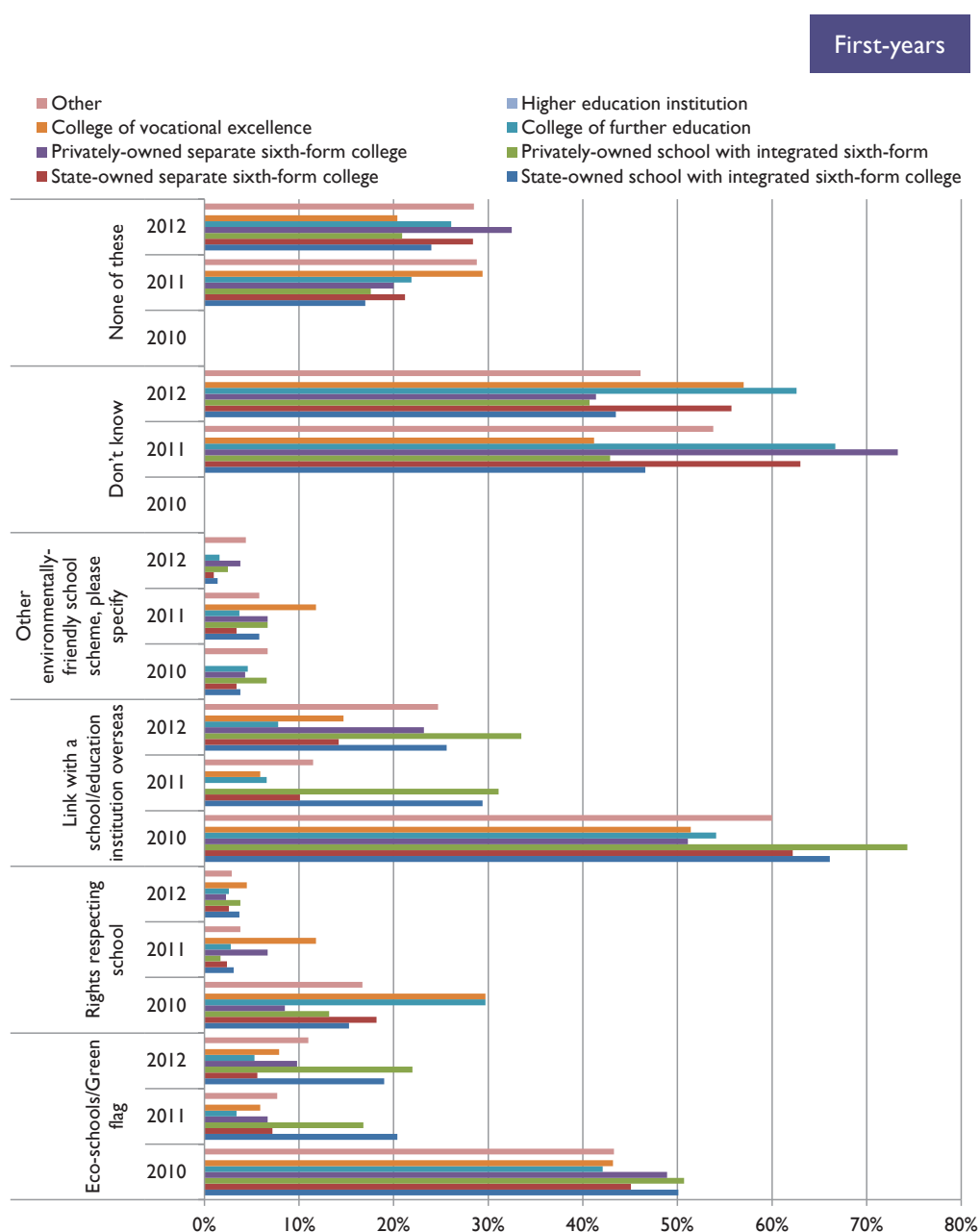
The surveys have all included an exploration of the influence of and exposure to initiatives and teaching during respondents' time in FE. The 2010 and 2011 research found schools to be the key vehicles of SD schemes. This remains the case in 2012 with respondents having attended state-owned and private schools with integrated sixth-form colleges showing the highest recollection of sustainability initiatives and schemes. However, recognition remains lower across the board in 2011 and 2012 than among the 2010 survey respondents. Comparing the 2010 data with 2011's second-year and 2012 third-year responses suggests that SD schemes in FE are not making

a lasting impact on students, for example 35.6% (n=1451) first-years in 2010 recalled their FE institution being part of the EcoSchools/Green Flag scheme, however only 11.6% (n=189) second-years in 2011 and 9.1% third-years in 2012 (n=229) recalled this participation.

The responses from 2011 and 2012 first-years suggest that recognition overall is lower with only 13.7% (n=210) and 13.5% (n=543) recalling participation in EcoSchools/Green Flag in their FE institution.

The responses from 2011 and 2012 are substantially different from those received in 2010. The option of 'Don't know' was added in the last two years of the research however, no responses were forced in the 2010 survey meaning that if respondents did not know the answer to a question they were able to skip to the following question.

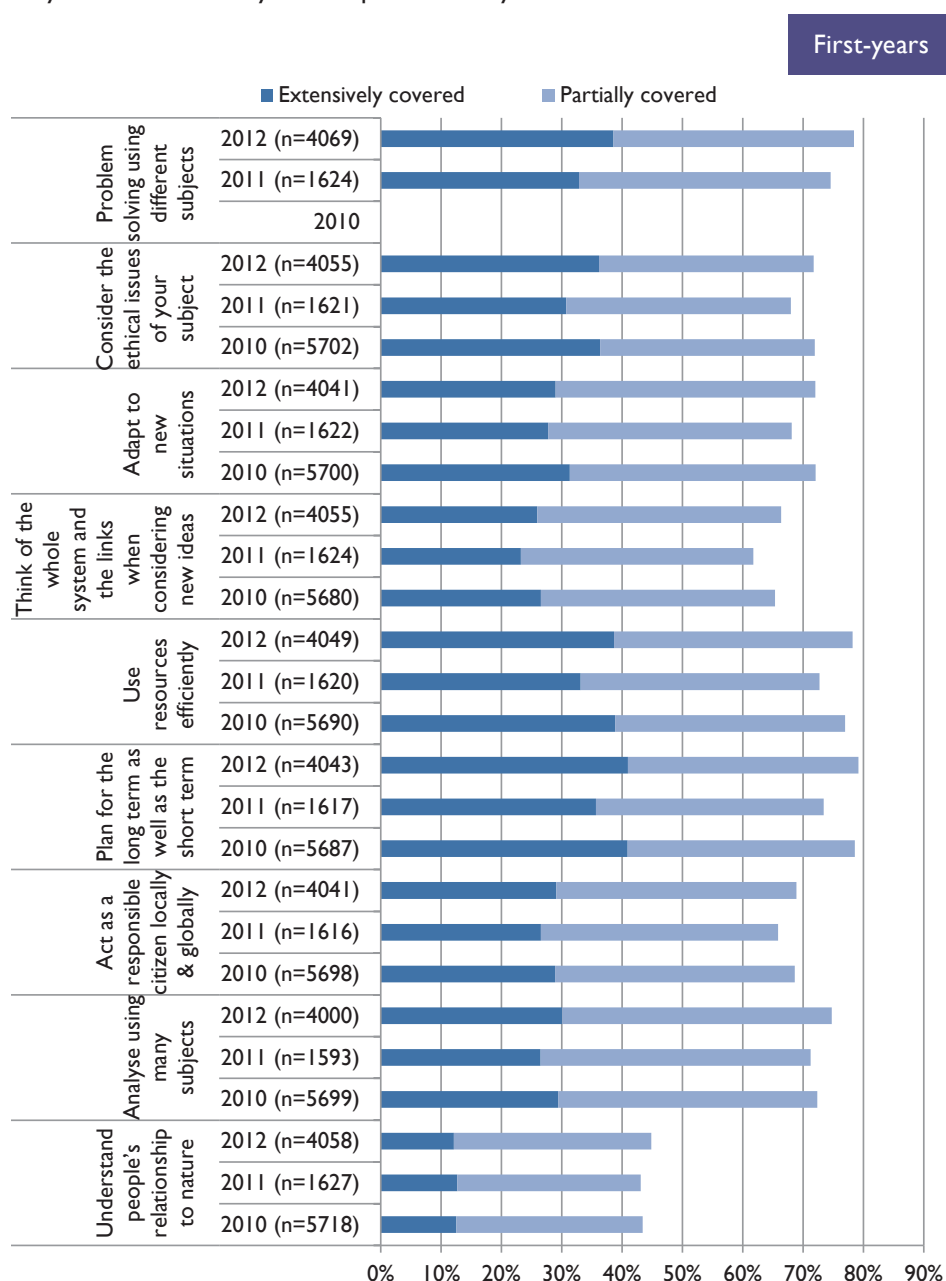
Figure 4. What awards/initiatives did the last place you studied before your current university/college take part in, if any?



Respondents were also asked to retrospectively recall coverage of the core skills defined as SD in the 2010 research during their time in FE. The majority of 2012 first-year respondents continue to believe that all skills, apart from developing an ability to 'understand people's relationship to nature' were at least partially covered during their time in FE, reflecting the views of 2010 and 2011. The results from 2012 first-year respondents match more closely the responses from 2010 first-years and, in some cases, being significantly higher than in 2011. For example 78.2% (n=3167) of first-years in 2012 felt that the skill of 'using resources efficiently' had been covered to some extent during their time in FE, which is significantly higher than the 72.7% of first-years in 2011 (n=1178).

This reflects the findings of the original 2010 research and suggests that the opportunity for core competencies to be formalised and deepened remains. As understanding of, and focus on, skills for sustainability and employability increases, it is worth continuing to assess student perception of coverage to understand the immediate and longitudinal impacts of any changes to FE curriculums and to develop a greater understanding of the links between skills recall and SD scheme coverage.

Figure 5. Please tell us to what extent you believe these skills were covered in your curriculum at your last place of study.



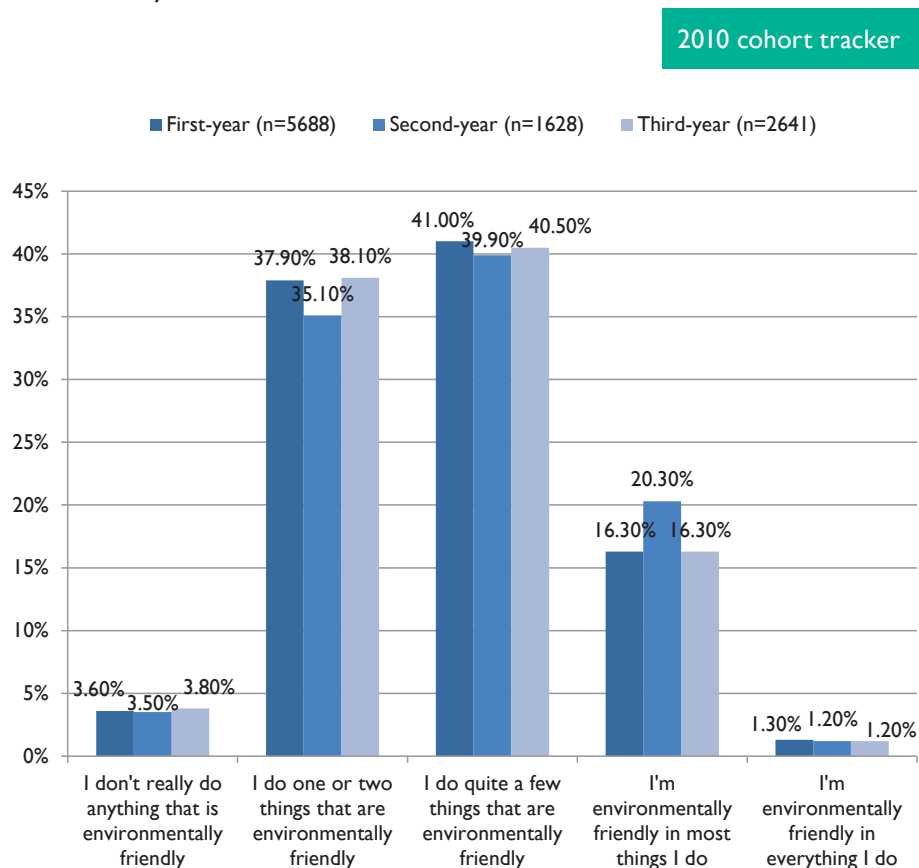
As was found in the previous research, the focus of definitions provided by respondents in 2012 was in line with the concept of sustainability as conveyed within the Brundtland (1987) definition. The environmental dimension also continues to be more prominent, as shown by figure 6. This suggests a potential need to review the teaching provided in FE to ensure the full capacity of SD is being covered.

It is worth reiterating that following the methodology of the previous research, within the eight skills used to describe sustainable behaviours, one specifically focused on the environment and another on ethics. The remaining six were deliberately broad in order to reduce the risk of leading respondents into associating the survey with the environment. Only two standalone questions within the survey directly addressed the environment. In order not to bias the bulk of the survey, the definition of sustainability was taken towards the end of the survey to allow analysis of the different understandings of the term. With student respondents placing weight upon understanding sustainability within a narrow spectrum, associated with the environmental needs of today rather than the wider global needs of tomorrow, standalone research of the definition of sustainability is needed to ensure no positioning effect is in place.

5.4.2 SD behaviour

Respondents in 2012 continue to believe themselves to be generally positive in terms of demonstrating environmentally-friendly behaviours, with 40.5% (n=1070) of third-year respondents and 39% (n=1574) first-year respondents stating that they 'do quite a few things that are environmentally friendly'.

Figure 7. Which of these statements would you say best describes your current lifestyle?

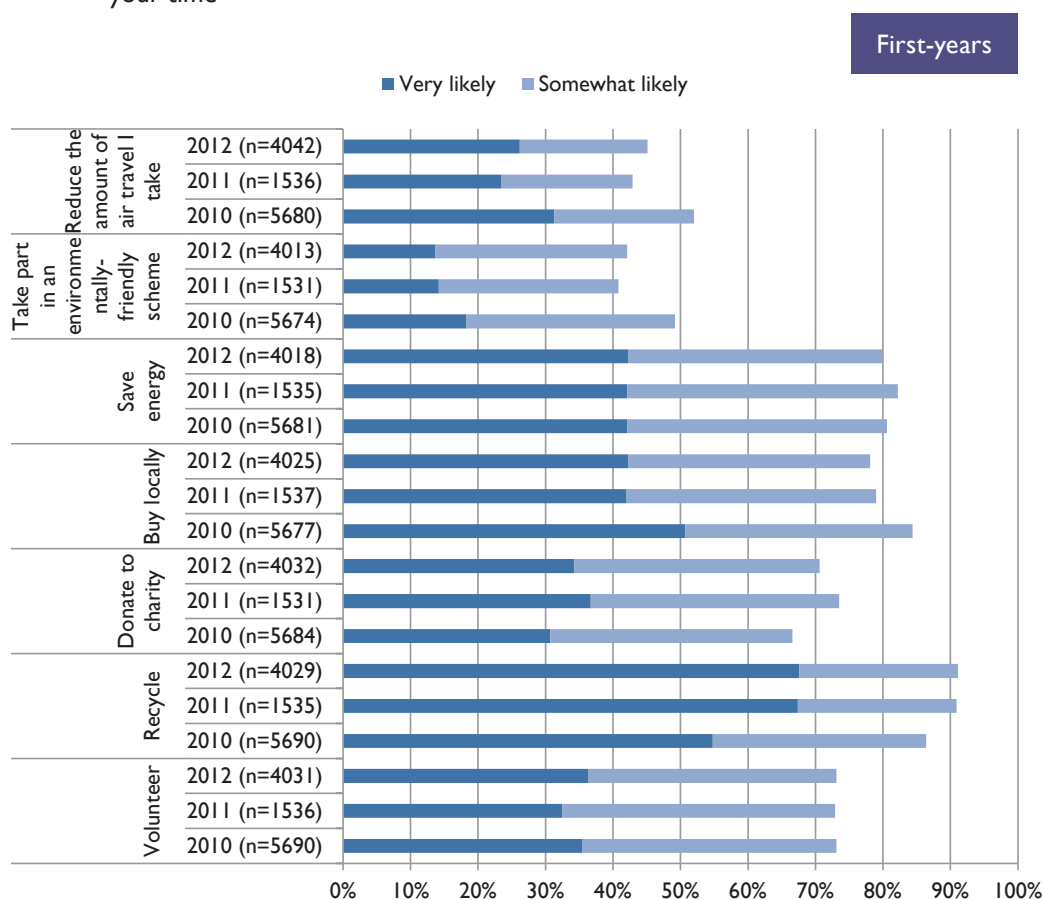


Following the progress of the 2010 first-year cohort (second-years in 2011), figure 6 shows a slight increase in the proportion of respondents who see themselves as being environmentally friendly in most things they do (16%, n=927 of 2010 first-years compared with 20%, n=330 2011 second-years) suggesting that this year group has made a slight improvement to its environmental behavior; however this then decreased significantly again between second-years in 2011 and third-years in 2012 (16.3%, n=430). It is important to bear in mind that these are self-reported behaviours and may not reflect true action, however further investigating changes in environmental behaviour in the move from home to university, and from university accommodation to private residences may reveal any true differences in environmental behaviour.⁷

Across all waves of the research, the proportion of respondents stating they are environmentally friendly in everything or most things they do is low indicating opportunities remain to facilitate environmental action while at university. This question is asked on a national basis by Defra's tracker survey, and results from 2009 show the student population to be slightly behind the national average with 25% of people across the UK self-reporting that they are environmentally friendly in most things they do.⁸ It is, however, worth remembering that Defra last collected this data in 2009 and more recent studies have shown that globally, levels of concern about environmental issues are falling.⁹

The intention to carry out behaviours while at university continues to be strong among first-year students where the behaviour has become a 'social norm' (for example recycling) and can be conducted individually, see figure 8 below. The 2012 results on the whole mirror the 2010 and 2011 research findings.

Figure 8. How likely, if at all, are you to take part in the following actions during your time



7 <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16193>

8 Defra (2009) *Public attitudes and behaviours towards the environment - tracker survey*.

9 <http://www.independent.co.uk/environment/climate-change/green-fatigue-sets-in-the-world-cools-on-global-warming-8513826.html>

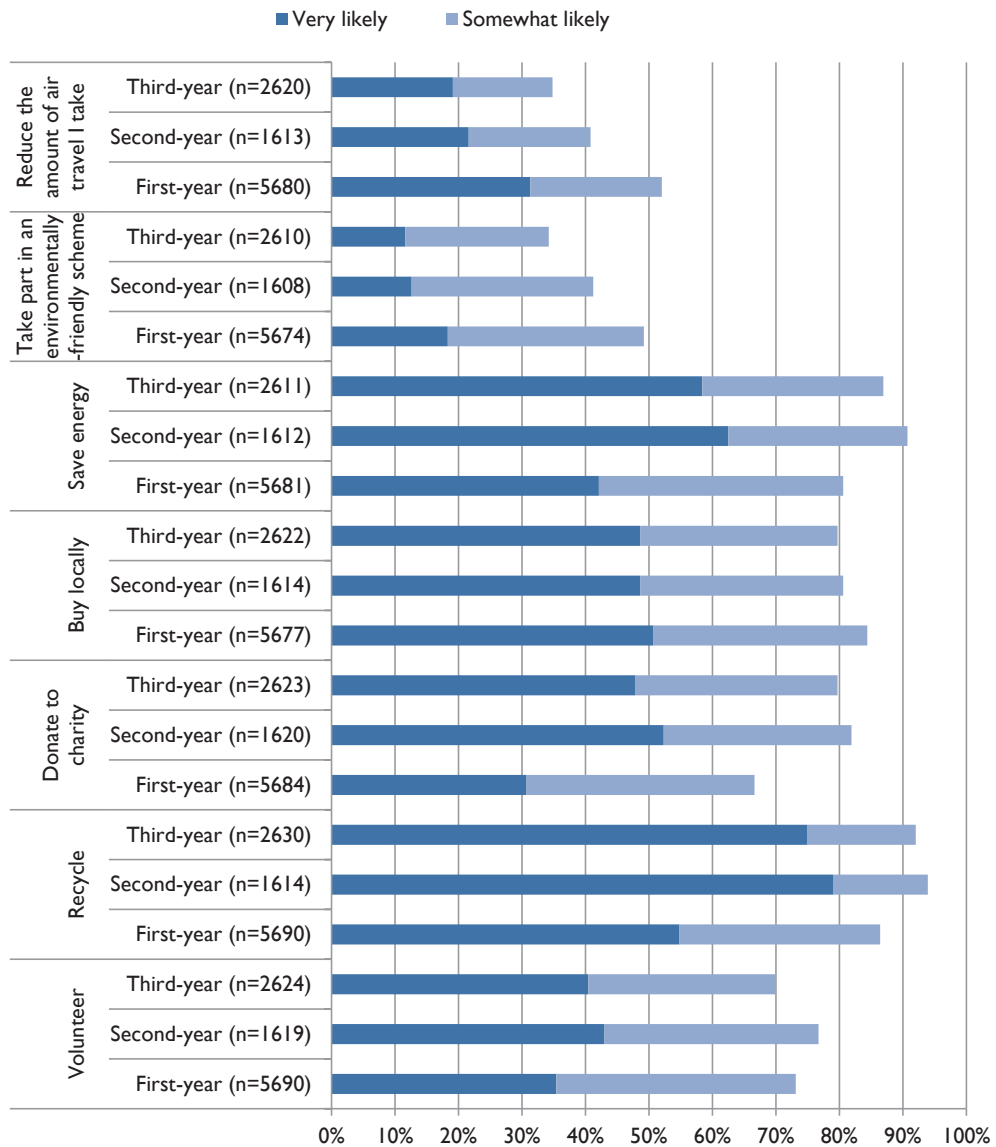
Previous work by NUS (for Defra, unpublished) has demonstrated that collectivism is often a barrier to uptake of pro-environmental behaviours, and the results from this research continue to reflect this. Fewer respondents anticipate participating in environmentally-friendly schemes or volunteering their time. This has implications for the finding highlighted in the desk review in 2011 that informal learning experiences offer important opportunities for learning skills for sustainability. This also holds implications for the findings on teaching and learning of SD presented later on in this report.

Figure 8 shows that the intentions for their time at university iterated by first-year students change throughout their university careers. There is a significant increase in the intention to recycle and save energy as respondents move from their first year (86.4%, n=4916 and 80.6% n=4579 respectively) into their second year (93.9%, n=1516 and 90.7%, n=1462 respectively). This is perhaps a reflection of a move to more independent living on leaving halls of residence. However, there is a significant decrease in intention to carry out these behaviours by 2012 third-years (92%, n=2420 and 86.9%, n=2269).

Decreases can also be seen in respondent intentions to participate in environmentally-friendly schemes as progression through university occurs. While 49.2% (n=2792) of first-years in 2010 showed an intention to participate in an environmentally-friendly scheme, this decreases significantly to 41.2% (n=662) among 2011 second-years, and decreases significantly again to 34.2% (n=892) among 2012 third-years. It is possible to suggest that the reasons behind this finding include the amount of time respondents have remaining at university along with increased course commitments in their final years, however further research would be needed to investigate these changes in more depth.

Figure 9. How likely, if at all, are you to take part in the following actions during your remaining time at university?

2010 cohort tracker



The results shown in the figures above also highlight the differences in understanding of the nature of the skills which are included under the definition of 'environmental and social skills'. Comparing these and the previous responses suggests that it is the 'pure' SD skills, eg 'understanding people's relationship with nature', that is defined by students as 'social and environmental skills' rather than the softer, more generic skills listed, eg 'plan for the long term as well as the short term'. This reflects the focus of student understanding of SD on the environment (see figure 6). It also highlights potential differences in understanding between thinkers and educators on SD and their students.

Key findings

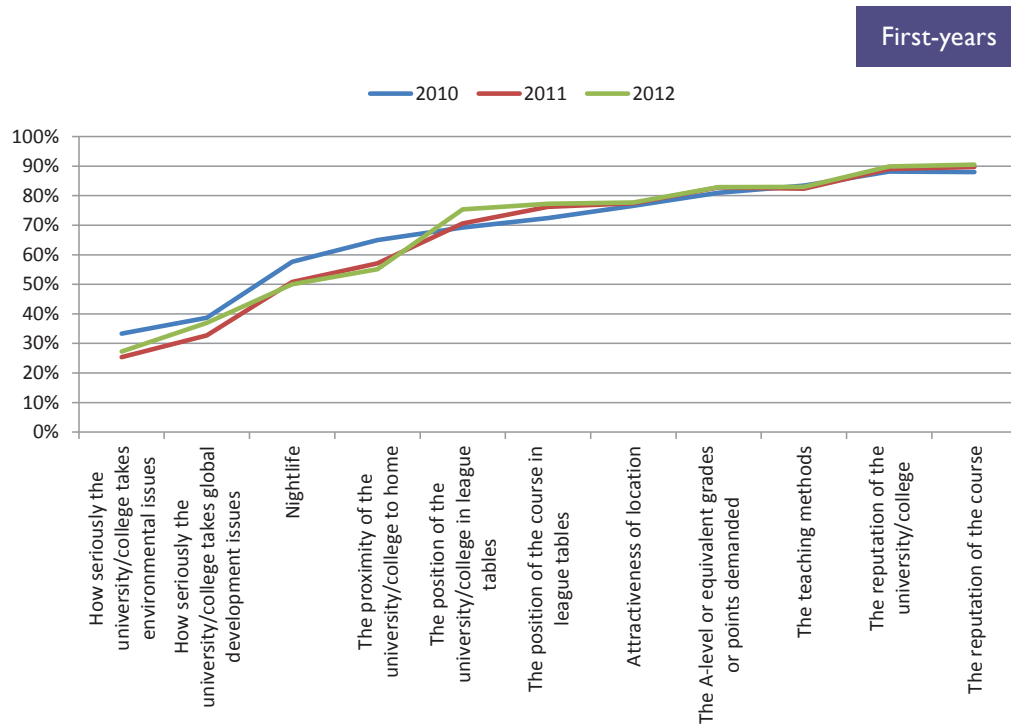
- Up to a third of first-year respondents in 2012 considered the environmental and ethical performance of their university when making decisions over where to attend, however traditional attractants remain strongest – reputation, teaching and entry requirements.
- Some evidence exists of respondents increasing the extent to which SD skills are carried out as they progress through university.
- While overall perception of importance of SD skills for graduates in their field remains high as respondents progress throughout their university careers, and also as new intakes begin their time in HE, there are a few exceptions which have seen a significant decrease in terms of their ranked importance. These include understanding people's relationship to nature and the ability to act as a responsible citizen globally and locally.
- Overall relevance for SD skills to their courses range from 60% to 90% agreement and shows a general (significant and non-significant) increase with progression through HE.
- 2012 first-years are more likely to see some SD skills as relevant to their university education than 2010 and 2011 intakes, however some skills have decreased in terms of their relevancy, eg acting as a responsible citizen globally and locally.
- Continuing clear demand for SD skills to be taught with approximately 70% of first-years in 2012 agreeing that universities should be obliged to develop students' social and environmental skills, increasing significantly on 2011 results to reflect more closely the 2010 results.
- Translating these findings to their current places of study, 2012 respondents reflect the previous findings in that the majority (c.80%) agree that their institution practises and promotes good social and environmental skills; however this perception shows no significant variation according to year of study but there is a significant increase between 2010 first-years and 2012 first-years. Agreement that SD is something their institution should be actively incorporating and promoting also increases significantly throughout respondents' educational career.
- Perceptions of performance of clubs and societies remain consistently lower across all waves of the research suggesting there is scope for improving extra-curricular, informal learning opportunities.
- Three-fifths of respondents in 2012 express a desire to learn more about sustainability including third-year responses which suggests capacity remains for increased coverage of SD into the final year.
- 2012 first-years are less likely to agree they would like to learn more about SD than 2010 counterparts; more research is required to assess whether this change is due to improved teaching and learning or a lack of engagement.
- Approximately 50% respondents in 2012 reveal a desire for an obligation to be set on course tutors to include SD within their teaching.
- Preference for SD content to be built into existing materials continues throughout university careers and across first-year intakes. Third-years in 2012 are less likely to prefer adding additional content and courses. Introduced to questioning in 2012, the option of extra-curricular activities run within departments on SD is also seen as relevant to c.70% of respondents.

5.5 Learning and using SD skills in HE

5.5.1 Influence over university choice

First-year respondents continue to cite university and course reputation, league tables and entry requirements as more powerful attractants to a university than SD metrics; university reputation and delivery act as a match for respondent aspirations. These are the main attractants across all three years of the research.

Figure 10. How important were the following when choosing which university or college to apply to? (Responses ranked very important and somewhat important)



2012 first-years are, however, significantly more likely to have considered the position of their university/college in the league tables than 2010 respondents (75.4%, n=3042 in 2012 compared with 69.2%, n=3942 in 2010). 2012 first-years are also significantly less likely to consider the proximity of their university/college to home than in 2010 (55.1%, n=2237 compared with 65% in 2010, n=3697).

Further investigation of these results is necessary to fully understand the influence of increased tuition fees on these findings. The current levels of unemployment may also have influenced university applicants to take into account a wider or different range of attractants when choosing their course and university so this will require further unpacking as well.

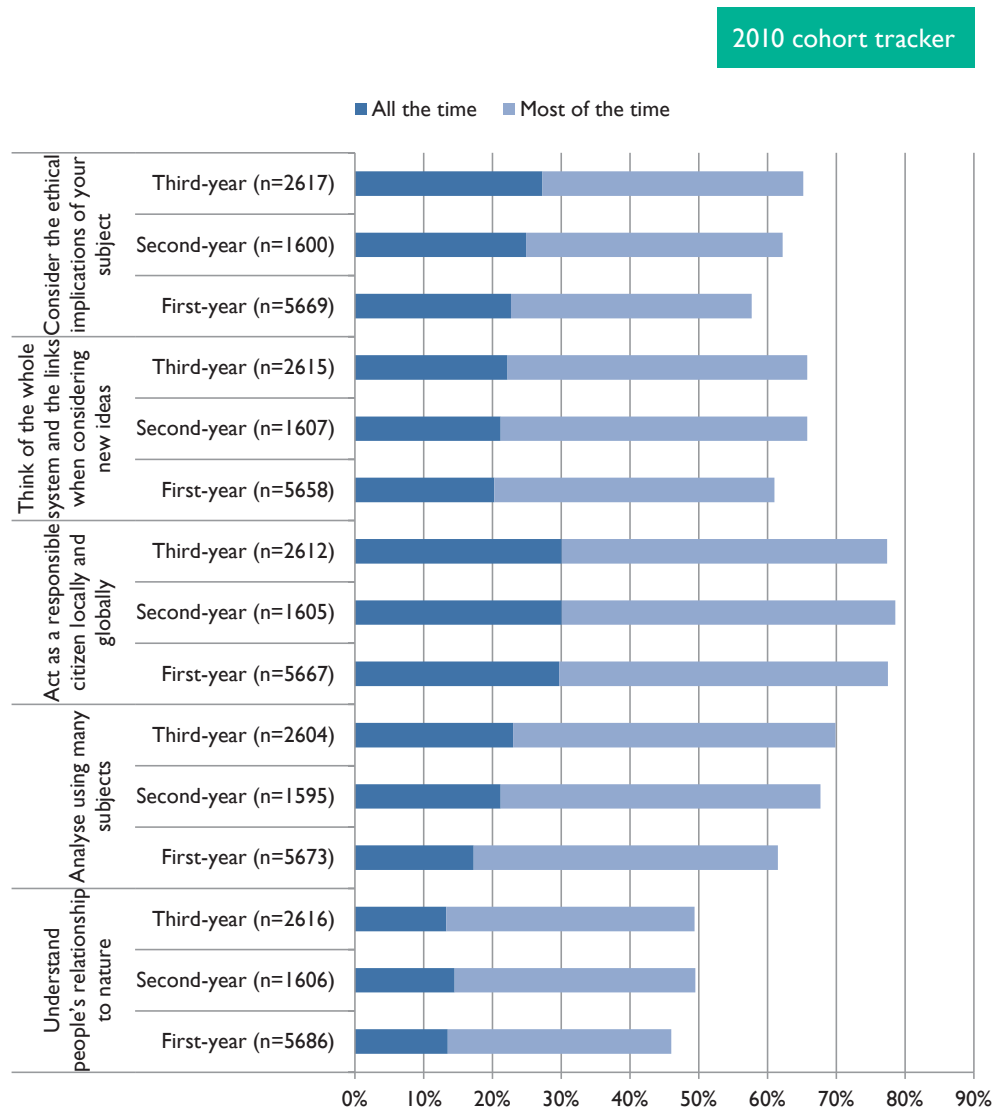
When taking into consideration wider responses to the question we can see that between a quarter and a third of first-year respondents in 2012 make some consideration of environmental and ethical performance (27.3%, n=1093 considered how seriously the university/college takes environmental issues and 37%, n=1493 considered how seriously the university/college takes global development issues). This continues to demonstrate the need to ensure that a university or college communicates its wider values to prospective students along with the more traditional attractants mentioned previously.

5.5.2 Skills during HE

With the majority of respondents across all years of research reporting at least partial coverage of SD skills during FE it calls into question the extent to which this learning is both useful and transferred to the HE setting.

Relatively low numbers of respondents cite conducting sustainability skills 'all the time' and difference between year groups for each skill is relatively minor, although there is evidence of an increase in the practising of skills as respondents progress through their university careers. For example, second-years in 2011 report a significant increase in 'analysing using many subjects all of the time' or 'most of the time' on 2010 first-years. The same significant increase applies between second- and third-years (61.5%, n=3489 2010 first-years, 67.7%, n=1080 2011 second-years and 69.9%, n=1820 2012 third-years). One skill that appears to defer from the trend is the ability to 'use resources efficiently'. The practising of this skill to some extent showed a significant increase between 2010 first-year and 2011 second-year (72.9%, n=4128 to 79.8%, n=1282), however this was reversed in 2012 with a significant decrease in the number of third-year respondents reporting carrying out this skill (75.7%, n=1978).

Figure 11. To what extent, if at all, do you think you personally carry out the following skills?

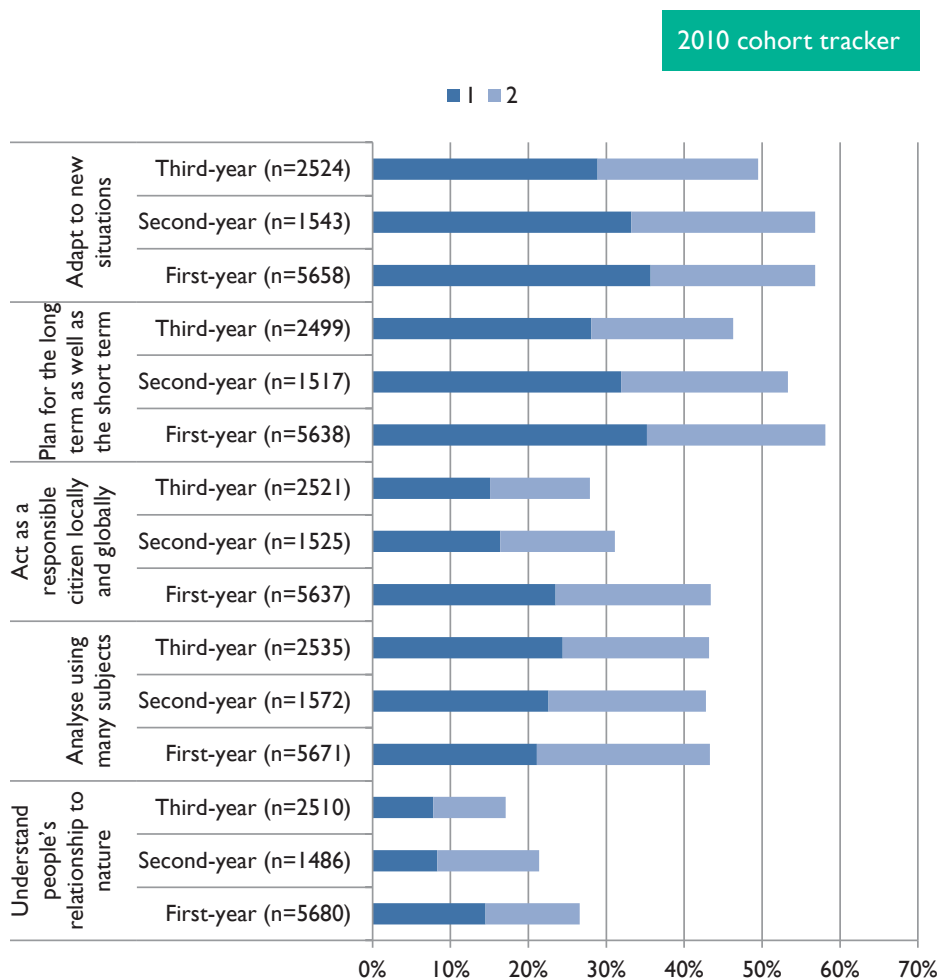


5.5.3 Importance of SD skills for graduates

In terms of ranking SD skills by the importance of inclusion in their courses, both overtly SD skills (according to respondents definitions of SD) and more generic skills have seen a significant decrease from 2010 first-year responses to 2011 first-years, and again from 2011 to 2012 first-years. For example, 26.6% of first-years in 2010 ranked 'understanding people's relationship to nature' as one or two in terms of importance (n=1510), falling to 23.5% (n=334) in 2011 and finally to 20.6% (n=822) in 2012. The ability to 'act as a responsible citizen globally and locally' has also seen decreases among the first-year intakes with just 30.5% (n=1223) ranking this skill as very important compared with 33% (n=483) in 2011 and 43.4% (n=2446) in 2010.

As respondents have progressed throughout their university careers there has also been a significant decrease in the ranking of skills as 'most important', for example there is a significant decrease between first-year responses in 2010 and second-year responses in 2011. The decrease is also repeated between the latter and third-year responses in 2012 for the ability to act as a responsible citizen globally and locally. For example only 27.9% of third-year respondents in 2012 compared with 31.1% of second-years in 2011 (n=474) and 43.4% of first-years in 2010 (n=2446).

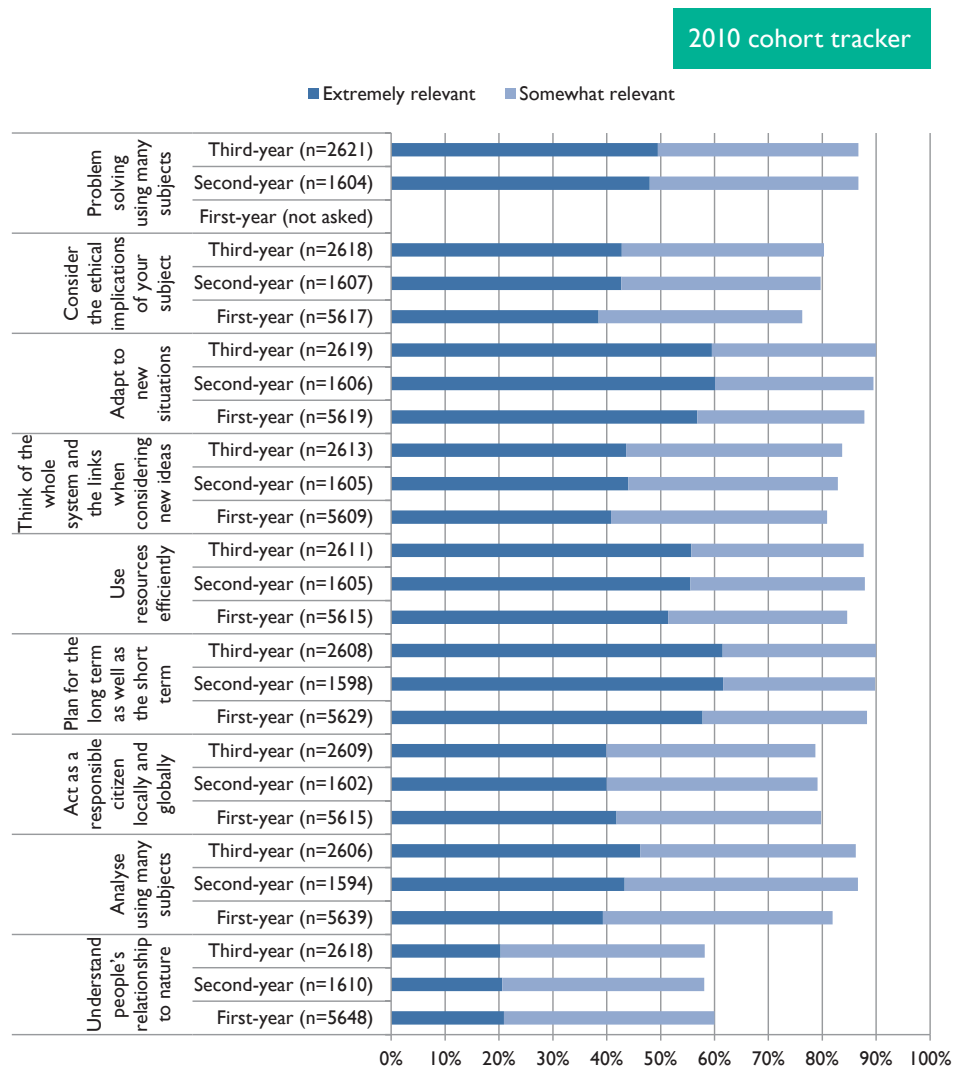
Figure 12. Please rank the following skills in terms of their importance in being included in your course for a graduate in your field, where 1 is the most important and 8 is the least important.



5.5.4 Relevancy to course

Respondents in 2012 also continue to place high value on many aspects of SD in terms of the associated skills increasing their ability to perform well in their courses during HE (see Figure 13 below, which demonstrates those who selected extremely relevant or somewhat relevant).

Figure 13. Thinking only of your own personal view, how relevant is it to you that the following skills are developed through your university education?

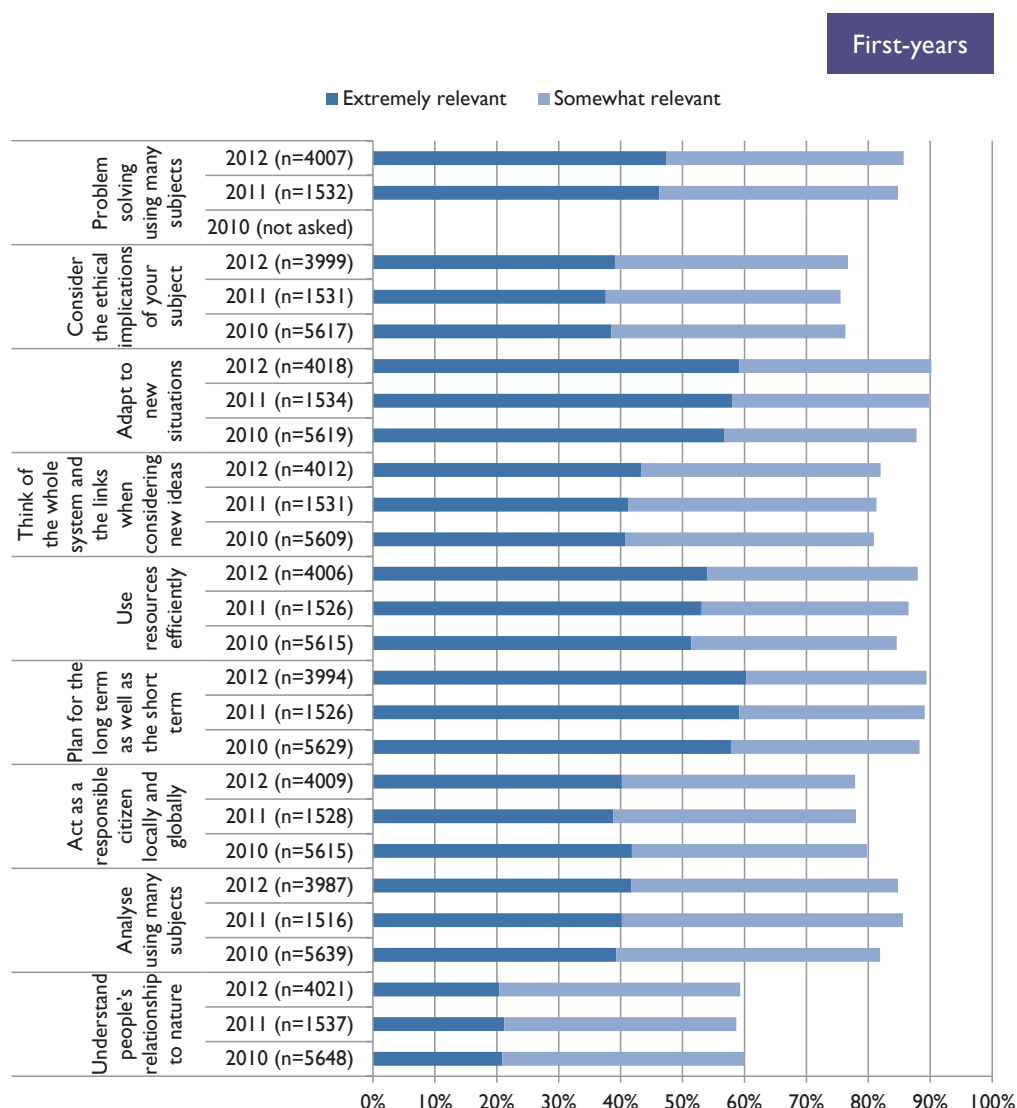


Comparing third-year responses in 2012 with responses gathered in 2010 and 2011, shows, in general, an increase in terms of perceived relevance with progression through HE for some skills for SD. Overall relevance ranges from 60% to 90% with only 'understanding people's relationship to nature' being consistently in the lower ranges. Taking the example of 'Consider the ethical implications of your subject', the relevance of this skill increased significantly between first-year responses in 2010 (76.3%, n=4286) and second-year responses in 2011 (79.7%, n=1281). Its relevancy increased again (non-significantly) among third-year responses in 2012 (80.3%, n=2102).

The results from 2012 first-years (Figure 13) show that as well as increasing in relevancy throughout university/college careers, the proportion of first-year respondents valuing SD skills as important for their university education has also increased for some skills. For example, first-years in 2012 are significantly more likely to think that 'using resources efficiently' will be relevant than their 2010 counterparts (84.6% n=4750 2010 first-years compared with 88% 2012 first-years (n=3525). Contradictory to this, first-year respondents in 2012 are significantly less likely to see being able to 'act as a responsible citizen globally and locally' as relevant than 2010 first-years (77.9%, n=3123 compared to 79.8%, n=4481).

These findings continue to indicate an opportunity to formalise this demand towards a receptive student demographic.

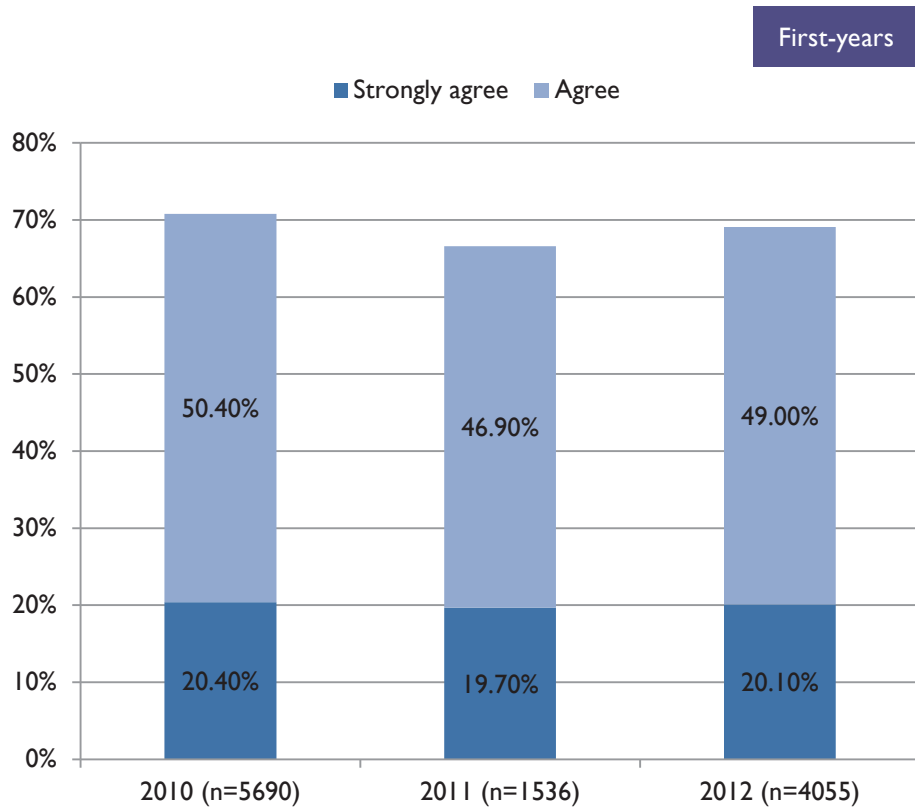
Figure 14. Thinking only of your own personal view, how relevant is it to you that the following skills are developed through your university education?



5.5.5 Preferences for learning in SD

Despite university choice being influenced more greatly by the traditional indicators of quality, such as reputation and teaching, there is a clear demand for universities to support the development of the wider suite of skills associated with sustainability literacy and thereby improving employability (supported by the increase in relevancy shown in Figure 14). Approximately 70% of first-year respondents continue to agree (strongly agree or agree) that universities should be obliged to include SD skills development as part of their courses. There is a significant difference in the responses of 2010 and 2011 first-years, with 2010's first-years more likely to agree that universities should be obliged to develop their students' social and environmental skills (70.8%, n=4029 compared with 66.6%, n=1023). However, this rises again in 2012 first-year responses, on a non-significant basis (69.1%, n=2802).

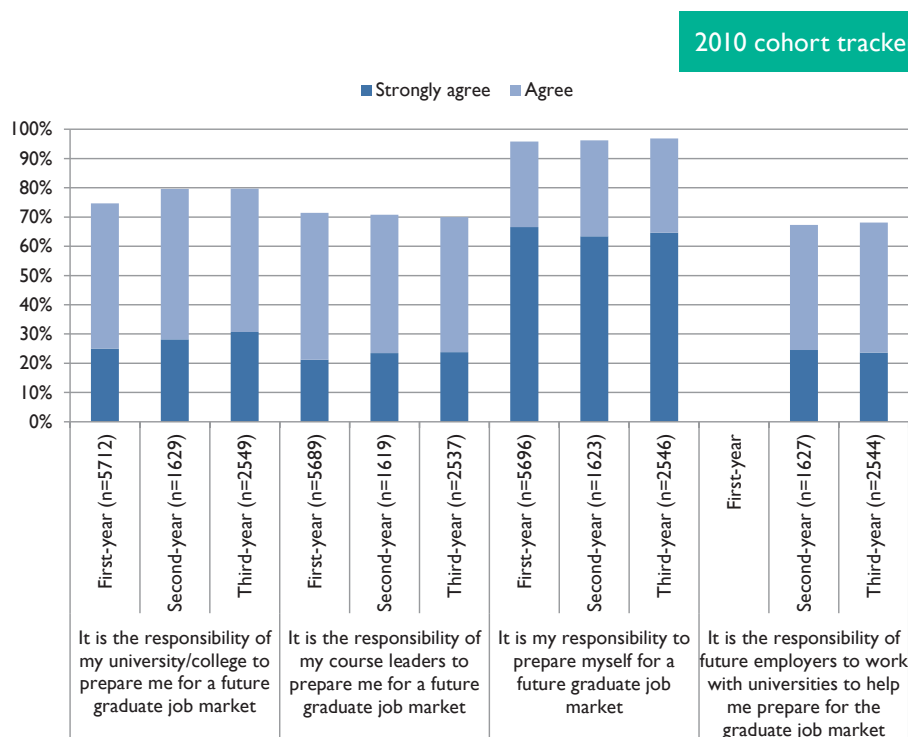
Figure 15. To what extent, if at all, do you agree that universities should be obliged to develop students' social and environmental skills as part of their courses?



Looking at the context of developing skills to prepare students for employment through increasing sustainability literacy, respondents in 2012 continue to agree that their university and course leaders share responsibility for imparting skills and knowledge that will prepare them for the graduate job market (79.7%, n=2032 2012 third-years agree or strongly agree). However, ascription for responsibility continues to be reciprocal with respondents ascribing responsibility for the graduate job market most frequently to themselves (96.9%, n=2467 third-years strongly agree or agree).

Longitudinally, the 2012 third-years continue the trend identified in previous research, in that they are significantly more likely to ascribe responsibility for skills development to themselves than 2010 first-years (96.9%, n=2467 compared with 95.8%, n=5457). The responses from first-years over the course of the three waves of research remain general unchanged, the exception being that 2010 first-years were more likely to ascribe responsibility of job preparation to their course leaders than 2011 and 2012 first-year respondents (71.4%, n=4062 compared with 68.1%, n=1045 and 69.6%, n=2812 respectively).

Figure 16. To what extent, if at all, do you agree with the following statements:



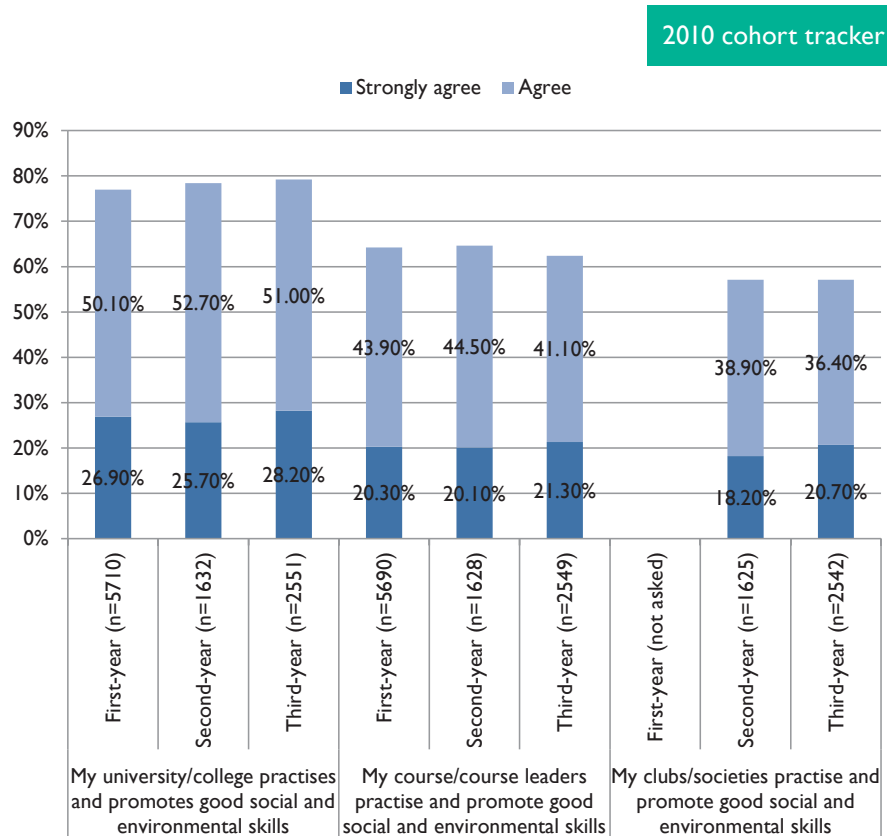
In terms of translating these aspirations to perceptions of their current place of study, a large proportion of respondents in 2012 share the belief that the university they attend practises and promotes good social and environmental skills (85.4%, n=3452 2012 first-years and 79.2%, n=2020 2012 third-years agree or strongly agree).

Tracking respondents throughout their university careers, there is no significant change in perception of the performance of their university on practising and promoting good social and environmental skills (77%, n=4397 2010 first-years, 78.4%, n=1279 2011 second-years and 79.2%, n=2020 2012 third-years). In contrast, first-year perceptions of their university or colleges' action has improved significantly with 85.4% (n=3452) agreeing that their university/college practises and promotes good social and environmental skills in 2012 compared with 77% (n=4397) in 2010. The same findings can also be seen among first-year perceptions of the performance of course leaders and the clubs and societies at their university/college - becoming increasingly positive between 2010 and 2012 intakes.

The contrast in perceptions of 2012 first-years with previous waves of research and other year groups could potentially be seen as an indicator of low expectations rather than a significant improvement in performance. This would require more in depth research to further unpack experiences and viewpoints.

Perceptions of performance of clubs and societies remains consistently lower across all waves of the research (the option was included in 2011 and 2012 surveys). This finding suggests that the informal learning opportunities, identified as important by the 2011 desk review, may be currently under used and has implications for the preference for extra-curricular learning activities described later on in this report.

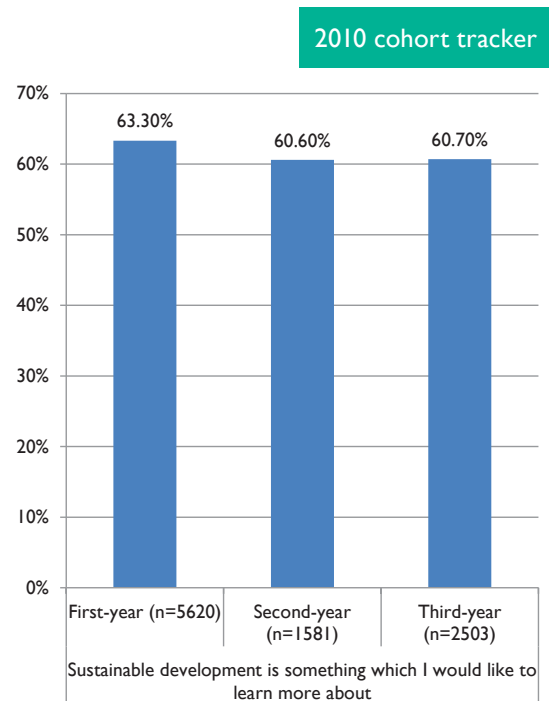
Figure 17. To what extent, if at all, do you agree with the following statements: (statement three not asked in 2010)



Despite these positive responses, the responses to the following question demonstrate the further scope for incorporation of sustainability within university practices and course leadership as three-fifths of respondents in 2012 express a desire to learn more about SD (59.6% n=2362 2012 first-years, and 60.7%, n=1519 2012 third-years). There continues to be no significant change in desire to learn more about SD between year groups which suggests that the capacity for increased coverage remains despite entering their final year at university. Student understanding of sustainability is key to comprehending where coverage can be improved.

In terms of first-year responses, 2012 first-years are significantly less likely to agree that SD is something they would like to learn more about than their 2010 counterparts (59.6%, n=2362 2012 first-years compared with 63.3%, n=3557 2010 first-years). As before, further investigation would be required to assess whether this decrease is due to improved teaching and learning, or a reduction in engagement among 2012 first-years.

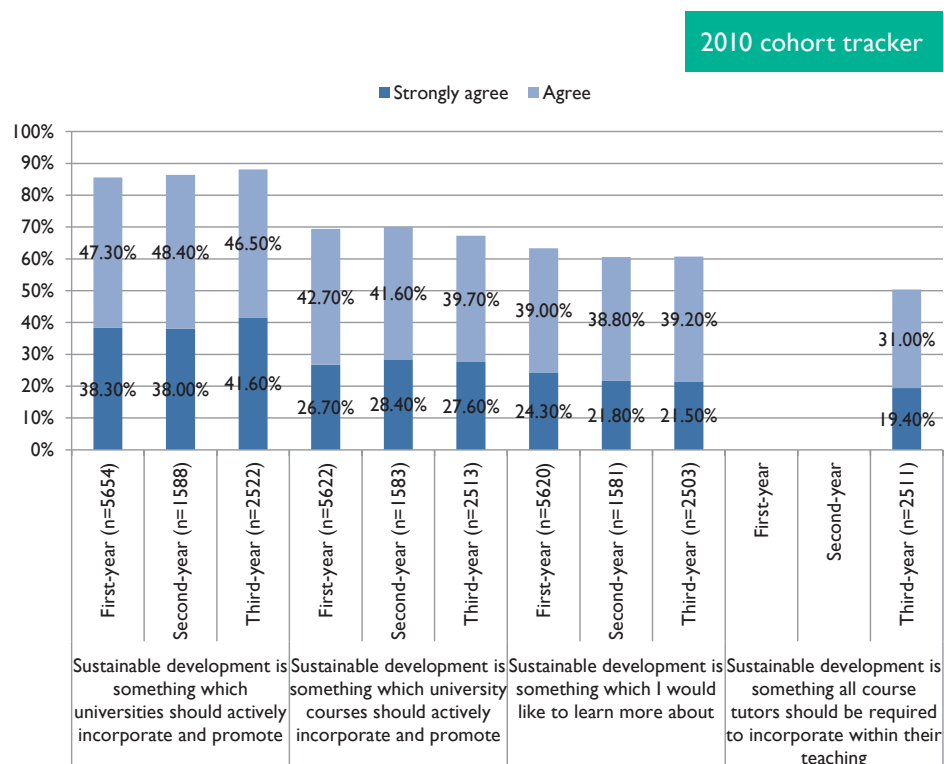
Figure 18. To what extent, if at all, would you say that you personally agree with the following statement:



Within the same question, respondents confirmed their desire for SD to be actively promoted and incorporated by their university with 2012 third-years significantly more likely to agree with the statement than 2010 first-years (88.1%, n=2222 compared with 85.6%, n=4840). This finding corroborates the expressed views on relevance and importance for their time in HE earlier within this report.

An additional statement introduced to the 2012 questioning also revealed a desire for an obligation to be set for course tutors to provide teaching and learning on SD, with approximately 50% of respondents agreeing with the proposition (49.4%, n=1972 first-years 2012 and 50.4%, n=1266 third-years 2012 strongly agree or agree).

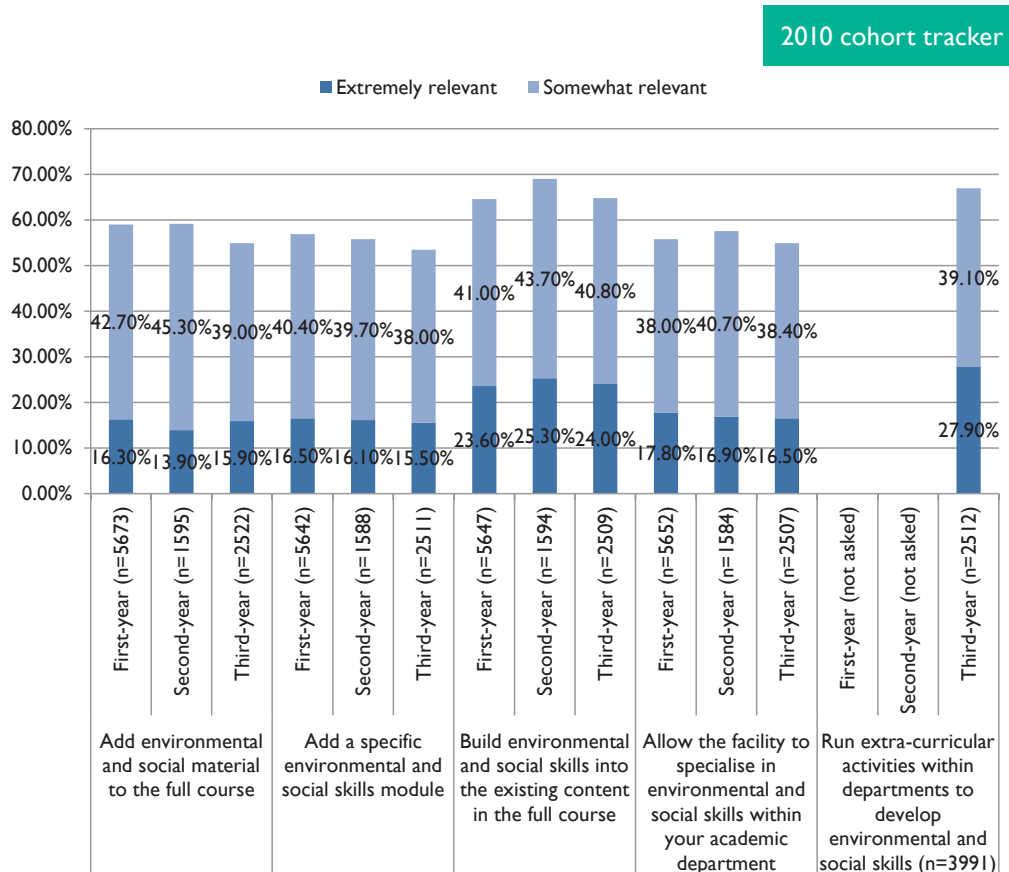
Figure 19. To what extent, if at all, do you agree with the following statements:



5.5.6 Methods of including SD

Respondents in 2012 continue to reflect the responses across both 2010 and 2011 research indicating that they are amenable to the inclusion of skills for SD into their courses, with a preference for sustainability content to be built into existing content rather than creating additional or specialised sustainability modules or courses.

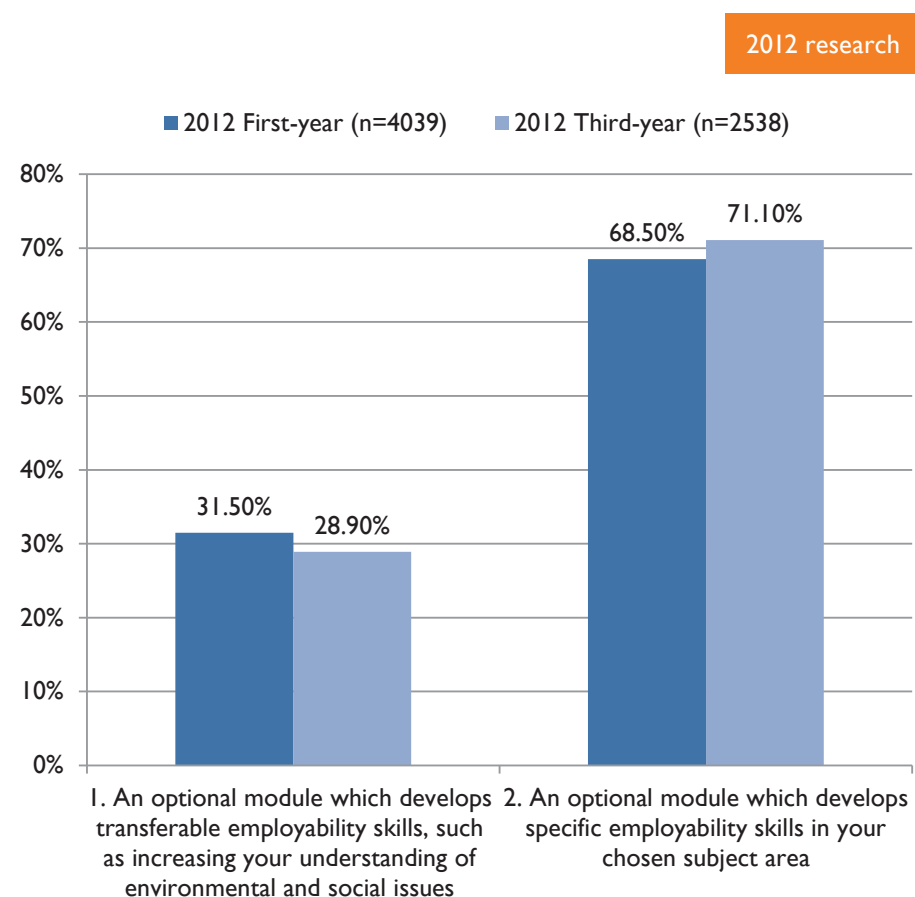
Figure 20. What do you think the most relevant way of including social and environmental skills within your own course would be?



This preference for building environmental and social skills into existing content changes as respondents progress through their academic careers. There is a significant increase in preference for this method between first and second year, and then a decrease between second and third year (64.6%, n=3648 2010 first-year, 69%, n=1100 2011 second-year and 64.8%, n=1626 2012 third-year). There is also a significant decrease in preference for adding environmental and social material to the full course among third-years in 2012, when compared with first-year responses in 2010 and second-year responses in 2011 (54.9%, n=1385, compared with 59%, n=3347 and 59.2%, n=944 respectively). One hypothesis for this change, which requires further investigation, is the potential influence of existing course commitments for third-year students. Many may feel they don't have time within their schedules to fit in extra teaching and learning on SD. This may also explain the preference for sustainability skills to be developed as extra-curricular activities, allowing students to participate as and when they are able (for example 69%, n=2754 2012 first-years and 67%, n=1683 2012 third-years indicate extra-curricular activities within departments as 'extremely' or 'somewhat' relevant).

When unpacking the preferences for teaching and learning further and linking to employability, there is a clear preference among 2012 first- and third-years for employability skills to be targeted at chosen subject areas rather than developing transferable skills, such as environmental and social skills (for example 71.1%, n=1804 2012 third-years would prefer a module for developing skills in their chosen subject area). This shows the importance of understanding student definitions of sustainability (environmental and social skills) and also of enhancing precise understanding of the skills needs and desires of employers by sector to ensure graduates with the necessary attributes.

Figure 21. Which of the following options would you choose:



Sustainability and employability

Key findings

- Matching previous waves of research, skills for SD are overwhelmingly expected to be important for employment with between 80% and 90% of third-years in 2012 ranking the majority of skills as important or very important.
- The more generic skills around adaptability and communication continue to be ranked higher than those overtly related to ethics and the environment.
- Other key skills such as numeracy, business and customer awareness also receive relatively low ranking confirming the need to ensure student perceptions match the reality of employers' needs.
- The vast majority of third-years in 2012 believe they are able to put into action the skills they perceived employers to be looking for; however this reinforces the need to ensure students are correct in their understanding of employer needs and demands.
- Of those who assessed a need for further skills development, completing an internship or work placement was seen as the most appropriate way of doing so.
- In terms of teaching skills for employability, preference for teaching on this subject increases as respondents progress through their university careers over further teaching on their chosen subject.
- Approximately two-thirds of respondents continue to agree that they would sacrifice £1000 from the average graduate starting salary to work in a company with a strong environmental and social record. The proportion of respondents willing to accept this salary sacrifice significantly increases as their university careers progress. A significant increase is also seen among 2012 first-years on the responses recorded from 2011 first-years.
- Two-fifths go on to state that they would be prepared to accept a £3000 salary sacrifice from the average graduate starting salary to be able to work in a company with a strong social and environmental performance. Third-year respondents are now significantly more likely to opt for this salary cut than when responding to the survey in 2010 as first-years. First-years in 2012 were also significantly more likely to accept a lower salary than first-years in 2011 and 2010.
- Social or 'individual benefit' attributes shown by potential employers are more attractive to respondents than overtly environmental or community-focused attributes, with only c.9% first- and third-years in 2012 looking to work for a company that is actively reducing its carbon emissions.

Continuing the findings uncovered in the previous waves of research, skills in SD are expected to be overwhelmingly important for employment.

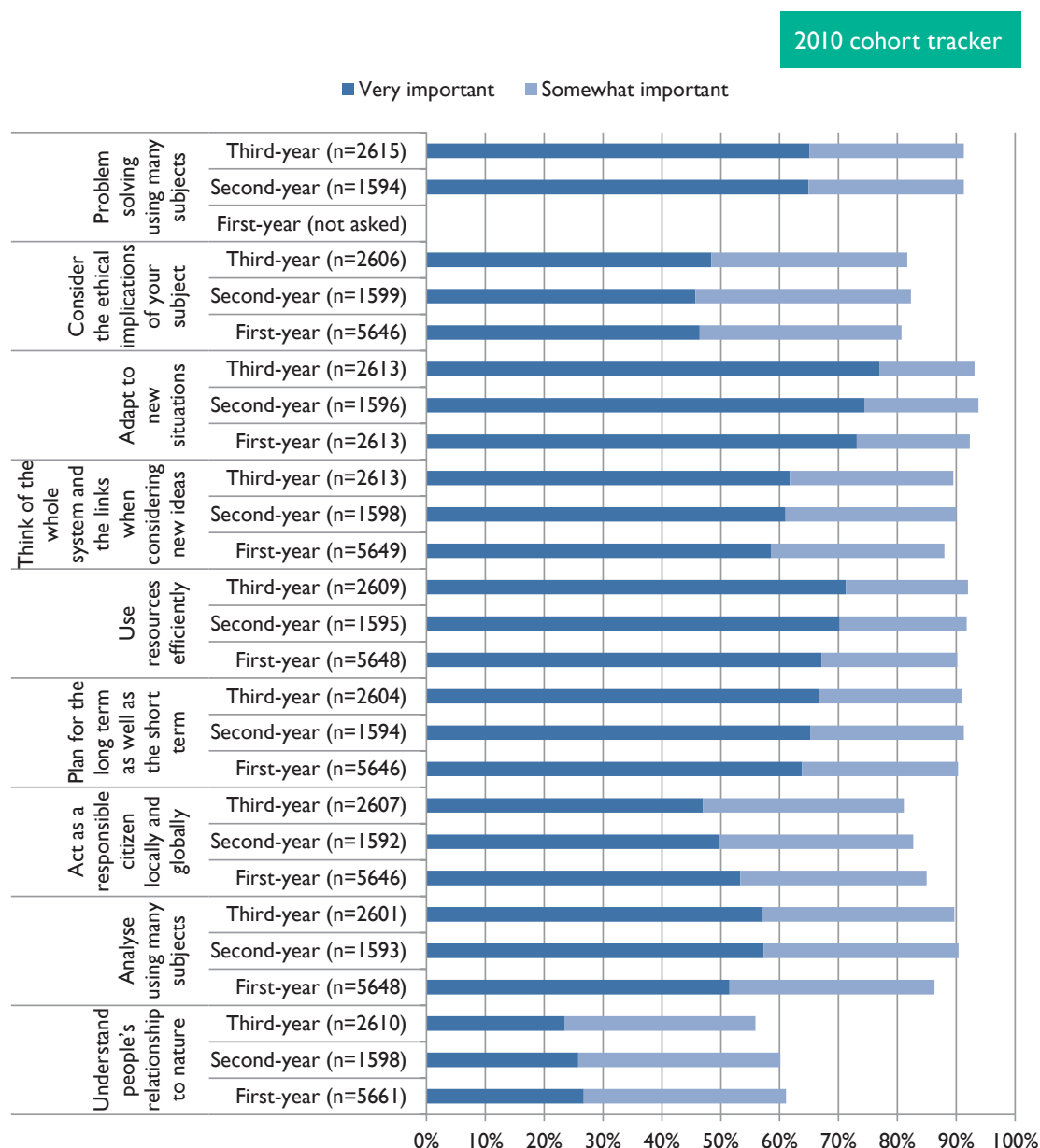
Figure 22 shows that between 80% and 90% of 2012 third-years continue to rank the majority of skills as important or very important in terms of employment. Again the exception is the ability to 'understand people's relationship to nature' which is seen as less important by third-years, continuing a trend seen in their second-year (2011) and first-year (2010) responses (55.9%, n=1459, compared with 60.1%, n=960 and 61.1%, n=3459 respectively).

Continuing analysis of changes throughout their time spent in HE highlighted that the perceived importance for employers of the ability to 'analyse using many subjects' has significantly increased between first- and second-year responses (86.3%, n=4874 to 90.4%, n=1440).

The explicit SD skills however, such as 'understanding people's relationship with nature' decrease significantly in terms of importance for employers between first-years in 2010 (61.1%, n=3459) and third-years in 2012 (55.9%, n=1459).

Comparing the longitudinal first-year responses, only 'acting as a responsible citizen locally and globally' showed any significant difference between 2010 and 2011 first-year cohorts with 2010 respondents seeing this as more important (85% in 2010 (n=5612) compared with 82.3% (n=1517) in 2011).

Figure 22. How important do you think the following skills are to your future employers?

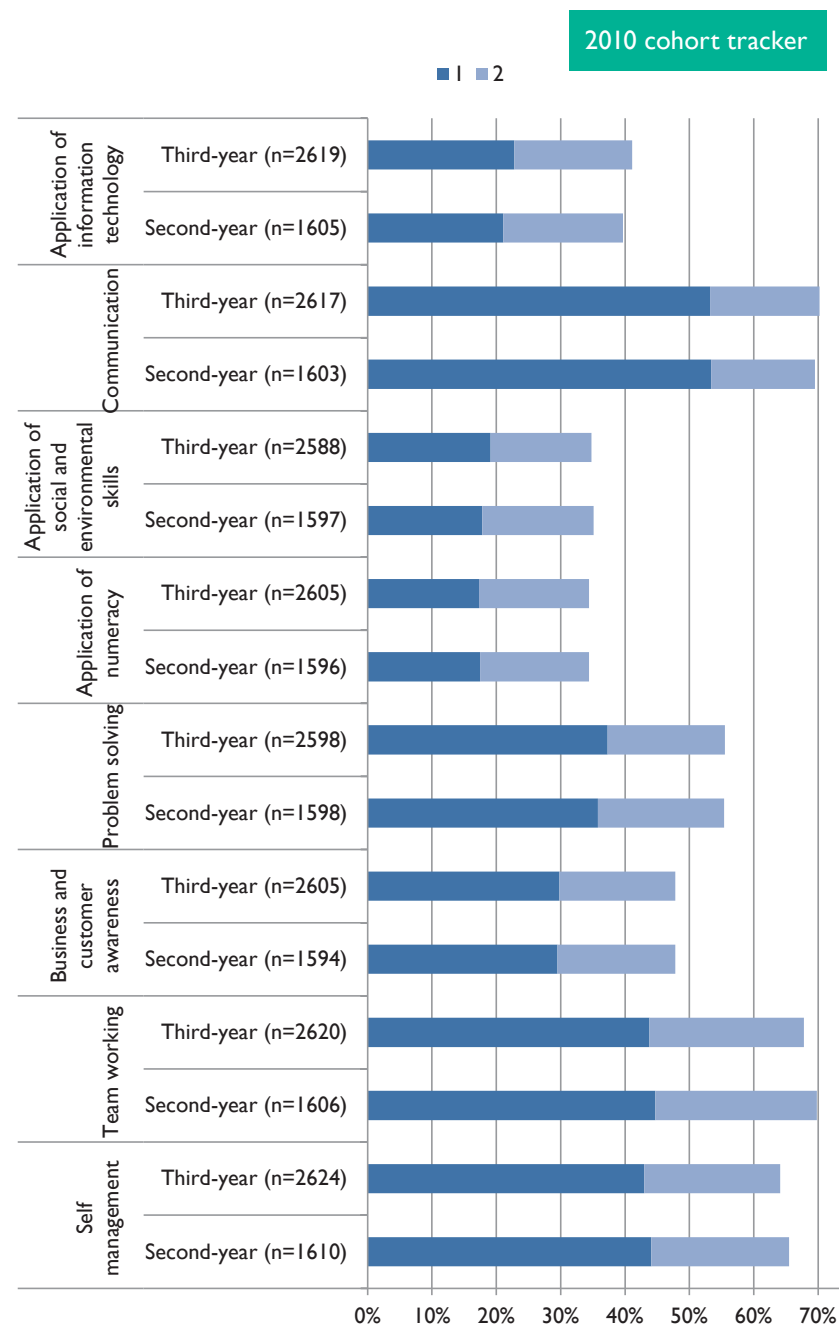


Reiterating the recommendations from previous research, and reflecting the findings of the desk review, there is an opportunity to further explore how this impacts on universities in terms of:

- communication with businesses in order to determine priority skills, if and how they recognise sustainably literate graduates in the short term and how to equip graduates with the ability to adapt for the future;
- supporting employment for the student body in creating a pool of graduates with strong skills for employment;
- attracting and retaining students and securing positive employment figures post-graduation.

The ranking shown above, along with the results below (figure 15), to a more generic list of skills indicates that skills in adaptability and communication are valued more highly than those towards the environment and ethics in relation to employment.

Figure 23. How important do you think the following skills are to your future employers when compared against each other? (1 is the most important)



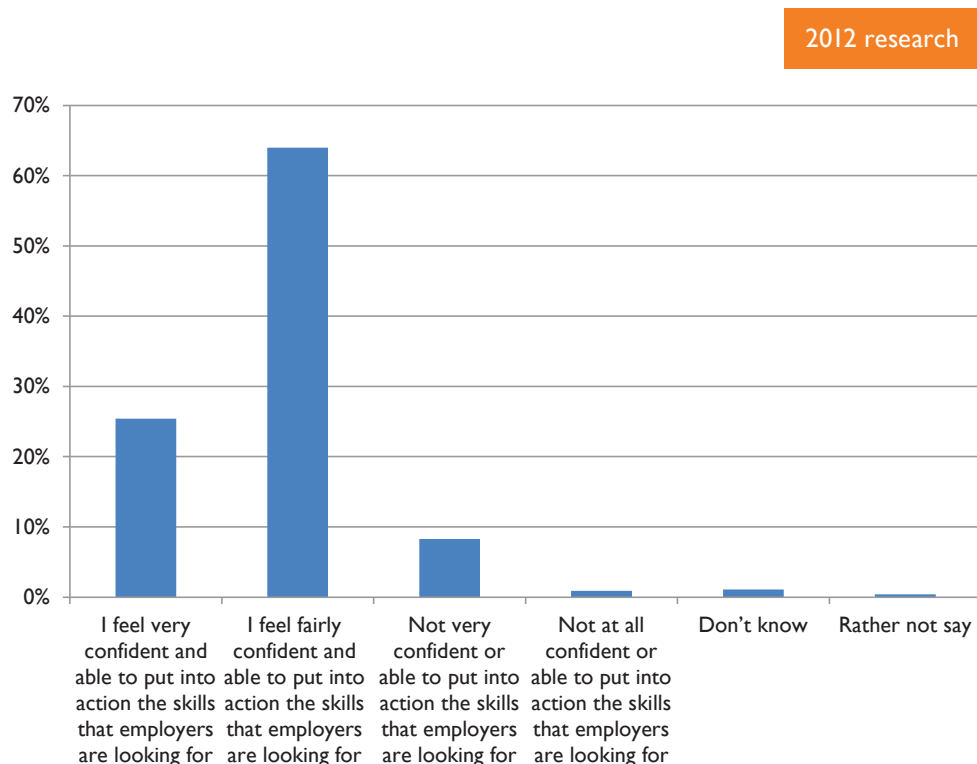
Respondents in 2012 continue the beginnings of a trend uncovered by the 2011 research in that the ability to use social and environmental skills is ranked relatively low in terms of importance. Figure 23 above shows little change as students progress through HE with 35.1% (n=561) second-years 2011 and 34.8% (n=901) third-year 2012 respondents ranking this skillset as 1 or 2/most important.

Other key skills, such as application of information technology (39.7%, n=637 2011 second-years and 41.1%, n=1076 2012 third-years ranked as 1 or 2), application of numeracy (34.4% 2011 second-years and 2012 third-years (n=549 and 896 respectively) ranked as 1 or 2) and business and customer awareness (47.8% 2011 second-years and 2012 third-years (n=762 and 1245 respectively) ranked as 1 or 2) receive relatively low ranking by students again suggesting that further work is needed to ensure student perceptions match with the reality of employer preferences and demands.

5.6.1 SD skills ability

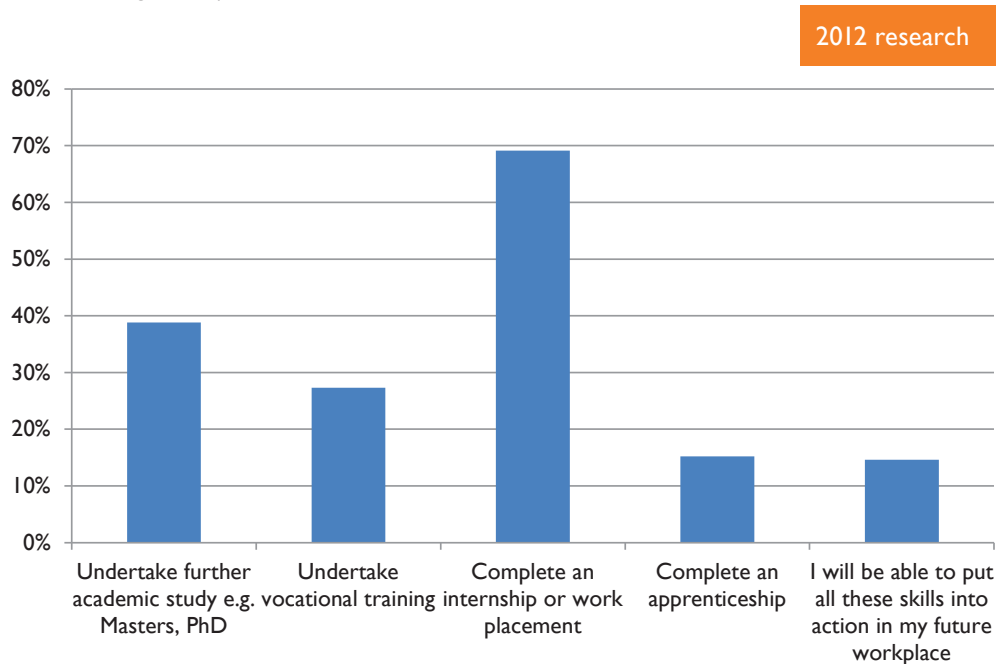
The 2012 research also asked third-year respondents to assess their ability to put into action the skills they perceive employers to be looking for. The majority of third-year respondents (89.4% (n=2265) in 2012 are confident that they will be able to put into action the skills that employers are looking for upon entering the workplace. While on the surface this is a positive result, ensuring students and HEIs have a correct understanding of the skills needed and valued by employers is key given previous reviews have highlighted a disparity between graduate evaluations of their own skills and employers.

Figure 24. In terms of your ability to put your skills into action, which of these statements best applies to you? (n=2534)



In terms of improving skills, those respondents who currently did not feel confident and able to put into action the skills desired by employers believed the two main options to be completing an internship or work placement (69.1% 2012 third-years, n=166) or undertaking further academic study (38.8%, n=93). This finding again reinforces the recommendation made by this research and elsewhere to engage with employers in skills identification and prioritisation.

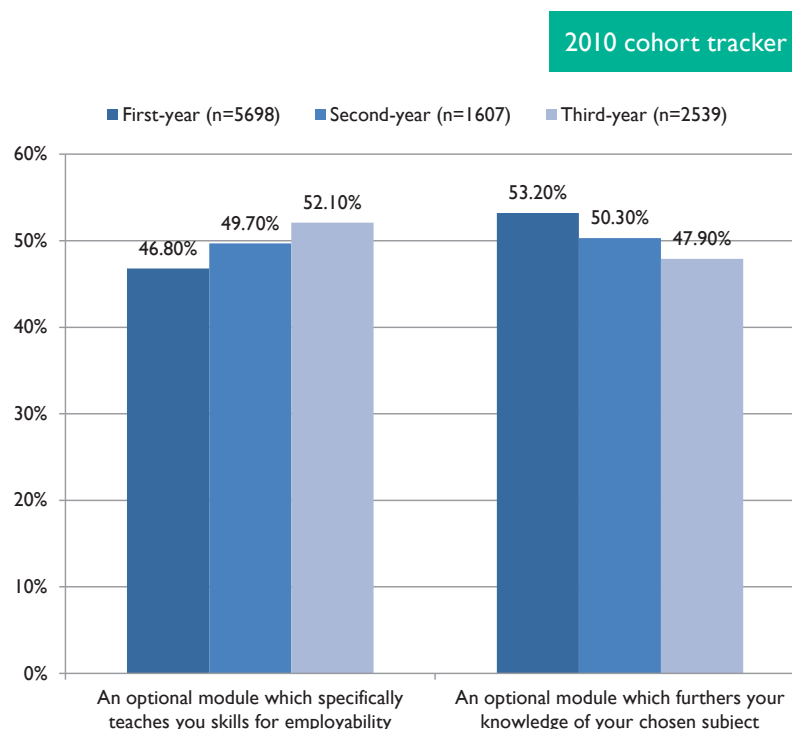
Figure 25. What steps do you think will be necessary to develop these skills following completion of your course? (n=240, those who responded negatively at Figure 23)



Continuing the theme of learning for employability a clear trend has emerged over the three waves of research which demonstrates a shift in focus among respondents as they progress through their university career. Figure 25 shows that preference for an optional module which teaches specific skills for employability is significantly higher among third-year respondents in 2012 (52.1%, n=1323) than among the same year group when surveyed in 2011 (second-years, 49.7% n=799) and 2010 (first-years 46.8%, n=2667).

When comparing responses from first-year students, preference for an optional module which furthers subject knowledge of their chose subject above that which focuses specifically on employability continues from 2010 into 2011 and 2012. In each wave of the research, just over half of first-year respondents indicated a prioritisation of furthering subject knowledge (2010 53.2%, n=3030, 2011 53.1%, n=816, 2012 54%, n=2184).

Figure 26. We are interested in your prioritisation of social and environmental aspects in the future. Please select which option you would choose.

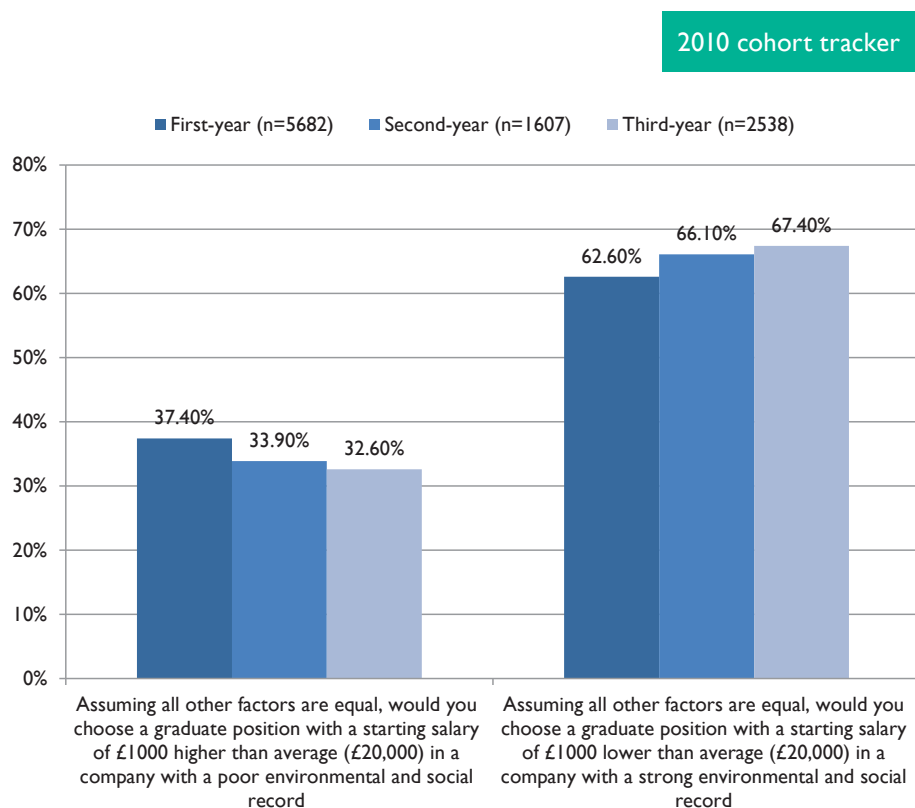


Please note that in 2010 this question was asked prior to the vote on fees, and the 2011 data was captured prior to the first year group to pay increased tuition fees. The 2012 data would suggest that so far, the increased tuition fees have not impacted on first-years' learning preferences, however further tailored research in the future will be needed to assess the long-term impacts.

The previous finding that a role exists for communication of company ethics and environmental performance exists throughout the student journey in 2012. Approximately two-thirds of respondents say they would sacrifice £1,000 from salary to work in a responsible company in alignment with findings from 2010 and 2011.

The proportion of second-year students (2011 66.1%, n=1062) stating they would be willing to make a salary sacrifice is significantly higher than first-year respondents (2010 62.6%, n=2557) supporting the hypothesis that employment becomes an increasing focus for students as they progress through their university career. This is continued into the third-year responses in 2012 with 67.4% (n=1711).

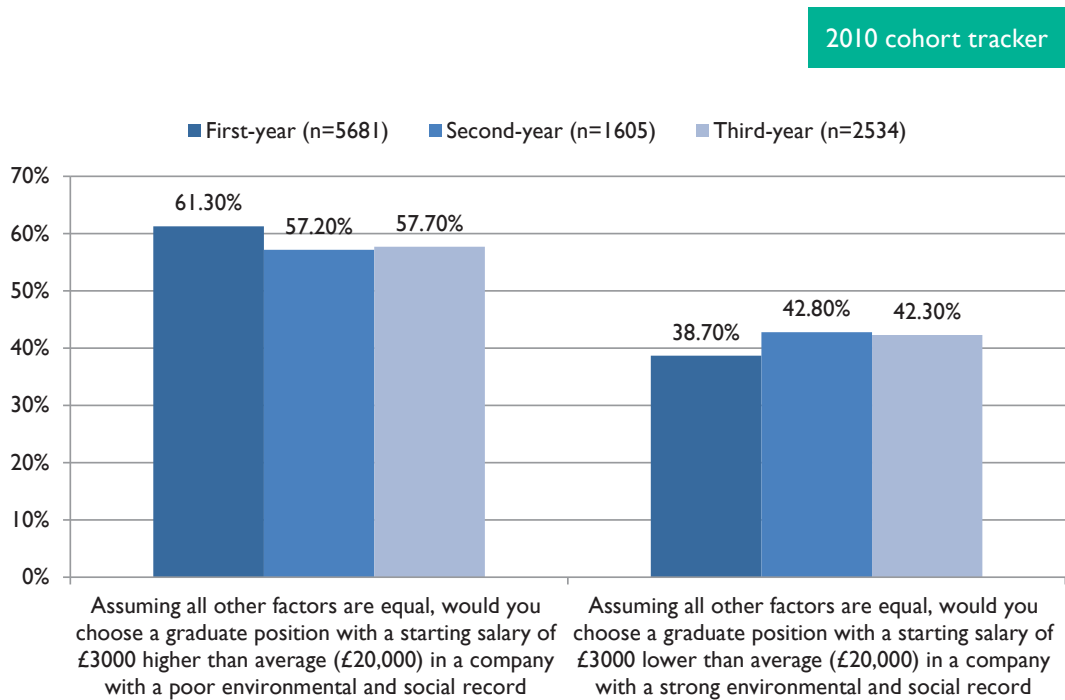
Figure 27. We are interested in your prioritisation of social and environmental aspects in the future. Please select which option you would choose.



In 2012 the choice of a starting salary £1000 lower than average (£20,000) in a company with a strong environmental and social record was also increasingly frequent among first-year respondents (68.2%, n=2761) with a significant increase on the responses from 2011 first-years (64%, n=983). The 2011 report put forward the hypothesis that the increase in tuition fees would have a negative influence on the number of first-year respondents willing to accept a salary sacrifice due to increased concern over loan repayments and debt. This does not seem to be apparent in the responses collected in 2012, although further investigation would be required to verify this. An alternative hypothesis for the responses seen might be the effect of continued levels of unemployment following graduation, with a third remaining unemployed within six months of graduation.¹⁰

The trend is however less pronounced when the sacrifice is increased to £3,000. At this salary point, approximately two-fifths of respondents report that they would still sacrifice £3,000 of their salary to work in an environmentally and socially responsible company (see figure 23 below). These findings add further depth to the research on 'Future Business Leaders' which revealed that while 41% of respondents cited an impressive sustainability record as an important factor when looking at potential employers, 88% would be influenced by the pay and benefits package.¹¹

Figure 28. We are interested in your prioritisation of social and environmental aspects in the future. Please select which option you would choose.



2012 respondents continue the trends emerging in the previous waves of research. Third-year respondents in 2012 are significantly more likely to opt for a starting salary £3000 below average than the same year group responding to research in 2010 (as first-years). The same significant difference can also be seen between first-years (2010, 38.7% n=2199) and second-years (2011, 42.8% n=687) however there is no significant difference between second and third year (2012, 42.3% n=1072).

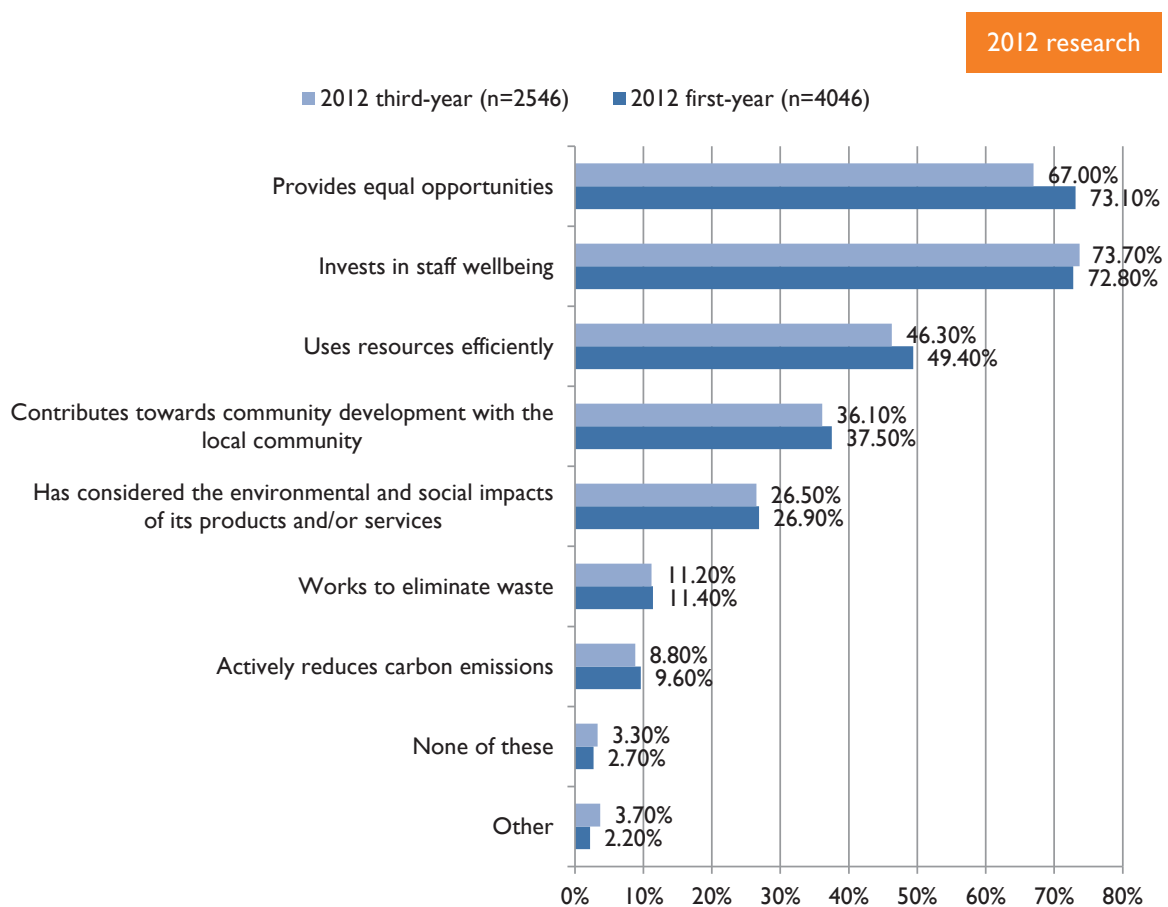
The first-year intake in 2012 also exhibited an increased willingness to accept a position in a company with strong environmental and social performance, with nearing a half of respondents opting for a salary sacrifice of £3000 (45.8%, n=1849). This continues to reflect the trend seen in the previous research with 2011 first-years showing a significant increase on 2010 first-years (42% n=1847 compared with 38.7% n=2198). It is possible that these results are a reflection of an increasingly altruistic population, however, again, it is possible to hypothesise that these results reflect a concern over the possibility of securing a job upon leaving university over and above concerns about salaries. Further research would be required to unpack the finer detail of these findings.

¹¹ Sky (2011) *The Sustainable Generation: The Sky Future Leaders Study*. Results based on research with 751 graduate trainees and recently graduated MBA students and potential middle managers earmarked for leadership positions.

Employer attributes

The 2012 research also contained additional questioning on the desirability of individual environmental and social qualities among potential employers. Figure 29 shows clearly that the 'social' or 'individual' attributes are ranked more highly among respondents than the overtly environmental or community-focused attributes. For example, 73.1% (n=2958) of first-year respondents and 67% (n=1705) of third-year respondents will be looking to work for an employer than provides equal opportunities, compared with just 9% (n=388) first-years and 8.8% (n=224) third-years looking to work for a company that is actively reducing its carbon emissions. Within this, first-years are significantly more likely to place importance on the provision of equal opportunities than third-year respondents.

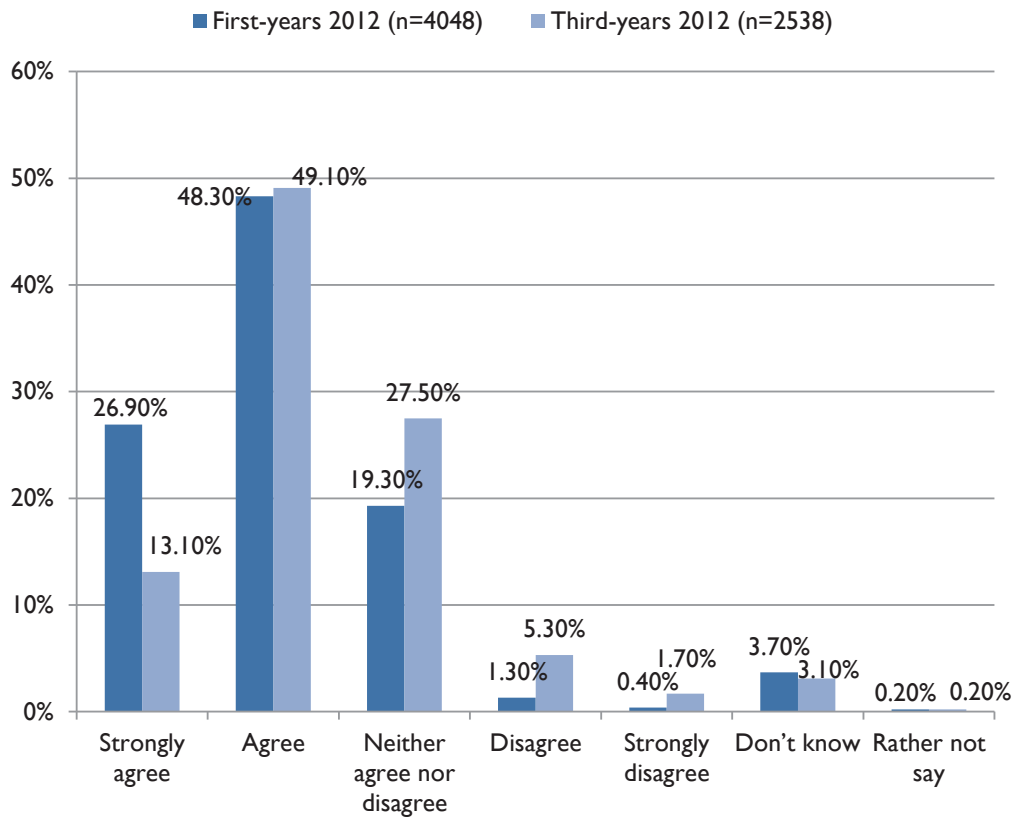
Figure 29. Which of the following attributes will you be looking for in your future employer? Please select the three most important attributes.



In terms of the institution they are attending, the majority of respondents agree that their institutions are preparing them to work for an employer with these attributes, however third-year respondents are significantly less likely to agree than their first-year counterparts (62.2%, n=1579 compared with 75.2% n=3044).

Figure 30. To what extent do you agree that your university/college course is increasing your potential to work for a company that meets these attributes?

2012 research



6. Conclusions and implications

The following chapter provides an overview of the research findings. The first two sections (6.1 and 6.2) present the key trends seen over respondents' careers in HE and across first-year intakes. The remaining sections cover findings from the key themes within the research. Given the continuing similarity between the three waves of research from 2010 to 2012 it is worth reiterating and reinforcing the conclusions that have been presented previously.

6.1 The student journey: from first year to third year

In terms of understanding of SD, the definitions offered by respondents would suggest that there has been no great change in understanding during their time in HE. Translating this into action, respondent intentions towards pro-environmental behaviour peak during the second year. This coincides generally with a move to more independent living, however these intentions decrease in the third year, perhaps associated with increased course commitments. Looking at sustainability skills a similar trend is seen with an increase in the extent to which respondents carry out these skills reported as they move through their university careers.

Expectation for their institution to be actively promoting and incorporating SD increases significantly as respondents progress through HE. However there is no significant variation according to year of study of respondents who agree their institution practises and promotes good social and environmental skills. An increasing desire to learn more about SD into their third year reflects a continuing capacity for increased learning opportunities. Preferences for how these learning opportunities are delivered also change according to year of study, with third-years in 2012 now less likely to prefer building additional content into courses than respondents in their second or third years (although it remains the preferred option overall).

Preference for teaching on employability also increases as respondents advance through their university careers. When considering their options beyond education, willingness to accept salaries lower than average to work for a company with a strong social and environmental performance is significantly higher among third-year respondents than first-year. This applies at both £1000 and £3000 reductions in average salary.

6.2 The first-year experience: Learning over three years

The responses of first-years are fairly consistent over the three waves of the research. On the whole skills for SD continue to be seen as important for graduates in their field throughout respondents' time at university. However, some skills show a significant decrease in their ranking of importance (understanding people's relationship to nature and acting as a responsible citizen globally and locally) with respondents from the 2012 intake less likely to rank these skills important than in 2011 and 2010.

A significant increase was also seen in 2012 in first-year expectations for their institutions to develop students' social and environmental skills, and more positively the current intake are also more likely to believe that their institution is delivering on this by practising and promoting these skills. They are also significantly less likely to report a desire to learn more about SD than counterparts in the 2010 intake.

Future aspirations also reveal a significant increase in first-year respondents willing to accept salary sacrifices to work in a company with a strong social and environmental record. Again this applies to both £1000 and £3000 reductions in average salary for a graduate position.

Further research will be required to ascertain the true influences on these trends seen among the first intake into HE to pay increased tuition fees.

6.3 Existing skills – the influence of FE

Throughout the three years of research, schools have been found to be a key vehicle for ESD. Empirical research found that respondents who had previously attended schools with an integrated sixth-form showed the highest recollection of sustainability initiatives. Responses from third-years in 2012 confirm an initial trend uncovered in 2011 that recollection of FE schemes reduces as respondents have progressed through their university careers. This again calls into question the depth and longevity of impact of sustainability initiatives being run in FE institutions.

Further questions about their time in FE revealed that despite this decline in recall of specific schemes, there is still a strong belief that skills associated with SD are at least being partially covered. While this partiality of coverage continues, the suggestion that potential exists to further increase coverage of SD within the FE curriculum also remains relevant. Further research might also aim to understand better the relationship between scheme and skills coverage recall – for example are skills and behaviours remembered and embedded even when FE scheme specifics are not?

6.4 Understanding, attitudes and behaviour for SD during HE

The definitions of SD provided by respondents in 2012 continue in line with both 2010 and 2011 respondents in their similarity to the definition provided by Brundtland (1987). As was highlighted in 2011, the definitions suggest that student understanding of sustainability is limited to those surrounding nature and ethics, with the wider skill set defined by the research not appearing to be defined as being related to SD. This finding raises two issues, firstly are these definitions a reflection of the patchy coverage of SD skills in FE highlighting a need for curriculum review? Secondly it calls into question the framing of the work surrounding the promotion of ESD – would a focus on and integration with wider and ‘softer’ skills and competencies (ie graduate attributes) be more relevant to the student population? The desk review also highlighted a limited discourse surrounding the ‘green economy’ which may also be perpetuating these definitions and understandings (Barber, 2012).

It terms of pro-environmental behaviour, respondents continue to consider themselves in a generally positive light and in line with behaviour reported in a national UK survey in 2009 (DEfra). Intentions to carry out pro-environmental behaviours during their remaining time at university are also high, in particular where behaviours have become ‘social norms’ such as recycling or saving energy. Intentions surrounding these behaviours peak among second-year respondents perhaps reflecting the move towards increased responsibility and independent living. Contrastingly relatively low proportions of respondents envisage participating in environmentally-friendly schemes, with intention also decreasing as respondents move into their third year. A possible suggestion for this finding is a perception of a lack of time among third-years given a focus on course commitments and final grades. Previous desk reviews have highlighted the potential informal learning opportunities present, a sentiment reflected by respondents in 2012 in their preferences (discussed below) for teaching and learning on SD to include extra-curricular activities.

6.5 Learning and using SD skills in HE

While the traditional attractants of institution and course reputation, teaching methods and entry requirements form the strongest influences over respondents’ choice of institution, up to a third of first-year respondents considered the environmental and ethical performance of their university. This demonstrates a need to demonstrate and communicate actions to prospective students by HEIs. It will also be worth tracking these influencers of choice beyond the first intake contributing increased tuition fees to fully assess the impact of this change.

There is some evidence of respondents increasing the extent to which they carry out skills for SD as they progress through university. In 2012, first-year respondents demonstrate some variation in perceived relevancy compared with 2011 and 2010 intakes, for example a significant decrease in the respondents identifying the ability to act as a responsible citizen globally and locally as relevant to their university education.

Skills for sustainability continue in the most part to be seen as very important for graduates in their field by respondents to the 2012 research, mirroring the views of those participating in 2010 and 2011 research. There are, however, some notable exceptions; the skills of understanding people's relationship to nature and acting as a responsible citizen globally and locally have both seen significant decreases in their rankings of importance both as respondents have progressed through their university careers and also with each first-year intake from 2010 to 2012.

The expectation for their institution to develop SD skills continues with approximately 70% of first-year respondents in 2012 agreeing that 'universities should be obliged to develop students' social and environmental skills', a significant increase on the first-year responses in 2011. Agreement that SD is something their institution should be 'actively incorporating and promoting' also increases as respondents have progressed through their educational careers.

Translating these findings to their current place of study, 2012 respondents agree with those participating in the previous waves of the research in that the majority (c.80%) agree that their institution practises and promotes good social and environmental skills. Perception of their institution shows no significant variation according to year of study, however first-years in 2012 are significantly more likely to hold a positive view of their institutions practices than in the first wave of this research in 2010.

These positive impressions do not, however, translate to the clubs and societies active within institutions, with lower perceptions of practice and promotion of good social and environmental skills across both 2011 and 2012 waves of this research. This suggests there is scope for developing and improving extra-curricular informal learning opportunities.

Despite these positive reports, respondents have consistently shown a capacity and desire to learn more about sustainability despite the good promotion of social and environmental skills experienced at their institution. This continues in 2012, including among third-year respondents suggesting a capacity for increased learning opportunities surrounding SD.

In contrast, first-years in 2012 are less likely to report a desire to learn more about SD than their 2010 counterparts. Further research will be required to assess the reasons behind this change – speculative hypotheses include improved teaching and learning on SD, or conversely a lack of engagement with the subject.

In new questioning introduced in 2012, approximately half of respondents revealed a desire for course tutors to be obliged to include SD within their teaching in addition to action across the institution.

In terms of how this is delivered, a preference for SD content to be built into existing materials continues throughout university careers and across first-year intakes. While respondents are amenable to a range of methods of integrating SD into teaching, third-years in 2012 are significantly less likely to prefer adding additional content and courses – potentially a reflection of time pressures as they near the end of their course. Introduced to questioning in 2012, the option of extra-curricular activities run within departments on SD is also seen as relevant to c.70% of respondents supporting findings in previous desk reviews that informal activities offer a good opportunity to develop sustainability skills. However, findings summarised earlier in this chapter noted that respondents report a reticence to get involved in extra-curricular activities meaning any learning delivered using this method needs to be attractive and well communicated to potential participants.

6.6 Sustainability and employability

Reflecting previous waves of this research, skills for SD are overwhelmingly expected to be important beyond their time in education and into employment with between 80% and 90% of third-years in 2012 ranking the majority of skills as important or very important. As before those skills overtly related to ethics and the environment are expected to be less important than the more generic skills around adaptability and communication.

When ranking other key skills for employment, respondents in 2011 and 2012 rank skills of numeracy and business, and customer awareness also receives low ranking confirming the need to ensure student perceptions match the reality of employers' needs. The low ranking of 'environmental and social skills' compared with more generic, softer skills, despite high ranking of the individual skills identified by this research, also reinforces the need to further investigate student understanding and interpretation of 'sustainable development' compared with the definitions being used by those developing and promoting 'education for sustainable development'. Further attention must also be given to employers in terms of the skills demands being communicated, and the extent to which these match the vision for a 'green economy' across all sectors of the economy.

The vast majority of third-years in 2012 are confident of their ability to put into action the skills they believe employers are looking for – this serves to reinforce the need to ensure students are correct in their understanding of employer needs and demands and aren't acting in false confidence. Those who identified a need for further skills development believed completing an internship or work placement was the most appropriate way of doing so.

Respondents demonstrate a high demand for employability related learning. As might be expected, preference for teaching on skills for employability increases as respondents progress throughout their university careers, and while these skills are seen as preferable to further teaching on their chosen subject they must at least be related to their subject area.

Future-facing questioning again revealed that approximately two-thirds of respondents continue to agree that they would sacrifice £1000 from the average graduate starting salary to work in a company with a strong environmental and social record. The proportion of respondents willing to accept this salary sacrifice significantly increases as their university careers progress. A significant increase is also seen among 2012 first-years on the responses recorded from 2011 first-years; this increase is in spite of an increase in tuition fees which was hypothesised to induce respondents to favour higher starting salaries. The influence of continuing economic problems within the UK on these preferences would prove a useful investigation.

A further two-fifths go on to state that they would be prepared to accept a £3000 salary sacrifice from the average graduate starting salary to be able to work in a company with a strong social and environmental performance. Third-year respondents are now significantly more likely to opt for this salary cut than when responding to the survey in 2010 as first-years. First-years in 2012 were also significantly more likely to accept a lower salary than first-years in 2011 and 2010. Again, the influence of economic downturn and graduate unemployment levels on these responses would prove interesting further research.

Investigating what a 'strong social and environmental performance' by a company might look like revealed that social or 'individual benefit' attributes shown by potential employers are more attractive to respondents than overtly environmental or community-focused attributes, with just under 10% of first- and third-years in 2012 looking to work for a company that is actively reducing its carbon emissions.

7. Recommendations

7.1 Recommendations for FE

Evidence of the contribution of delivering ESD in FE continues, demonstrated by respondents' recall of coverage of a range of SD skills, however recall of the schemes delivering SD in FE has fallen consistently since 2010:

- further research is needed to understand whether the reduction in recall of SD schemes in FE translates to a reduction in understanding and practising of skills for SD;
- it is worth reviewing the coverage of SD within FE to ensure the full definition is being covered and not just the environmental elements reflected in respondent definitions of the term.

7.2 Recommendations for HEIs

- Bearing in mind the apparent mismatch between student definitions of SD and the definitions being used by policy makers is essential when developing and promoting teaching on SD. Further research to understand the mismatch would prove useful.
- The results presented here suggest a demand for employability, and sustainability skills, to be developed in a way that is relevant to their chosen subject area, reinforcing a need for teaching and learning on SD to be targeted rather than generalised.
- Continued investigation of the effect of increased tuition fees, and 'health' of the UK economy on student choices and preferences will be necessary.
- Just as employers have an obligation to communicate clearly to HEIs and students the skills they are looking for, there is also a role for HEIs to assist with interpretation of business skills needs. For example, by using sustainability literate students can? help identify innovative business opportunities in the 'green economy'.

7.3 Recommendations for student organisations

- Student organisations have a role in vocalising demands and expectations from HE in particular surrounding skills development.
- Respondents in 2012 highlighted the role extra-curricular activities could play in developing skills for sustainability. Student organisations could play a crucial role in delivering these activities in partnership with their parent institution.

7.4 Recommendations for policy makers and education agencies

- Policy makers must ensure that skills for SD are de-coupled from the 'environmental' or 'sustainability' sector. *Skills for a Green Economy* (BIS, 2011) notes that all businesses will need to develop generic or softer light-green skills and there is a need to ensure that business is able to identify these skills and communicate their needs to the future workforce.
- Ensuring the green economy agenda incorporates the social and ethical dimensions of SD is essential, with research respondents clearly demanding employers with strong ethical performances. This could also be seen as a tool for engaging both businesses and students/graduates alike in a fuller understanding of SD.

- Given the strong link between sustainability and employability it is important that resources and programmes for teaching and learning developed by education bodies in the arena of employability also include an element of SD, and vice versa.
- Resources produced to support teaching and learning for ESD should consider the full definition of SD to ensure that those subjects not as immediately linked to SD are able to integrate the subject. Again, linking with employability presents a strong potential to ensure the relevance of teaching. Previous waves of this research have also advocated the use of case studies as a means of demystifying content for those subjects who are distant from the more obvious elements of ESD.
- In continuing turbulent times for HE and graduate employment, longitudinal work into the student demands, aspirations and considerations will be key in understanding the impacts of increased financial pressures and ensuring HE is able to meet expectations of both students and their future employers.

7.5 Recommendations for employers and professional organisations

- Employers of all sizes and sectors need to continue, and increase, their engagement with HEIs to improve the communication (and identification) of skills needs expected among graduates. Work placements and internships were identified by survey respondents as being the most appropriate.
- Professional organisations can play a role in identifying skills needs across their membership, and engaging fully with HEIs to ensure these needs are translated to students and graduates.



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