

First-year attitudes towards, and skills in, sustainable development

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Lastly, we acknowledge our thanks to the 5,763 students who took the time to complete our survey without which we would not be able to report with such colour the point of entry understanding and skills in sustainable development (SD).

I. Policy briefing

Findings from a June 2010 purposive desk research study informed an online survey of 5,763 first-year higher education (HE) students, across all four UK member nations to investigate the role of developing skills for sustainability literacy. This is an important and timely piece of research. It follows on from the recent Government announcement outlining a package of sustainability initiatives, demonstrating its ongoing commitment to greener and more sustainable economy.

The overall message from this empirical research is encouraging. Sustainability concerns are significant in students' university choices. First-year students indicate that they are willing to take jobs with a small remuneration sacrifice in order that they are able to work in a socially and ethically responsible company, indicative of a future demand for the skills to project students into this graduate environment. Additionally in the more progressive UK nations where exposure to sustainable development (SD) is greatest within further education (FE) and HE, first-year students place a higher value on skills for SD, believing their role in the university and the graduate workplace to be more significant.

80% of respondents believe sustainability skills are going to be important to their future employers and the majority of first-year students involved believe that it is the role of universities and courses to prepare them for graduate employment. The softer skills incorporated within sustainable development are consistently of paramount importance to graduates, regardless of course, university type or UK nation. Students and policy-makers alike agree that these skills should be delivered through a contextually sensitive reframing of curricular content. It is recommended that these skills broadly mirror that of the Melbourne Model

Following public sector investment into policy for education for sustainable development (ESD) across the UK, the NUS was commissioned by the Higher Education Academy (the HEA) to conduct desk and empirical research into first-year university attitudes to, skills in and aspirations for sustainable development in order to ascertain the sustainability literacy of today's students. This work is extremely pertinent in the context of the increase in tuition fees within HE, which may impact the method by which future students select their higher education institutions (HEIs), and of increased youth unemployment and an employer demand for employability skills.

Structured desk research was undertaken to understand (a) existing policy; (b) to gain insight into student attitudes following further education; and (c) to inform bespoke empirical research. This desk research highlighted a baseline of disjointed

delivery of skills for sustainability literacy, though with some excellent case studies in FE and HE, highlighting a need for a national standard.

The research found that ESD was considered by many practitioners to be a nebulous concept with a need for a nationally accepted working definition to incorporate the five core areas of sustainable development: living within environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly. Additionally agreement of a standard assessment procedure will allow for an understanding of progress and impact on the HEI. Additionally, Scotland and Wales lead the UK in understanding the impact of embedding skills for sustainability literacy with national baselining studies completed.

It is therefore recommended that a national working definition of sustainable development and its component aspects are promulgated to enable practical progress to be made and measured. It is suggested that the following definition of SD in HE, used by the 2008 HEFCE Strategic Review, is adopted as a starting point, with subsequent opportunities for review in the light of developing experience and knowledge:

Teaching (or research) that is significant for sustainable development will include a significant element related to either or both of the natural environment and natural resources, PLUS a significant element related to either or both of economic or social issues.

Furthermore it is recommended, in the light of student demand, that a toolkit is developed from the outstanding foundations laid by many academics to facilitate HEIs in incorporating SD within curricula. To this end, it is proposed that successful practice in Wales is extended. This would involve mandatory senior management group representation at a national forum, which would also include representatives from the graduate employment sector.

Furthermore these fora would benefit from regular liaison with the graduate employment sector to support their increasing need for sustainably literate graduates, their need to define these skills and support and fund the progression of these skills throughout higher education.

In the context of a tumultuous time for higher education and a difficult graduate job market, longitudinal work into the value of SD in HE is essential. This research will provide early feedback on the impacts of increased financial pressures and on the consequences of changes in the national inequities in financial support for different subjects. This information will be needed to ensure that higher education is able to meet demand from students and employers.

2. Executive summary

Research into first-year attitudes towards, and skills in, sustainable development was conducted in 2010 as a two-phase study encapsulating purposive desk research, which informed an online survey conducted in October 2010, gaining 5,763 respondents.

Respondents were first-year students in higher education who had not taken more than one year away from formal education and were taking their first degree.

Desk research indicated:

- some excellent case studies across the member nations account for only a minority of FE colleges and higher education institutions;
- ESD is considered a nebulous concept; a nationally accepted working definition is required;
- employers anticipate a need to employ staff with skills for sustainability literacy in a future workplace;
- delivery of education for sustainable development is disjointed at a national level;
- a standard assessment procedure across the four member nations will allow understanding of national progress;
- communication of the tangible benefits of inclusion of SD in curricula is necessary to secure national buy-in in FE and HE;
- student attitudes towards SD have not been extensively covered; there is a national need to understand student demand;
- Scotland and Wales lead the UK in understanding the impact of ESD with national baselining studies completed.

This informed the empirical research, which demonstrated:

- schools are the key vehicles of sustainable development schemes and awareness of sustainable development schemes is up to five times more likely in first-year students who have come from a sixth-form attached to a state school than those who have come from a standalone sixth form college or private school;
- the majority of respondents believe that skills for sustainability literacy were at least partially covered during their time in further education;
- with the majority of students reporting conducting skills for sustainability

- literacy at least sometimes, further work remains on understanding how students choose to conduct these behaviours;
- variation in skills and attitudes differ only slightly depending on type of FE institution attended and course studied;
 - understanding of SD as a concept is good, although in practice most respondents only focus on the environmental dimension of sustainability;
 - overwhelmingly, skills in sustainable development are viewed as significant for employability and over 80% of respondents believe these skills are going to be important to their future employers;
 - respondents placed high value on many of the aspects of sustainable development for use in HE in relation to increasing their ability to perform well in their course;
 - sustainability concerns are significant in students' university choices;
 - the vast majority felt that sustainable development is something universities should actively incorporate and promote;
 - opportunity exists to state the case for a contextual shift for curricula;
 - 65% of respondents believe that sustainability skills should be delivered throughout the curriculum rather than through a separate module;
 - 63% of respondents would sacrifice £1,000 from their salary to work in a responsible company;
 - skills in sustainable development are slightly more relevant to students from Scotland, where there is a history of national policy in ESD.

These findings inform recommendations targeting pro-vice-chancellors, Government officials, students' unions and funding councils:

- An online resource for those delivering curricula should be made available to improve the baseline skills and knowledge of students in HE.
- Pro-vice-chancellors should consider adopting the components of the Melbourne Model to support a holistic delivery and unified understanding of the skills for sustainability literacy within an institution.
- Partnership with business will raise awareness of the employability significance of skills in sustainable development among students, helping SD gain further foothold within the curriculum.
- A resource, utilising case studies for contextual reframing of existing courses will be well received among those responsible for curricula and delivery.

- Senior management support within universities is essential and a mandate such as that in Wales for sustainability champions from senior management groups at each university will support the formation of a national forum to progress thinking and delivery of the sustainability literacy agenda.
- Acceptance of an interim working definition of SD is essential, with the HEFCE working definition recommended to make the concept more actionable.
- Media and sector support of initiatives is essential.
- An important need exists to understand the impact of tuition fees on student aspirations and expectations of the role of higher education.
- It remains to be understood whether 'price of course' translates as perceived indicator of value or whether 'unique identifiers of university' will come to the fore should courses be priced similarly nationally.

3. Background

3.1 Context

There are currently 4.6 million students in FE and 2.3 million students in HE in the UK and nearly 1 million of the 2.5 million unemployed are young people. A need exists to consider shifting the curriculum to meet the needs of graduate employers. The burgeoning field of education for sustainable development is of increasing relevance to both FE and HE institutions in response to the Government's vision for a low-carbon economy, as set out in *A carbon reduction target and strategy for higher education in England* (HEFCE, 2010). Perhaps more directly, HEIs are under increasing scrutiny regarding both direct and indirect carbon emissions through new policy drivers governed by HEFCE.

Recent work has focused on the incorporation of teaching and learning strategies that include sustainable development within FE colleges (LSC and ESD Consulting, 2009). However, the incorporation of ESD in HEIs has only been nationally consolidated beyond the FE setting in Wales in an external audit of Welsh curricula (SQW consulting, 2009), which was further reviewed by the HEA (2009). An understanding of the impact on the aspirations of students to develop skills in SD beyond HE and into employment as a direct result of the student experience within FE is limited. A twofold need exists to further understand the broad context of HE policy and potential future HE policy in ESD and existing student aspirations, attitudes to and skills in ESD.

Additionally, the implications of the Browne review and the December 2010 vote to increase student tuition fees will shape the demands of students into the future. A dominant STEM (Science, Technology, Engineering and Mathematics) theme may develop commensurate with the continued funding of these courses. Universities will react to student needs in a demand-focused environment and this may well be what is intended. However, if universities have imperfect and/or incomplete information about the nature of student demand, or if that demand is itself formed without reference to major long-term national commitments such as that to SD, then market failure will occur, and the outcome, in relation to graduate skills, will be suboptimal from the perspectives of students, employers and policy-makers.

3.2 History

The HEA commissioned a report in 2007 into employable graduates for responsible employers, conducted by StudentForce for Sustainability (Cade, 2008). Key conclusions

indicated that HE students and graduates are increasingly aware of a growing 'green economy' and that an expectation exists for universities to take on social and environmental responsibility. Recommendations to the HEA included advice that SD and corporate social responsibility (CSR) on campus was linked with teaching and learning in order to enhance the supply of graduates into sustainable and socially responsible employment.

In order to connect this recommendation with curriculum, it is essential that the wider picture is understood. An exploration of key skills for a 'sustainable, low carbon and resource efficient economy' is currently being conducted by the Learning and Skills Council in order to better understand future policy needs to encourage a transition to a low carbon and resource efficient economy. Regular round table events, attended by key national bodies, including colleagues at NUS, the Department for Energy and Climate Change (DECC), the Department for Business, Innovation and Skills (BIS), the Trades Union Congress (TUC), the Department for Environment, Food and Rural Affairs (Defra) and the Learning and Skills Council (LSC) have identified key issues in the inclusion of ESD within FE colleges. Leading thinkers in ESD highlighted:

- employers are not embracing change by explicitly demanding low carbon skills;
- the skills system is unprepared to support the development of existing skills;
- there exists a need for a national holistic approach with leadership and delivery joined up between sectors. (LSC, 2009)

Therefore a distinct need exists to communicate the value of skills in education for sustainable development within higher education and among graduate employers in order to create a conjunction of graduate education, employer demand and government policy.

Historically, the approach to ESD has tended to be disparate; there exists a wide portfolio of case studies in ESD in both FE and HE, which have been recently consolidated in a report conducted by LSC and ESD Consulting for the Environmental Association of Universities and Colleges (EAUC) (2009a, 2009b) and the SQW consulting review of curricula in Wales (2009). Commonalities exist between many, and there is much to inform future policy.

3.3 Research value

The connection between ESD policy within FE colleges and that taught in HEIs has been historically underexplored. There is a key need for an understanding of the policy required in order to enhance our understanding of the transition between

further and higher education. In addition, policy must be further informed by a broader understanding of existing attitudes and skills in ESD, further to (unpublished) work conducted for HEFCE among HE students in 2007 by the University of Bath.

This research builds on historical work conducted by the HEA who are rapidly building a broad and colourful evidence base. The report is widely applicable to many national stakeholders in ESD, including the NUS, the Department for Energy and Climate Change (DECC), the Department for Business, Innovation and Skills (BIS), Trades Union Congress (TUC), Department for Environment, Food and Rural Affairs (Defra), the Learning and Skills Council (LSC) and national higher education funding councils. Conducting research into student attitude and skills by nature has forged wider national partnerships, which in the context of a number of round tables currently underway in the UK will assist in the consolidation of national opinion, and allows the HEA to make tangible and measurable recommendations for future policy.

NUS and its sister company NUS Services are a confederation of 600 students' unions, amounting to more than 95 per cent of all higher and further education unions in the UK and representing the interests of more than 7 million students. The findings of research into ESD on behalf of the HEA and the successful partnership with StudentForce for Sustainability in itself will accelerate students to get green jobs at the end of their degrees. This is of high relevance in the current economic market. An understanding of current attitudes to and skills in ESD and stated aspirations for ESD for employment will directly benefit the NUS in terms of informing campaigns and strategies to assist young people in preparing for a growing low carbon economy.

As such, this existing first-year student skills and attitudes research falls at an extremely pertinent time in the development and consolidation of ESD within HE. NUS Services envision that the partnerships further developed through this research will strengthen and develop those of other leading stakeholders in ESD.

4. Aims and objectives

4.1 Project aims

The overarching aim was to use a two-phase process, firstly using existing research to understand the state of play and secondly using this understanding to inform original empirical research to inform a report. This report included recommendations to the HEA on current skills and attitudes to ESD in light of historical, current and likely future policy. This aim was broken down into five broad key objectives:

1. 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.
2. To review historically (post 2005) the effect of SD in relation to student attitudes and skills within HE.
3. To qualitatively consider the likely policy, skills and attitudes in ESD within the UK over the next five years.
4. To engage with a representative sample of first-year HE students from a wide number of HEIs within the UK in order to understand:
 - a. existing skills and knowledge;
 - b. attitudes to SD;
 - c. unmet needs in SD.
5. To produce a report including recommendations to the HE sector in order to enhance ESD in terms of meeting student needs through creation of sustainable policy.

4.2 Research objectives

The broad aims and objectives were broken down to ensure that research methodologies could meet core strategic metrics. As such the research objectives were articulated as below in order to reflect the objectives to be met through desk-based research and ensuing empirical research.

Desk-based research objectives



- To provide a wider policy context for SD in schools in the UK with a key focus on advances made post 2005.
- To illustrate existing policy with short case studies indicating the principal initiatives for SD in schools in the UK, based on existing research.
- To understand historically first-year students' skills and knowledge in relation to SD based on existing research:
 - broad segmentation of existing datasets may be required to meaningfully inform original empirical research as part of this project.

Empirical research objectives

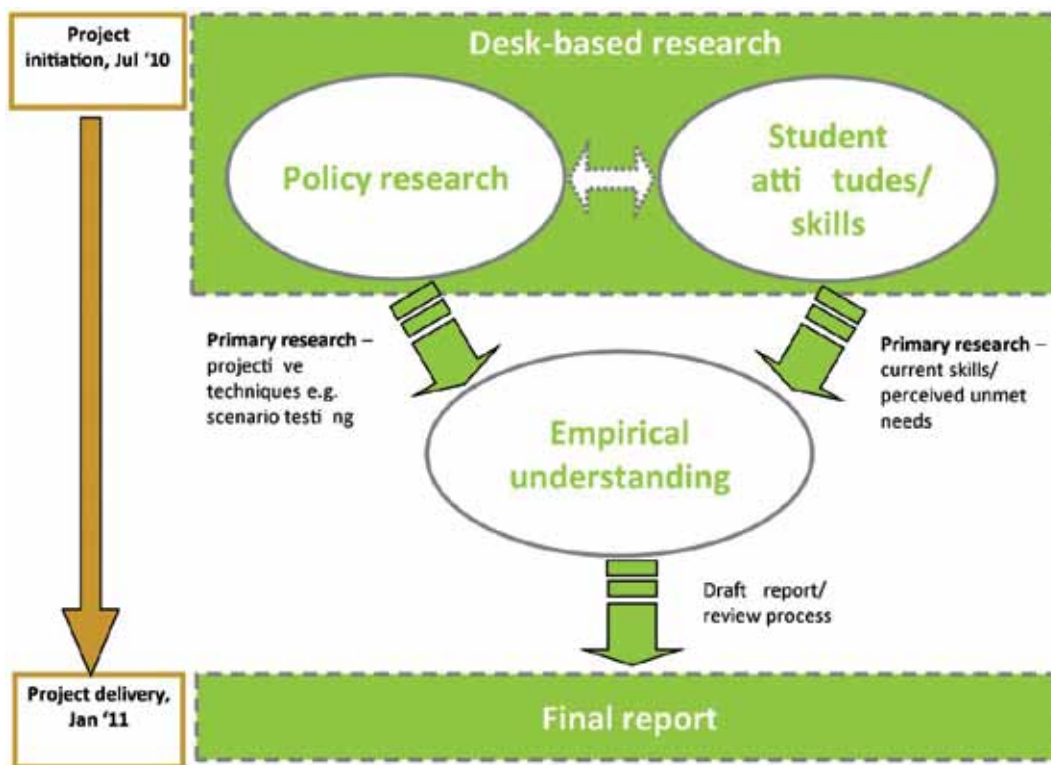


- To use primary research to determine first-year students' understanding of and attitudes towards SD issues with a view to understanding how this has changed in the recent years.
- To understand stated aspirations to study SD and gain insight into the degree to which first-year students in higher education feel that these aspirations are being met.
- To understand existing provision and interpretation of ESD and any stated unmet needs in ESD through empirical research.
- To use the empirical research to clarify what measures HEIs could take to meet stated unmet needs in relation to aspirations to study SD and improvements to existing provision of ESD.
 - To consider the likely skills and knowledge of students over the next five years through empirical projective techniques and analysis through mapping of historical attitudinal shift.

5. Research methodology

A two-phase methodology was conducted to provide informed primary research materials; a desk-based research period reviewed existing policy-based research and existing research into student attitudes and skills. This research was then analysed thoroughly to inform the empirical understanding, which took the form of a national online survey. These two phases are demonstrated in Figure 1.

Figure 1: Project flow



A project steering group consisting of representation from the HEA, NUS, NUS Services, University of Bath and StudentForce for Sustainability met on three occasions to discuss:

1. project set-up and methodologies;
2. initial empirical research findings and reporting strategy;
3. emerging conclusions and policy strategy.

5.1 Desk research

In order to provide the holistic foundations for the empirical work and as part of the robust analyses, this project saw two strands of desk-based research covering:

- existing publications and datasets on student attitudes, skills, unmet needs and perceived wants;
- recent historical policy (post 2005) in ESD.

The project sought to weave together the discrete strands of research and policy in the field of ESD. Desk-based research was rationalised and included work conducted (although not exclusively) by:

- Forum for the Future, StudentForce for Sustainability, HEFCE, Business in the Community (BITC), LSC, TUC, DECC, BIS;
- additionally, relevant private consultations, for example the work conducted by ESD Consulting Ltd, were included in this stage.

The HEA were provided with a written record of resources used and short summaries of these resources, presented in tabulated form (Appendix 1).

This desk research was analysed and delivered to the HEA in the form of an interim report (Appendix 2).

5.2 Wider national partnerships

During the period of desk research, key partners in ESD policy were consulted in forming a picture of the current state of play.

- England:* Throughout this project NUS and NUS Services consulted with members of the HEFCE SD steering group.
- Wales:* NUS Wales and NUS Services liaised with the Welsh Network ESDGC and the Welsh Assembly Government, alongside local institutions.
- Scotland:* NUS Scotland and NUS Services consulted with the Scottish Funding Council and core stakeholders from local institutions within Scotland.

In addition, novel partnerships were forged with local institutions through the promotion of this project through HEA electronic communications.

5.3 Empirical research

The desk-based research outlined in Section 7.1 was used through consultation with the wider steering group to inform empirical methodologies to successfully capture current student attitudes and skills in sustainable development following the development of five core recommendations for the empirical research:

- understand student attitudes to sustainable development issues;
- understand student definitions of sustainable development;
- explore aspirations towards ESD;
- identify student attitudes towards potential future policies to include SD within the curriculum;
- examine student awareness of the future green economy and skills needed.

The desk-based research was also used to develop discrete choice projective methodologies to deliver novel feedback surrounding student attitudes to likely future outcomes in SD.

Empirical research was run via an online survey, applying quantitative methodologies to measure attitudes and skills. These methodologies were robustly constructed through consultation with key stakeholders and were aligned with a number of existing research techniques in order that the research not only yielded novel data, but allowed for alignment with related datasets, such as that by StudentForce for Sustainability (Cade, 2008).

To understand attitudes and skills, key skills were determined during the desk research stage and through consultation with our wider partnerships. These were used as key indicators of the core skills in sustainable development: living within environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.

The final survey materials can be found in Appendix 3.

5.4 Recruitment

The NUS Extra mailbase was used to provide access to 35,000 first-year students who were targeted with an HTML email, which received 33.6% unique opens and 20.5% unique clicks; the survey was further promoted on the NUS website.

Recruitment was further supported by NUS attendance at freshers' fairs at a representative selection of HEIs, selected in relation to their demographics, specifically: size, range of courses, typical socio-economic background of students, geographical locations and degree of existing commitment to sustainable development.

Promotion at these universities used a variety of methodologies including 'in person' promotion, electronic via student mailings and newsletters, and paper materials at freshers' fairs within students' unions (see Appendix 4 for examples of the promotional materials).

6. Implementation

This work was run centrally from NUS Services, led by the Research Manager, a specialist environmental researcher. This project was reliant on drawing upon the expert skills of the wider steering group, and the team was kept regularly informed via weekly progress updates and steering group meetings to coincide with project milestones.

6.1 Desk research

Core documents for inclusion in the desk research were suggested within the bid and agreed within the first steering group meeting; however, to maximise the value of the expert steering group, a consultative phase was conducted in order that core documents from all member nations were considered within the literature review phase. Time frames did not permit for a systematic review, as such literature searches were purposive and targeted to ensure absolute relevance for development of an online survey.

Once a document list had been finalised, the results were tabulated and categorised. As part of the review process, these documents were summarised into a summary table (see Appendix 1). Consolidation of findings was then undertaken within NUS Services and a working review document with conclusions and recommendations was circulated to the full team for review and comment (Appendix 2).

6.2 Empirical research

The output of the desk research included core recommendations for the empirical research, all of which were used to inform the final materials. The flow of these materials was broadly as proposed within the research bid; however, verbatim inclusion of keystone questions from core documents included within the desk research to allow for comparability between datasets was afforded.

At the request of the first steering group meeting, a long list of questions was circulated to the steering group based on the desk research and broader stakeholder consultation across the four member nations to ensure that materials would be relevant, pertinent and inclusive. This long list was refined to 34 core questions to fit within the ten-minute survey time frame proposed at bid stage.

A promotion strategy was created alongside these survey materials. The project was allocated its own web address (now removed to prevent first-year students attempting to complete the survey – archived versions available on request) and a number of materials were designed to cover promotion:

- an online banner was created and posted on the front page of the NUS website;
- a branded HTML email was sent to 35,000 first-year students;
- local institutions were given the opportunity to promote locally through appropriate means, including:
 - students' union weekly mailings;
 - 'in person' promotion;
 - advertising on university resources e.g. student dashboards etc.

The survey was incentivised with a £1,000 cash prize draw.

It had been anticipated at project tender stage that universities would be able to achieve representative samples through local promotion and 22 universities committed to reaching this target; however, only five of these institutions were able to create this representative sample for a variety of reasons:

- universities have limited power in influencing students to participate in surveys; success arose through integration of university and students' unions to create student-focused promotions;
- the first term of the academic year is extremely busy and staff resources are limited;
- cannibalisation – occurrences of concurrent surveys in place in some institutions led to prioritisation of some surveys over others.

Despite this reduced success at a local level, 5,763 responses were gathered nationally with resounding support from many local institutions and encouragingly high level backing within institutions. Grouping of university types is applied in the analysis to highlight differences, if any.

A second steering group meeting was held to discuss the initial findings of both phases of research in the context of the emergent policy on student fees, before a final review meeting to discuss emerging conclusions and recommendations and the most appropriate approach to a policy briefing document.

7. Outputs and findings

7.1 Desk research

Headline findings from the desk research painted an encouraging picture indicating a high level of momentum behind the initiatives in place (full document available in Appendix 2):

- some excellent case studies across the member nations account for only a minority of FE colleges and HEIs;
- ESD is considered a nebulous concept, a nationally accepted working definition is required;
- delivery of education for sustainable development is disjointed at a national level;
- a standard assessment procedure across the four member nations will allow understanding of national progress;
- communication of the tangible benefits of inclusion of SD in curricula is necessary to secure national buy-in in FE and HE;
- student attitudes towards SD have not been extensively covered; there is a national need to understand student demand;
- Scotland and Wales lead the UK in understanding the impact of ESD with national baselining studies completed.

The desk research also allowed for a core understanding of the common components of the many broad definitions of sustainable development uncovered in the process. The definition that seemed the most suited in terms of flexibility, applicability and relevance was that employed by HEFCE Strategic Review, which states that sustainable development is promoted in HE by activity that contained “a significant element related to either or both of the natural environment and natural resources, PLUS a significant element related to either or both of economic or social issues”.

The merit of this definition lies not in any claim that is finally and absolutely correct. Without doubt, debate will continue about the meaning of SD. However, the documented existence of more than 300 definitions of SD can constitute a serious obstacle to any practical progress if it is allowed to. The definition above was found to avoid this problem within the HEFCE Strategic Review. Using it, most instances were found to be uncontroversial. In less clear-cut cases, purposive judgement could be exercised (and the reasoning behind it recorded). Finally, the definition can be refined, as required, through the development of lists of key words that are indicative of the different required elements.

Following discussion with the wider steering group, the final wording of definitions of behaviours within this remit was constructed:

- understand people's relationship to nature;
- analyse using many subjects;
- act as a responsible citizen locally and globally;
- plan for the long-term as well as the short-term;
- use resources efficiently;
- think of the whole system and the links when considering new ideas;
- adapt to new situations;
- consider the ethical implications of your subject.

Explicit recommendations for the empirical research underlined core unmet needs in the field:

- understand student attitudes to sustainability issues;
- understand student definitions of sustainability;
- explore aspirations towards ESD;
- identify student attitudes towards potential future policies to include SD within the curriculum;
- examine student awareness of the future green economy and skills needed.

These recommendations informed the tailoring of the original methodologies to ensure trailblazing data capture.

7.2 Empirical research

The empirical research, taking the form of an online survey, demonstrates an entirely novel research tool designed to provide new insight and add further clarification to existing work to understand at point of entry to university, what are first-year students' attitudes to and skills in sustainable development in terms of:

- existing skills and knowledge;
- attitudes to sustainable development;
- unmet needs in sustainable development.

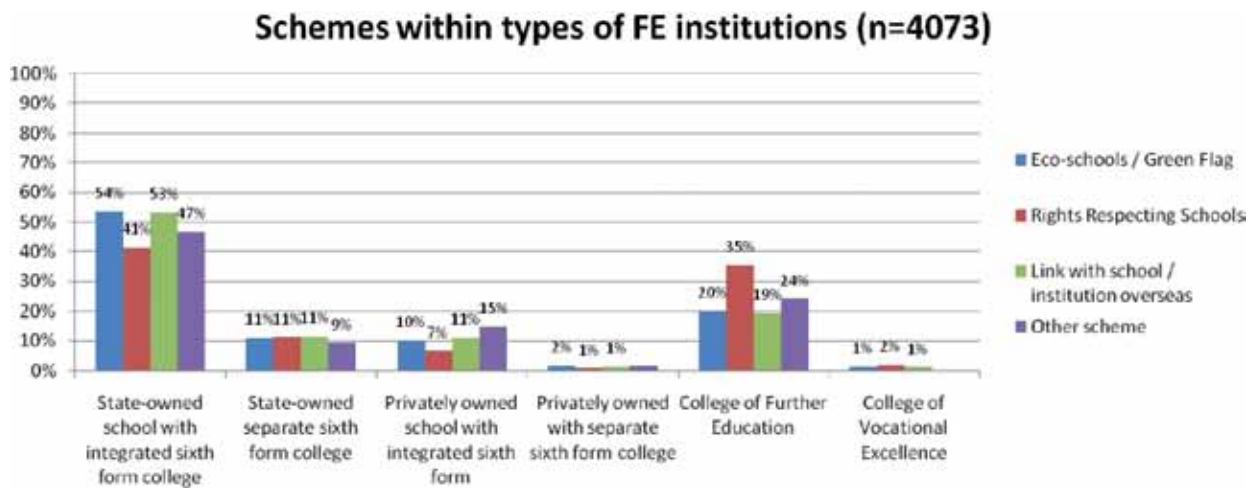
Full sample details can be seen in Appendix 5.

7.2.1 Existing skills and knowledge

Existing skills

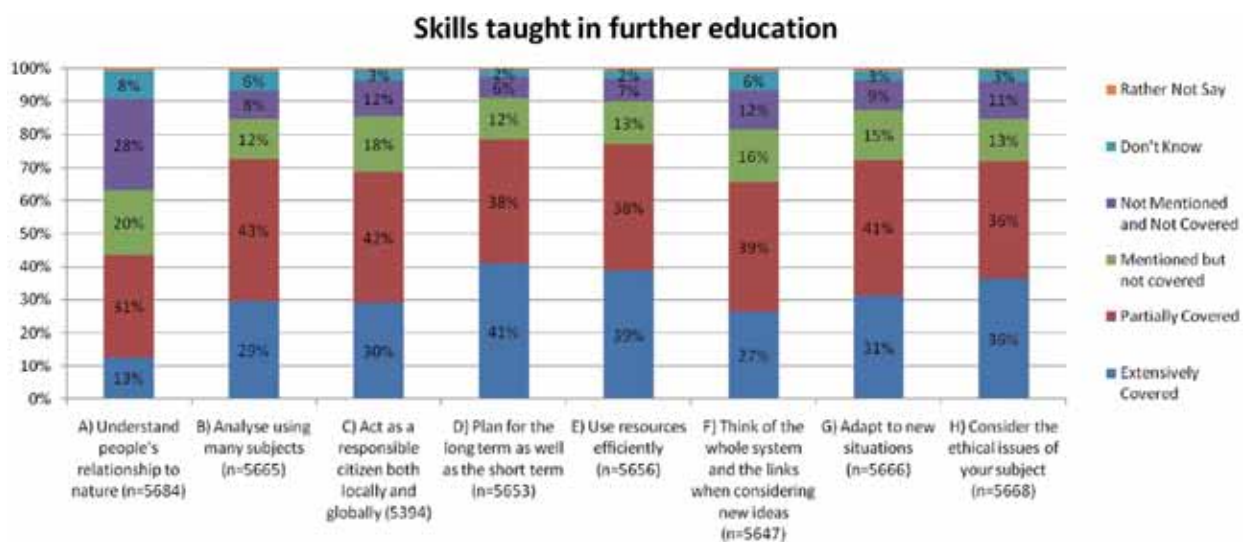
An exploration of historic factors was undertaken within the empirical research to understand prior explicit exposure to sustainability schemes. It was found that schools demonstrate the key vehicles of sustainable development schemes, with specific further education institutions falling behind by some measure (see Figure 2).

Figure 2: Q11. Were you aware of any of the following, if any, at the last place that you studied before your current university/college?



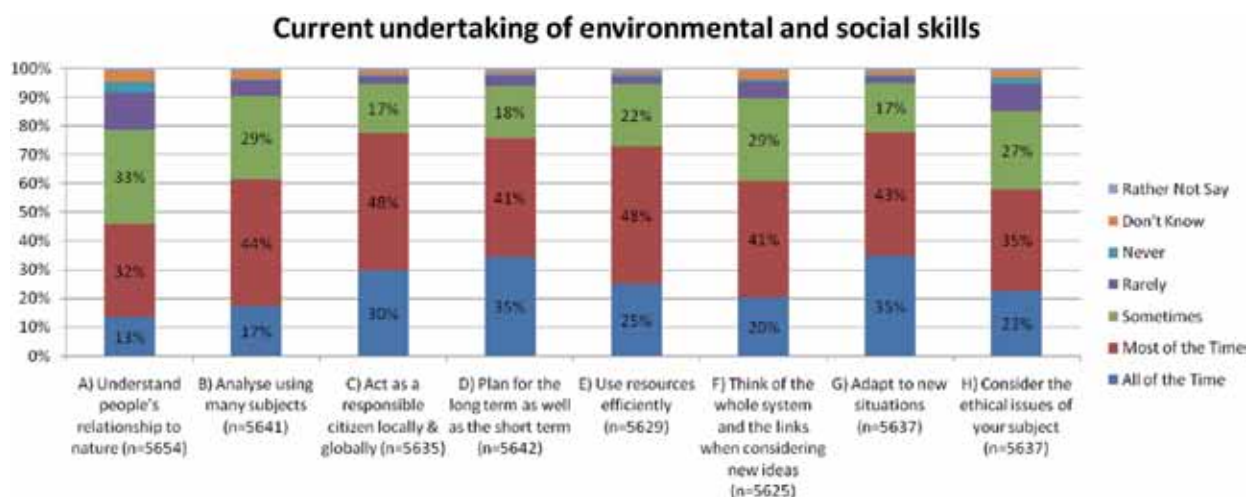
Given our understanding of policy and case studies in SD within FE, in order to understand where sustainability is being taught in further education, the core skills evidenced from the desk research were broken down and retrospective recall of coverage of these skills was posed. Figure 3 documents an encouraging starting point. There is clear opportunity for the coverage of core competencies to be formalised and deepened; however, the majority of all students believe that all skills excluding 'A) understand people's relationship to nature' were at least partially covered during their time in further education.

Figure 3: Q14. Thinking of your time at the last place you studied before attending your current university/college, for each of the following descriptions, please tell us to what extent, if at all, you believe these skills below were covered in your curriculum.



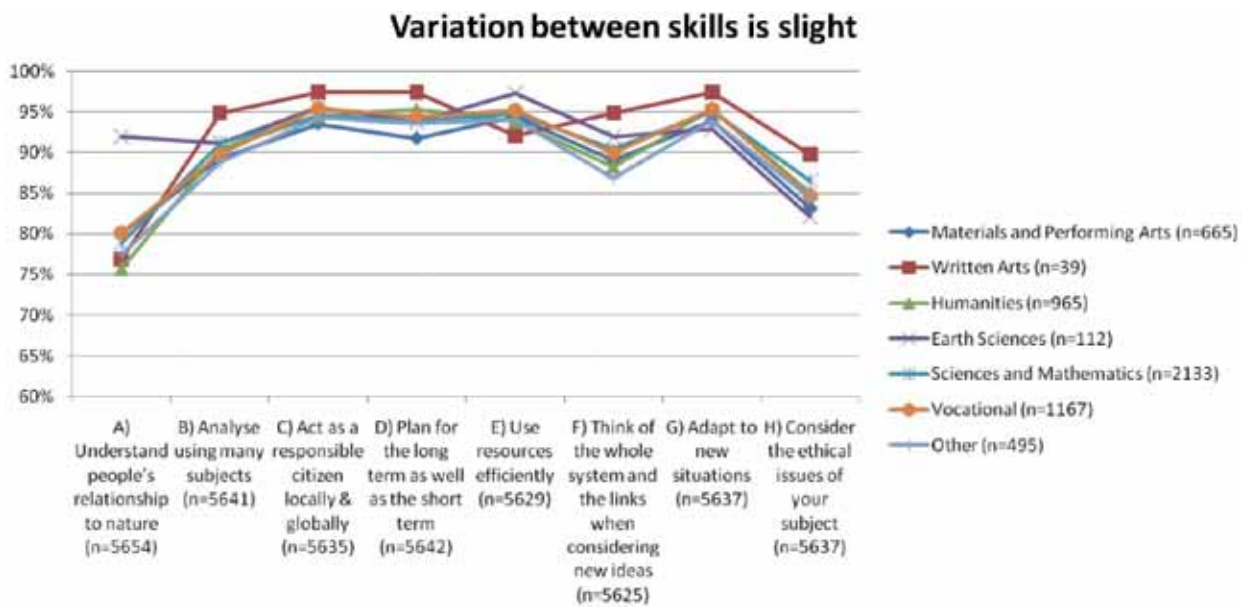
The impact of this coverage results in the response to one of the most fundamental aspects of this research: to what extent are first-year students in higher education conducting these behaviours? Figure 4 demonstrates the impact of nascent teaching of core skills. Relatively low numbers of respondents cite conducting behaviours ‘all the time’; however, a large proportion of these students report conducting these behaviours ‘most of the time’, and with the addition of those who conduct behaviours ‘sometimes’, the question must shift from ‘to what extent do these students conduct these behaviours?’ to ‘how, if at all, do these students conduct these behaviours?’.

Figure 4: Q24. To what extent, if at all, do you think that you personally undertake the following skills?



Variation between course types is very slight; Figure 5, below, demonstrates the minor differences in behaviours by type of course. This may be a result of the question terms being understood differently by each population – further research will resolve this.

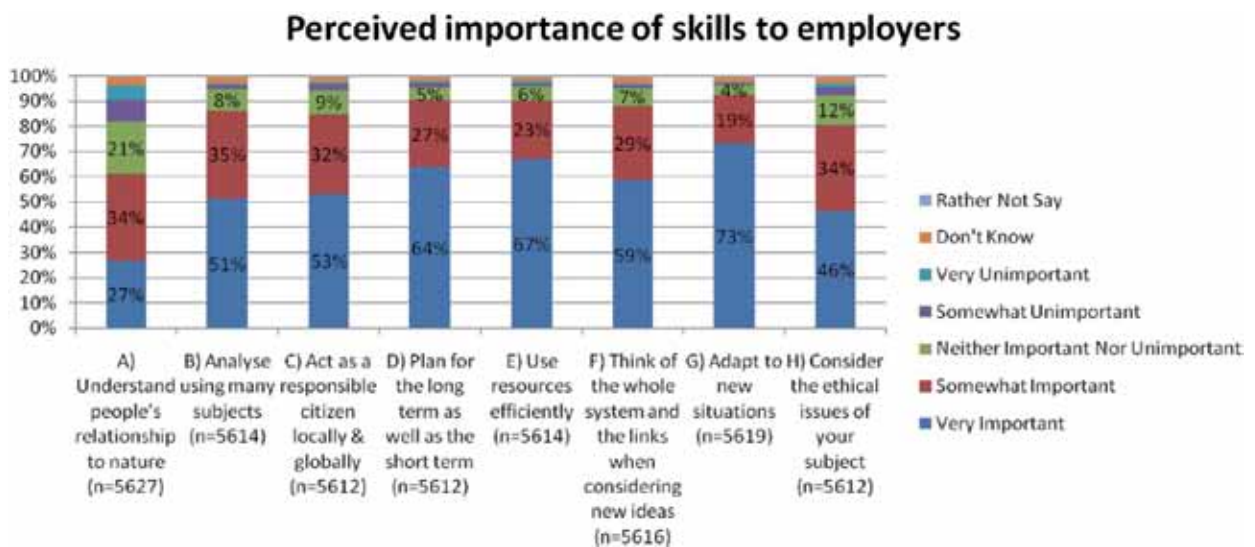
Figure 5: Q24. To what extent, if at all, do you think that you personally undertake the following skills?



Overwhelmingly, skills in sustainable development are expected to be important for employment (see Figure 7). With this in mind, there exists opportunity to further explore how this can benefit universities in terms of:

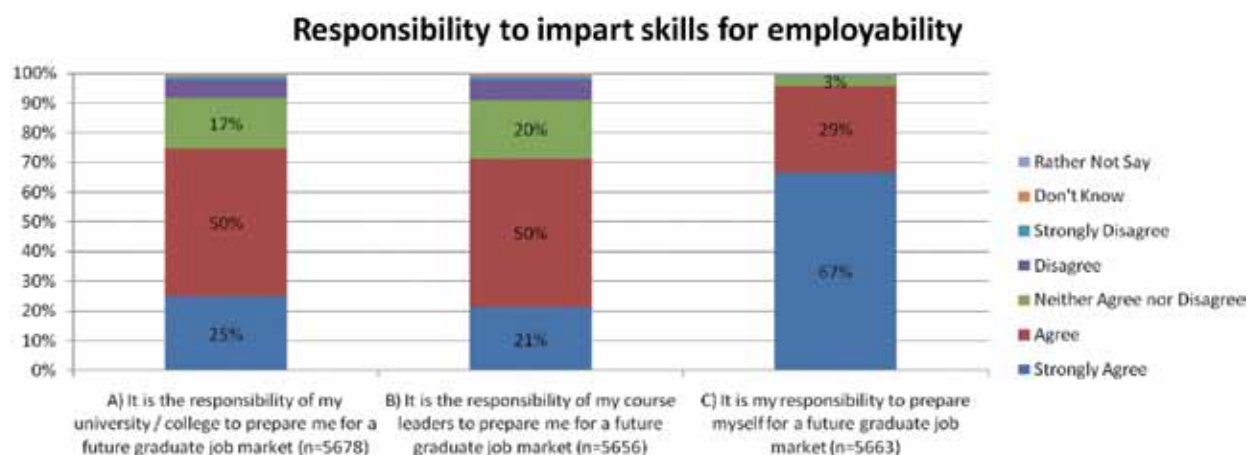
- communication with businesses in order to determine priority skills, how they recognise sustainably literate graduates in the short-term and how to equip graduates with the ability to adapt for the future;
- supporting employment for the student body in creating a generation of young employees with strong skills for employment;
- supporting universities in relation to attraction, retention and employment figures.

Figure 7: Q28. How important do you think the following skills are to your future employers?



This sentiment is echoed in the clear demand for universities to support the development of the skills associated with sustainability literacy in the context of creating employable graduates. Over 75% of respondents call for universities to prepare them for a future graduate job market; however, this relationship is symbiotic, overwhelmingly respondents believe themselves to be ultimately responsible for preparing themselves for a future graduate job market.

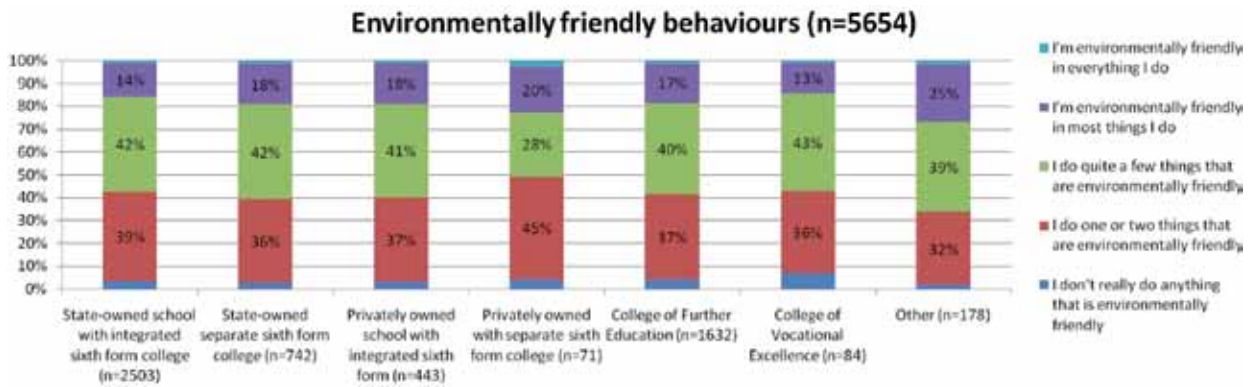
Figure 8: Q19. To what extent, if at all, do you agree with the following statements?



7.2.2 Attitudes to SD

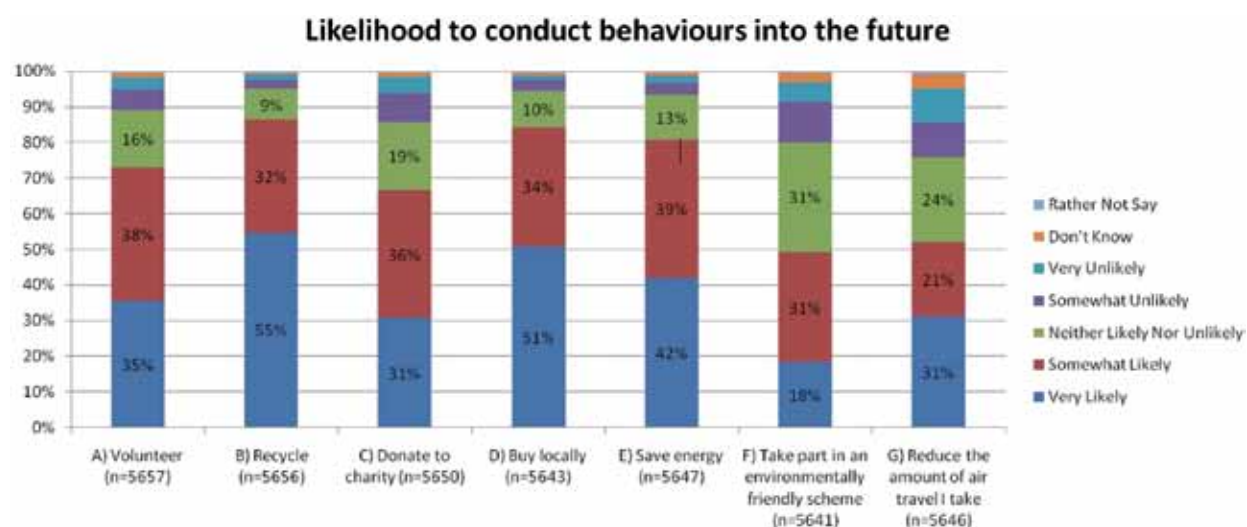
Respondents believe themselves to be generally positive in terms of demonstrating environmentally friendly behaviours, with little differentiation in environmental attitudes by type of FE and school. Notably, under one fifth of respondents believe that they are environmentally friendly in everything or most things that they do, indicative of opportunities to facilitate environmentally friendly behaviours. Note that this question is as asked by Defra and is broadly representative of responses gained in 2009 (unpublished), indicating no year-on-year change.

Figure 9: Q20. Which of these statements would you say best describes your current lifestyle?



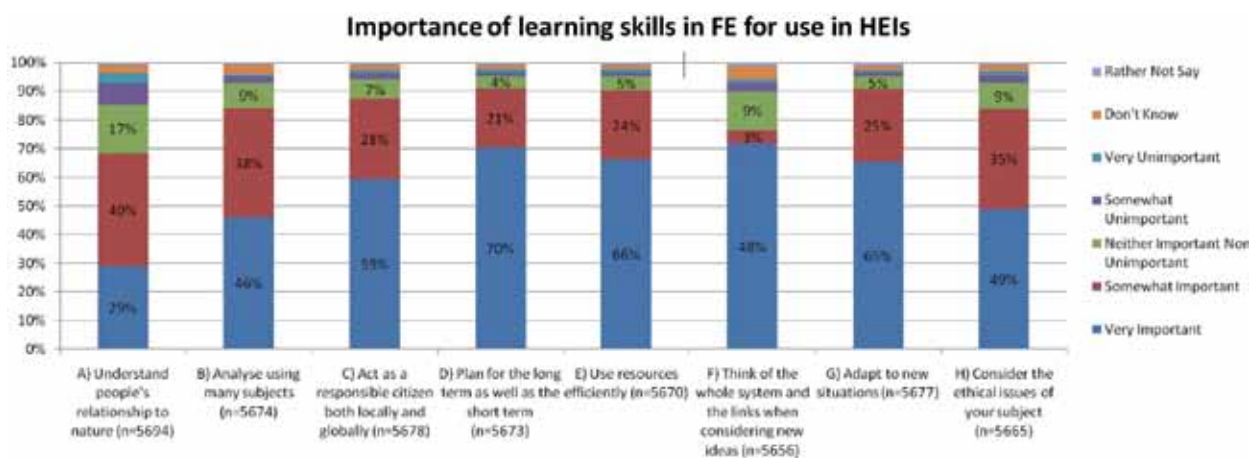
Additionally, the intention to conduct behaviours is strong where the behaviour is considered normative and can be conducted individually, e.g. A-E on Figure 10 below. As demonstrated in work for Defra (to be published 2011), collectivism is often a barrier to uptake of pro-environmental behaviours, and fewer respondents anticipate participating in environmentally friendly schemes. Reducing flying is also considered less likely than other core pro-environmental behaviours.

Figure 10: Q23. How likely, if at all, are you to take part in the following actions during your time in university?



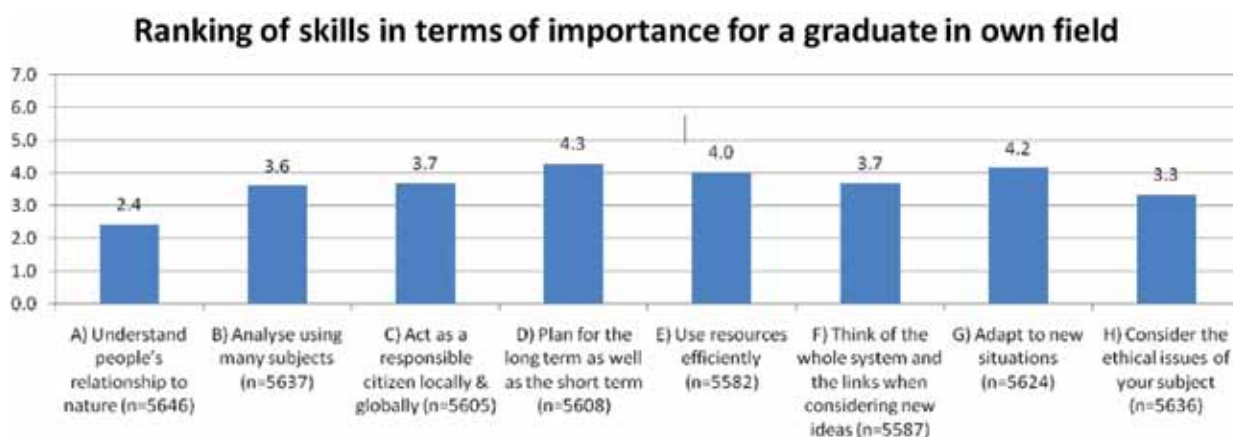
Further to the practice of skills for sustainable development, respondents place high value on many of the aspects of sustainable development for use in HE in increasing their ability to perform well in their course.

Figure II: Q15. Thinking of your answers to the previous questions, how important, if at all, do you feel it is to cover these skills in the last place you studied in terms of skills you might need to study your course in your current university or college?



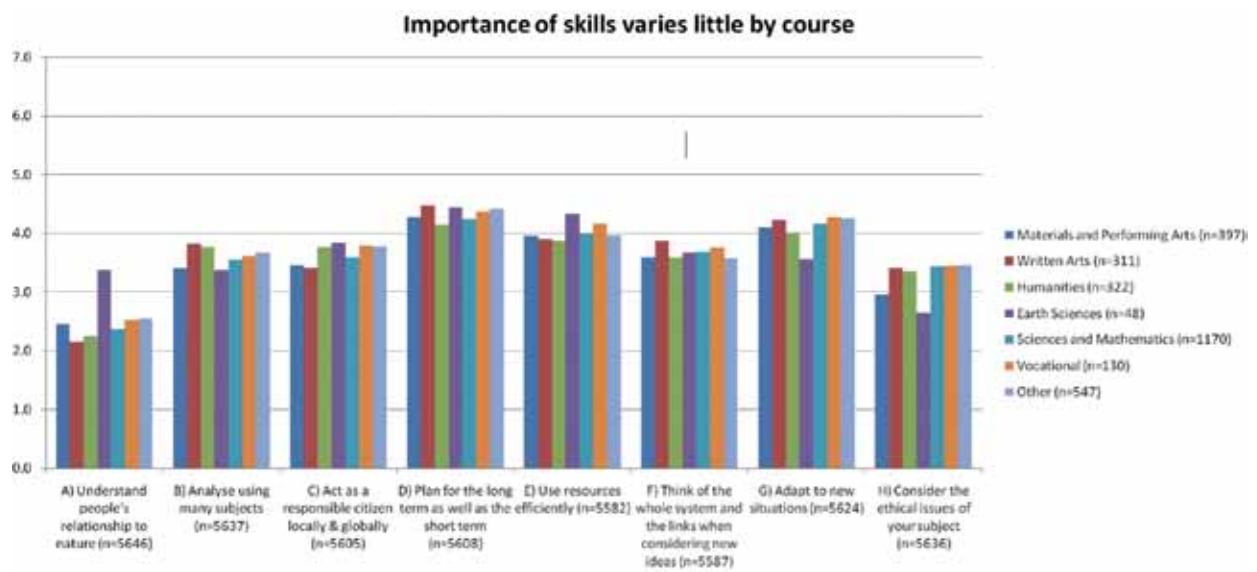
In order to prevent the loss of understanding of which skills are felt to be more important than others, inverted ranking indicates that skills in adaptability are valued more highly than those towards the environment and ethics in relation to employment (see Figure 12).

Figure 12: Q22. 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.



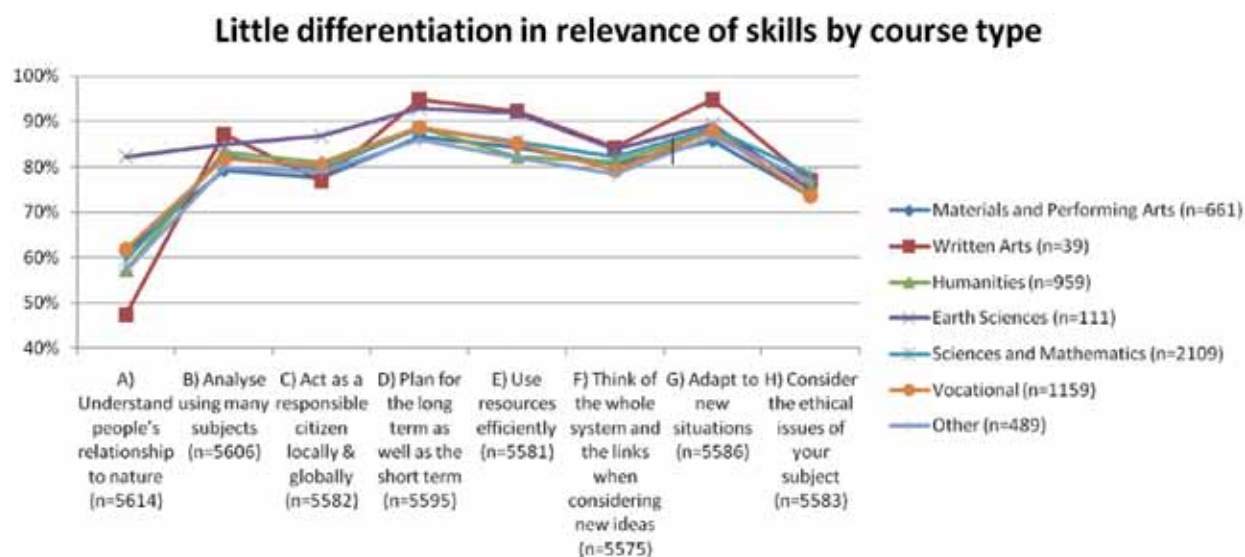
As hypothesised, there is slight variation in importance by course with earth scientists more likely to rank skills regarding nature and resources slightly higher than those of other subjects, and much less likely to value the importance of ethics (H).

Figure 13: Q22. 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.



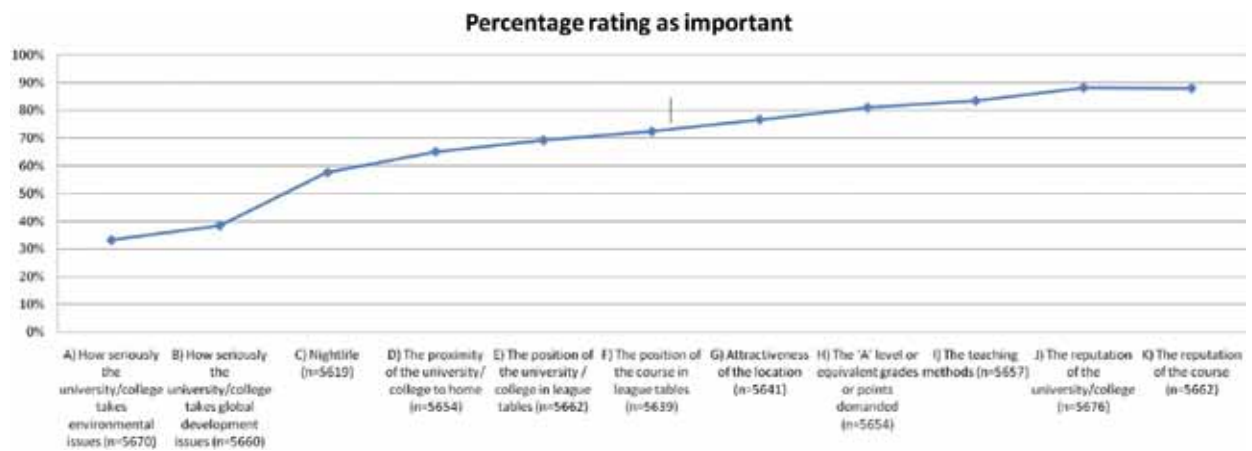
Attitudes towards skills in sustainable development are considered not only important, but largely very relevant to most courses (see Figure 14 below, which demonstrates those who selected extremely relevant or relevant). With the exception of skills regarding people’s relationship to nature, where only two-fifths of respondents felt that these were directly relevant to themselves, overall relevance of remaining skills ranged from 75% to more than 90%, indicative of an opportunity to formalise this demand towards a receptive demographic.

Figure 14: Q26. Thinking only of your own personal view, how relevant is it to you that the following skills are developed through your university education?



Respondents cite university and course reputation, league tables and entry requirements as more powerful attractants to a university than sustainable development metrics; university reputation and delivery act as a match for respondent aspirations. It is therefore opportune to further analyse the potential to incorporate these 'second tier' attractants into those core drivers.

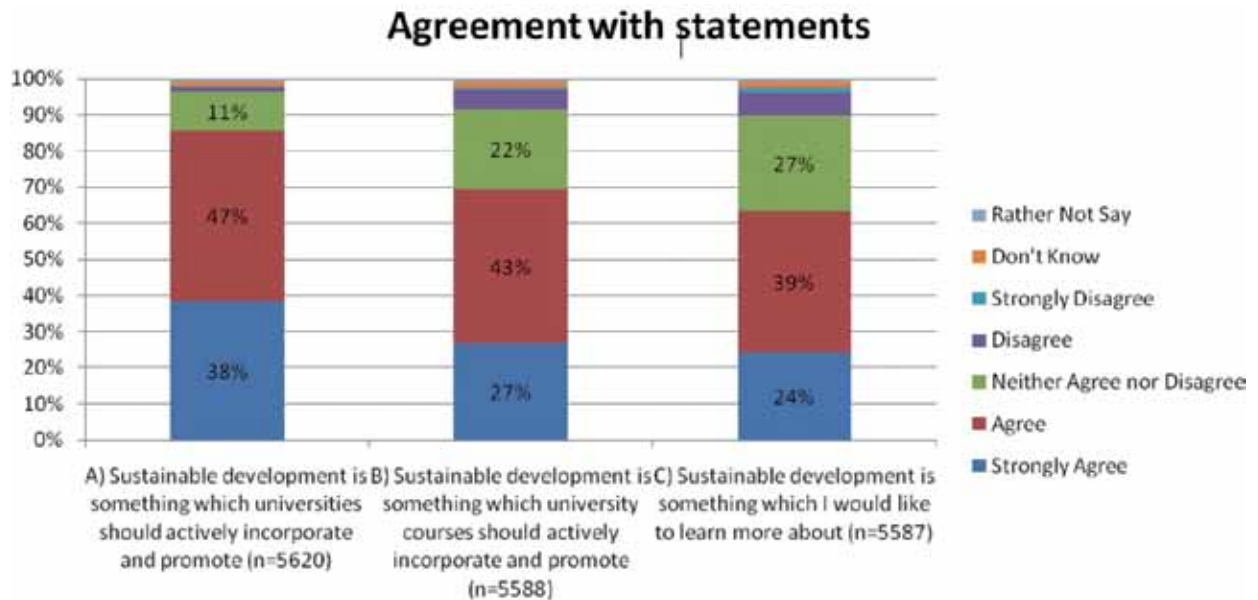
Figure 15: Q17. How important were the following when choosing which university or college to apply to?



7.2.3 Unmet needs in SD

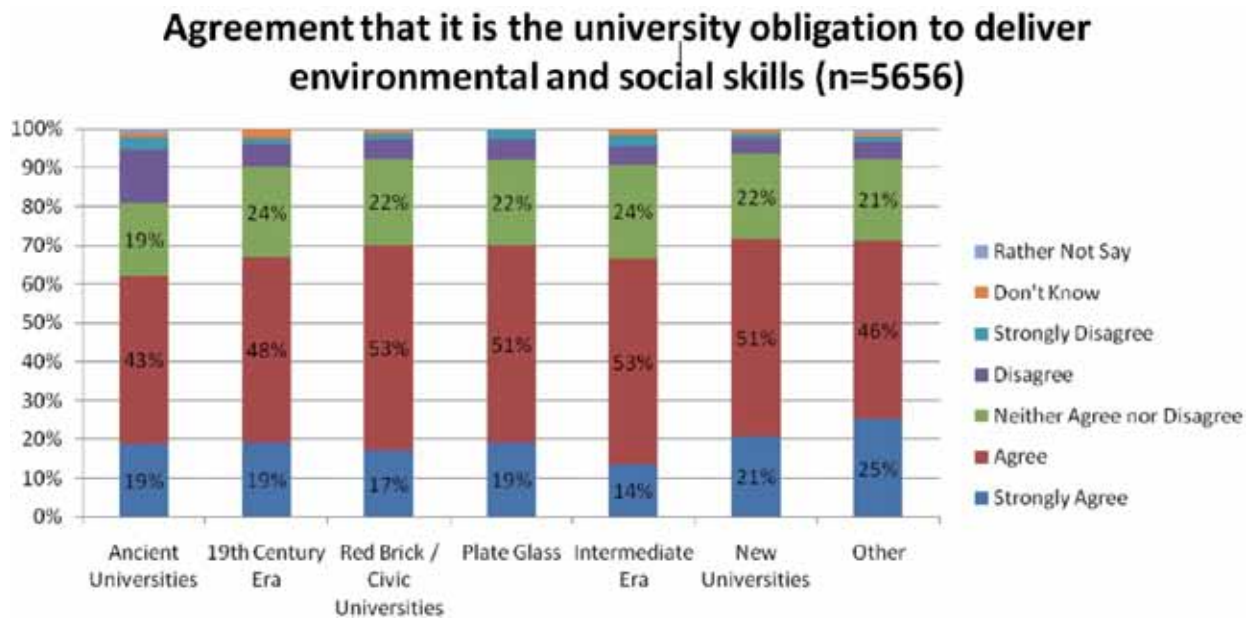
A number of unmet needs in sustainable development in higher education have been cited through this research; however, it is helpful for the context to firstly understand the role of universities in developing graduates with skills in sustainable development. Overwhelmingly, there is agreement that sustainable development is a core agenda for universities, courses and self, with almost two-thirds of respondents stating that they would like to find out more about sustainable development (see Figure 16 below).

Figure 16: Q36. To what extent, if at all, would you say that you personally agree with the following statements?



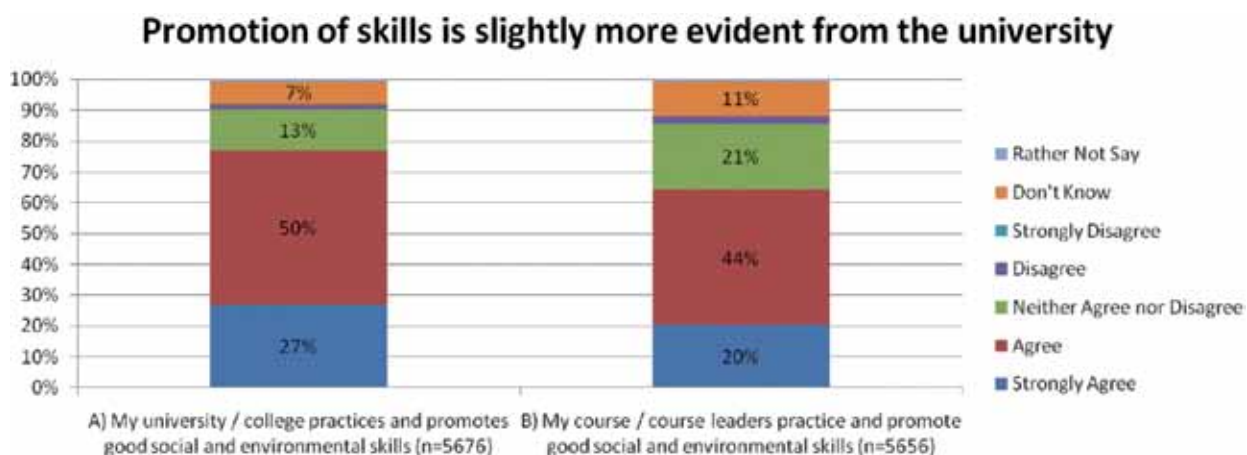
Respondents are keen to learn these skills individually, with little differentiation between university types (see Figure 17 below), indicating a clear role for universities to deliver these skills.

Figure 17: Q33. 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?



In terms of translating these aspirations to their current place of study, a role for curricular inclusion of SD skills is evident with, in keeping with the conclusions from the literature review, an unmet need for curricular inclusion of skills for sustainable development.

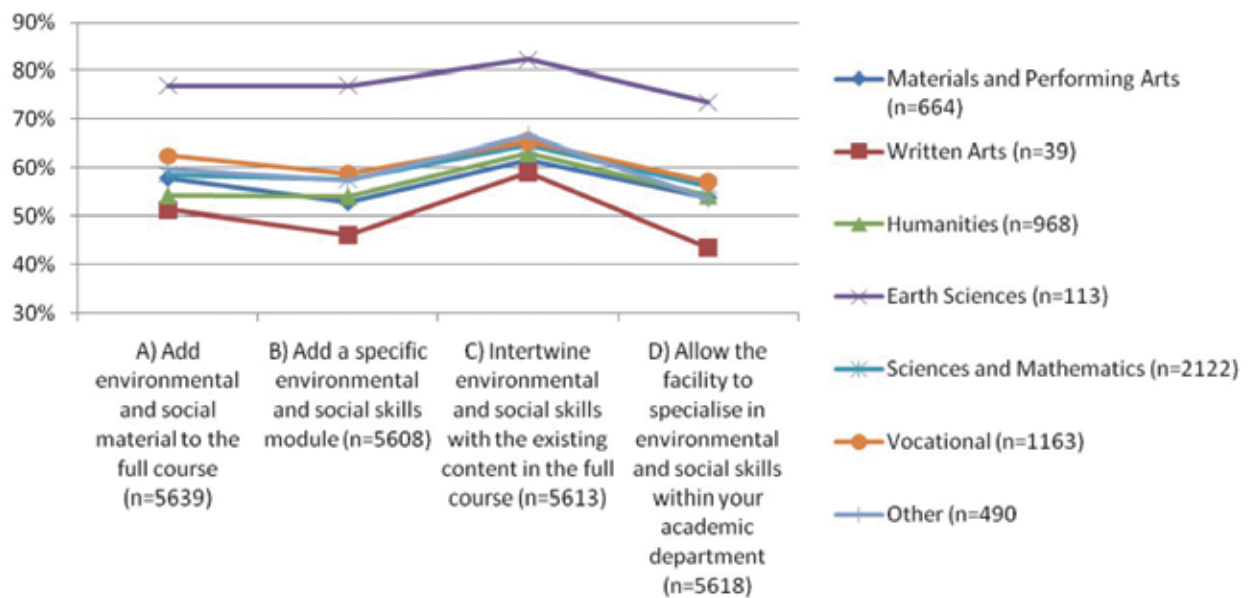
Figure 18: Q21. To what extent, if at all, do you agree with the following statements?



Respondents studying all course types are amenable to inclusion of skills for sustainable development into their own course, with a non-significant difference with those studying written arts feeling the addition is less relevant (although please note that this segment represents a small sample, where n=39). Figure 19, below, indicates those citing methods of delivery of skills for sustainable development as relevant. Opportunity therefore exists to state the case for a contextual shift for curricula.

Figure 19: Q34. Thinking of your course only, if a policy were passed to include social and environmental skills within all university courses, how relevant, if at all are the following methods of including social and environmental skills within your own course?

A reframing of course content is slightly preferred to other methods of delivery of sustainable development

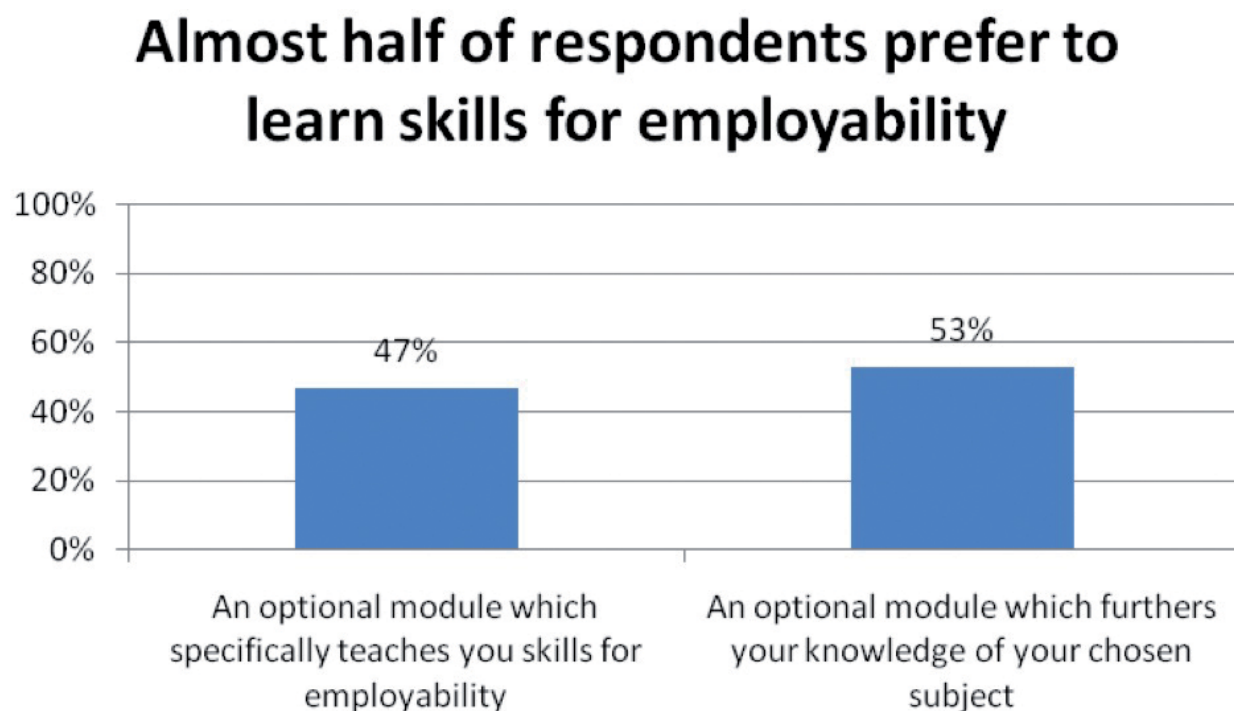


Projective techniques

A small number of future-facing questions were asked, forcing a discrete choice. These questions were not necessarily entirely mutually exclusive, but designed to gain an insight into preference of two likely scenarios based on findings from the literature search.

Encouraging attitudes towards skills for employability were seen, with almost half of respondents stating that they felt they would choose a module that expressly developed skills for employability rather than furthering the knowledge of their chosen subject. If policy-makers choose to retain the 'added content' thinking in relation to skills for sustainable development, respondents indicate that demand for a tailored approach to these softer skills exists (Figure 20).

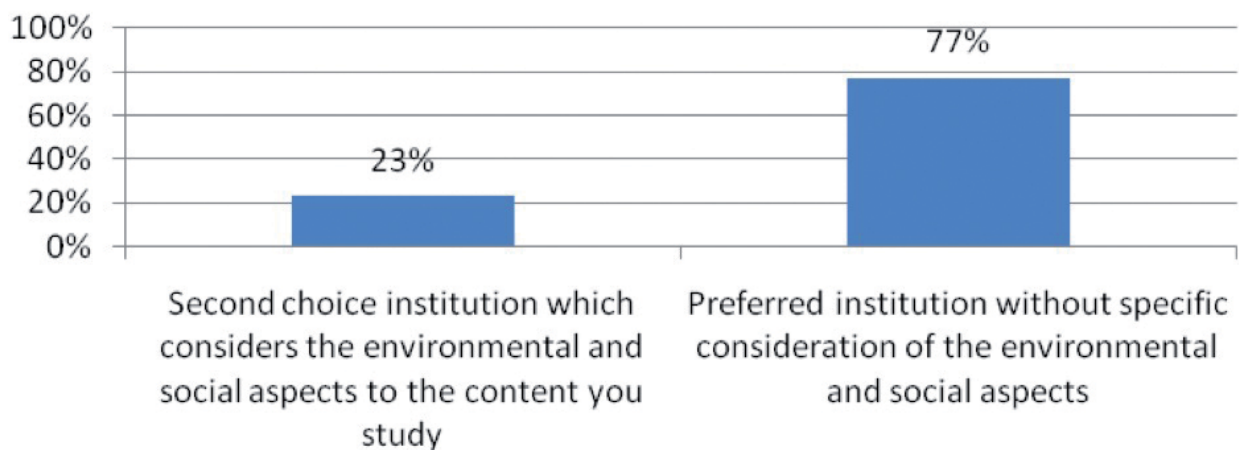
Figure 20: Q29. Please select which option you think that you would choose.



Building on the understanding of attractants to university, respondents demonstrate that a holistic package is needed to attract students to university and that inclusion of skills for sustainable development alone is not enough to attract respondents to a second choice institution (Figure 21).

Figure 21: Q30. Please select which option you think that you would choose.

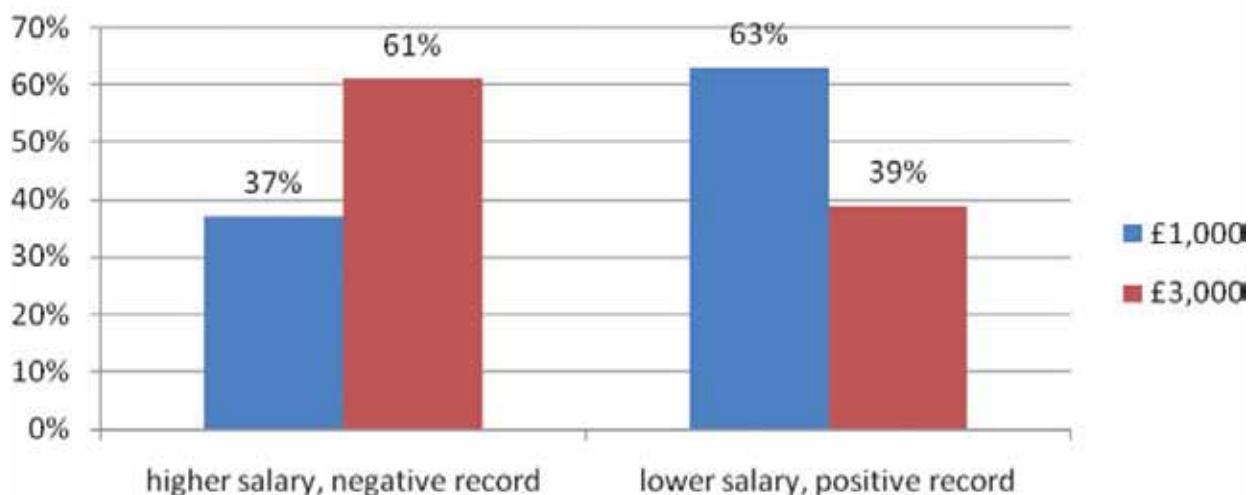
Inclusion of ESD alone is not enough to attract respondents to a second choice institution



A role for communication of company ethics exists throughout the student journey: the majority of respondents would sacrifice £1,000 from salary to work in a responsible company; however, this trend is reversed when the sacrifice is increased to £3,000. Altruistically, two-fifths of respondents report that they would still sacrifice £3,000 of salary to work in an environmentally and socially responsible company (see Figure 22 below). Please note that this question was asked prior to the vote on fees, which may impact these thresholds in the future.

Figure 22: Q31. and Q32. Please select which option you think that you would choose: a) Assuming all other factors are equal, would you choose a graduate position with a starting salary of £1000/£3000 higher than average (£20,000) in a company with a poor environmental and social record? b) Assuming all other factors are equal, would you choose a graduate position with a starting salary of £1000/£3000 lower than average (£20,000) in a company with a strong environmental and social record?

Impact of environmental and social record on likelihood to accept salary



7.3 National data

Interpretation of the national data was taken in order that an understanding was gained of the significance of the slight variation in policy contexts between member nations, including the tuition fees payable in England.

Variation between nations was very slight (see Appendix 6). Although students in Wales and Scotland were more likely to recall schemes implicated in sustainable development from their places of further education than those in England, the attractiveness of environmental leadership and global development initiatives to a place of higher education was equivalent among nations for the most part.

8. Conclusions and implications

8.1 Existing skills and knowledge

The overall message from the research is strong: sustainability concerns are important to students in selecting their university.

8.1.1 Skills for sustainability literacy in FE

Desk research has revealed a patchy coverage of SD within FE, which is reflected in student understanding of SD; however, mention of all aspects defined within the survey is evident in all named types of FE institutions. There is therefore some indication that existing policy in ESD within FE has become integrated into curricula; however, further work will need to be conducted to tease out the role of secondary education in this aspect, given that awareness of sustainable development schemes is significantly more likely in first-year students who have come from a sixth form attached to a school.

Respondents report that the majority of named skills have been covered at least partially throughout FE, although potential exists to increase this further. Desk research has resulted in a number of core recommendations to ensure that educators within FE are equipped with the skill sets required to embrace the incorporation of SD into curricula.

8.1.2 Skills for sustainability literacy in the HE curriculum

There is a perception that it is necessary to articulate the need for a reframing of course content rather than the addition of further course components. Additionally, from a practitioner perspective there is a perceived irrelevance of the ESD content to many subject disciplines. Those teaching subject disciplines that are distant from the ESD content (e.g. Mathematics, English, arts and languages) typically fail to see how ESD can be included in their teachings. This can be challenged by the empirical findings where the vast majority of student types across all backgrounds and courses perceive at least some relevance of sustainable development to their courses and future employability.

Desk research also indicated that ESD content is avoided when teaching staff feel as though they don't know enough about the issues surrounding sustainable development, hence training opportunities exist.

A further challenge arises from a limited institutional drive to encourage the embedding of ESD into the curriculum, which is often seen already overcrowded, and fears exist that including sustainable development issues will end up restricting the depth of the educational quality. A need to react to student demand exists, through

evidence such as the National Student Survey and selection of university in a charging market; therefore these findings not only serve to demonstrate the importance of sustainable development in student demand, but, additionally, the scale of this importance behind the traditional 'quality' attractants to a university.

8.1.3 Relevance of skills for sustainability literacy

First-year students, on the whole, overwhelmingly believe that these skills are important to graduates in their field, with little differentiation between course types, although environmental scientists, as hypothesised, are more likely to rank these skills as 'important' or 'very important' than their counterparts studying other subjects.

However, in general, the relevance of these skills falls slightly behind importance across all subject types excluding environmental sciences. This is strongly resonant of the findings of the desk research, indicating that educators are not yet comfortable in including SD within their curricula.

These skills are felt to be valuable to study in HE; however, skills regarding nature and ethics are less important to respondents than softer skills that can be directly applied to all courses.

There is an overwhelming expectation for universities to provide skills for employability and a wider argument for business to take a more active role in supporting the development of such skills in universities and also professional bodies, such that the skills encompassed within sustainable development are transferrable, relevant and essential for the future marketplace.

8.2 Attitudes to SD

Attitudes to sustainable development and social issues are broadly similar irrespective of previous place of study or course, although are slightly affected by historic exposure to sustainable development initiatives, as demonstrated within Scotland. The skill set incorporated within sustainable development is seen as of high importance and relevance, and it is considered the role of HEIs to deliver these skills. However, the sales power of broadening these skills for employability alone is not enough to attract students away from their preferred institutions in the 2010–11 environment. It is essential to monitor the drivers of choice of university closely in relation to sustainable development over the two academic years 2011–12 and 2012–13 as increased tuition fees are introduced.

The desk research reveals that many vice-chancellors of universities have signed a statement of intent to incorporate sustainable development into the curriculum; this

work reinforces the existing intentions within universities and could have an impact on the process of embedding and extending sustainability literacy within existing teaching and learning programmes.

8.3 Unmet needs in SD

8.3.1 Opportunities for policy

These skills are expected to be important for employment across courses; however, respondents are most likely to cite that they will be responsible for learning these skills, rather than their university or course leaders.

As per recent policy papers and research reports suggesting the relevance of a reframing of curricula rather than the addition of modules, respondents report that courses could promote SD further through contextual framing, although attitudes to other types of teaching of SD are broadly positive with approximately half of all students across courses amenable to the addition of material to courses or a specific module. The primary element of this research additionally indicates the case for a contextual reframe of curricula as a result of student expectation for higher education to provide the necessary skills for graduate employment. This is supported by the success of the national forum of mandatory sustainability champions within Wales as a desk research case study.

8.3.2 Demand for policy

Encouragingly and possibly a result of the previous policy setting, a cultural shift is in evidence with the majority of respondents choosing to identify a job with a £1,000 decrease in salary in a company with strong ethics as more attractive than an increase of £1,000 on average in an unethical company. This trend is, however, reversed at the higher price point of £3,000.

The desk research triangulates student demand for skills in sustainable development by highlighting a demand for sustainably literate graduates among employers (although a need exists to understand better how employers define these graduates). Additionally, the research indicates an anticipation by employers of a need to employ staff with skills for sustainability literacy in a future workplace. It is also essential that future work with employers includes a definition of employability that resonates with students and employers alike.

In the context of high youth unemployment, informal qualitative research (unpublished) conducted by StudentForce for Sustainability indicates a real need for

business and universities to collaborate in order to equip graduates for the workplace. This is of particular relevance in the case of many graduates who are forced to take unpaid or low-paid internships in order to develop the skills required for a workplace.

8.4 The nations

In keeping with the desk research that indicated Scotland and Wales had more progressive national policy in FE than England, respondents from Scotland and Wales were more likely to recall schemes in sustainable development in their previous place of study than those in England, indicating the strength of the role of further education in influencing opinion. While there were no notable differences between nations in terms of the role of the university, it is worth noting that skills for sustainable development are felt to be slightly more relevant among Scottish students than those in other nations and that Scottish students are slightly more likely to trade off a higher salary in order to work in a graduate role with a more socially and environmentally responsible record.

Students in England pay annual tuition fees which are set to increase very substantially in the near future. Students in Scotland and Wales are generally not required to pay at the moment (with the exception of English students who pay a contribution and of course non EU international students) but this may change in the future. The lack of differentiation in relation to metrics of attractiveness of university may indicate that the present levels of tuition fees are not sufficiently high that they affect the prioritisation of attributes, or indeed that tuition fees impact on this at all. There is, however, an unmet need to understand the impact of the increased tuition fees on selection criteria and anticipated role of the university.

9. Recommendations

9.1 Recommended outputs

The contribution of sixth form teaching is apparent in the existing skills and knowledge of first-year students in higher education. However, those responsible for teaching subject disciplines that are distant from the more obvious ESD content (e.g. Mathematics, English, arts and languages) can fail to see how ESD can be included in their teaching. An online resource, made available to these individuals will serve to improve the baseline skills and knowledge of students in higher education. There exist international examples from which the work of constructing such a resource might begin.

A need exists to work on student demand: for SD to gain further foothold within the curriculum, students need to be aware of the employability significance of skills in sustainable development, requiring development of partnerships with business. A diversion of funds into creating this demand through communication of the employability value is likely to result in an increase in support from students, higher education institutions and employers. Professional organisations may have an important role in this process.

In order to further support those delivering these skills, a resource, utilising case studies, to demystify the contextual reframe of existing content is likely to be well received among those responsible for curricula and delivery. This research additionally indicates that it is essential that future policy focuses on the need for full incorporation of sustainable development principles, as captured by the HEFCE definition, rather than additional modules that are used to promote skills but undertaken by a minority and are not demanded by students, nor preferred over courses that extend knowledge of their chosen subjects. To make this point absolutely explicit: it is not that it would be good if engineers, architects, economists, town planners, managers and others were taught some more about SD, it is, rather, that SD is something that any good engineer, architect, economist, town planner (and so on) should be expected to know about. There are already professional bodies (the Royal Academy of Engineering) that recognise this.

Further to this, it is essential that when guiding the incorporation of SD principles into the curriculum, an interdisciplinary approach is recommended, particularly in the context of the funding reduction for non-STEM subjects.

9.2 Support for outputs

In order to achieve the above suggestions, senior management support within universities is essential. A mandate such as that in Wales for sustainability champions from senior management groups at each university and a national forum to discuss and support the work of these champions is key to progressing holistic thinking and delivery of the ESD agenda.

9.3 Supporting ESD, operationally and strategically

In order for progress to be made, acceptance of an interim working definition of SD is essential. The HEFCE definition of sustainable development activities is preferred within this research, and its wider dissemination in vernacular terms at a strategic level is likely to make an otherwise nebulous and contentious concept more actionable.

There also exists a need for increased media and sector support of groundbreaking initiatives within the ESD arena. Case studies demonstrate that the launches of national initiatives in the ESD agenda need to be marked with a well-disseminated conference to support national uptake and impact.

9.4 Future research

This research represents groundbreaking findings on student attitudes towards, skills in and aspirations for sustainable development, and sheds light on a policy/values gap, and student demand and expectation for 'softer' skills for employability. However, the historically sparse information on student attitudes to, skills in and aspirations for sustainable development and the shifting student universe in light of the increased tuition fees highlight a need for future research.

There is considerable demand from students in order that they are equipped with the skills for sustainable development defined within this research. However, an important need exists to understand the impact of tuition fees on student aspirations and expectations of the role of higher education. Further research at the commencement of the forthcoming two academic years, monitoring student attitudes to, skills in and aspirations towards sustainable development will allow for monitoring of shifting sands within the student demographic, to inform a dynamic, reactive and future-facing ESD agenda.

Additionally, with the price hike in tuition fees and the understanding that quality factors are strong attractants to university, it remains to be seen whether 'price of course' translates as perceived indicator of value, or whether 'unique identifiers of university' will come to the fore should courses be priced similarly nationally. Therefore research conducted in the next two academic years will provide invaluable insight on the cusp of a changing higher education setting.

10. References

References below represent those mentioned within this report and within the desk review process. Short notes on the content of these resources and references can be found in Appendix I.

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Appendix I: Summary table of desk research

Ref	Relevance/ importance	Report/article reference	Report summary (approx 200 words)	Methodological considerations	Strengths/ Weaknesses
Policy					
001	Medium	LSC and ESD Consulting Ltd (2009) <i>Embedding Sustainable Development in the Curriculum: Guidance for Staff Within Learning Institutions on How to Embed Sustainability into What and How They Teach</i> . Available from: http://www.eauc.org.uk/sorted/files/embedding_sustainability_in_the_curriculum_guide.pdf	<p>A concise document that provides a good introduction to embedding sustainability issues into the curriculum for those in an education environment. The document details a brief overview of the current trends before providing definitions of 'Education for Sustainable Development' (ESD). The key knowledge, skills and attitudes that are a core element to the understanding of ESD are noted and provide a useful guide to build upon. The report refers specifically to environmental issues when making reference to 'sustainability' and 'sustainable development'.</p> <p>The report draws on case studies from academic and industry-based subjects and illustrates how ESD can be implemented into these subjects. A framework of where to start when including issues surrounding sustainability is provided in a 'ten-step summary'.</p> <p>The potential for ESD to be embedded within a range of educational institutions is outlined through seven examples (e.g. tutorials, short courses, projects, key skills and skills for life, community as a learning resource, the workplace as a learning resource, and curriculum enrichment) with each example providing three case studies to illustrate the possibilities.</p> <p>The report also provides the reader with a basic self-assessment form (p23) that will allow for an evaluation of strengths and weaknesses when considering including issues of sustainability in education facilities.</p>	<ul style="list-style-type: none"> Primarily outlining good practice examples of including issues of sustainability 	<ul style="list-style-type: none"> Provides a strong starting point for institutions looking to include elements of sustainable development into the curriculum Provides case studies of including sustainability issues in a range of subjects Provides links to further resources Limited in depth of information provided
002	Medium	BIS (2010a) <i>Higher Ambitions: The Future of Universities in a Knowledge Economy</i> . Available from: http://www.bis.gov.uk/assets/BISCore/corporate/docs/H/09-1447-higher-ambitions	<p>A comprehensive document that outlines the issues that higher education (HE) institutions face in order to continue developing to a high standard.</p> <p>The proposal suggests that HE institutions can assist with the sustainable development of the UK economy, increased actions relating to environmental sustainability, and ensuring that service provision at universities remains at a world-class level.</p> <p>The document aims to encourage the development of a national consensus between individuals, Government and employers with regard to how HE institutions can serve the community (locally and globally) and how the institutions should be supported. Six core elements are considered in the proposal:</p> <ul style="list-style-type: none"> The first issue relates to increasing access to HE for all potential students, not just school leavers. Secondly, the proposal discusses the necessary actions that will be required to equip Britain's workforce for a global economy. Thirdly, the importance of research, innovation and 	<ul style="list-style-type: none"> n/a 	<ul style="list-style-type: none"> A detailed proposal that outlines extensively potential actions to ensure development of HE services Highly informative and peppered with facts and figures to justify statements Provides informative case studies to illustrate

			<p>knowledge exchange is considered. Attention is paid to establishing links between universities, global companies and local/regional business.</p> <ul style="list-style-type: none"> • Fourthly, the proposal suggests an increased focus on the student experience of HE. This section suggests that student experiences should be utilised to lead and change university development, with particular attention on the service provision in HE institutions. • Fifthly, the engagement of universities with the wider world and local communities is noted. Universities should be considered as a uniting force to aid community development, while encouraging internationalism and multiculturalism. • The final focus relates to the support of HE institutions. The section outlines the possible actions to ensure that the UK HE system remains within the top flight of education providers. 		<p>potential actions</p> <ul style="list-style-type: none"> • Does not address the challenges faced by realising the actions • Addresses the term 'sustainable development' as an all-inclusive catchword, with limited attention to providing an established definition
003	High	<p>Department for Children, Schools and Families (DCSF) (2010) <i>Sustainable Development Action Plan for 2010-2012</i>. Available from: http://www.dcsf.gov.uk/aboutus/sd/docs/SDAP-the-best-place-to-grow-up.pdf.</p>	<p>The document provides an outline for the potential to encourage environmental sustainability principles in young people in order to ensure a future of environmental stewardship. Five key principles are outlined in this action plan with two main goals:</p> <ul style="list-style-type: none"> • living within environmental limits; • ensuring a strong, healthy and just society. <p>Three additional aspects are said to facilitate these goals:</p> <ul style="list-style-type: none"> • achieving a sustainable economy; • using sound science responsibly; • promoting good governance. <p>The action plan focuses on four priority areas:</p> <ul style="list-style-type: none"> • climate change and energy; • sustainable consumption and production; • natural resource protection • environmental enhancement. <p>The document emphasises the importance of educating younger generations to ensure that positive environmental practices are realised. It also provides a breakdown of the actions that would be needed to implement the plan. Models are provided to detail how the objectives can be achieved and these are supported with references to further policy documents.</p>	<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • A future-facing document with clearly expressed aims and expected outcomes from the action plan • Concisely addresses pertinent issues and elaborates on potential necessary actions • Provides 'vision' case studies to help illustrate the possibilities of the plan
004	Low	<p>University and College Union (2010) <i>UCU Guidance Leaflet No. 1 'Education for Sustainable Development' May 2010</i>. Available from: http://www.ucu.org.uk/media/docs/t/UCU_Guidance_'ESD'2.doc</p>	<p>A short resource that primarily acts as a reference document to encourage and enable ESD to be incorporated into the curriculum. The document aims to define education for sustainable development, and the role it can play for future generations, alongside the relevant importance for the University and College Union. The guidance leaflet mainly focuses on the environmental sustainability issues, but it does mention community/social</p>	<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • A great resource that can be used as a reference for any institutions looking to include ESD as part of their curriculum

			<p>development.</p> <p>The document provides a lengthy list of organisations and agencies that are instrumental to embedding ESD into the curriculum. The list outlines the main roles and focuses of each organisation and provides links to allow the reader to find additional information.</p> <p>Further to this, the worksheet identifies the possible approaches to including ESD within the curriculum by providing examples.</p> <p>The final aspect to this resource is a checklist to assess the current level of ESD inclusion of the reader's institution.</p>		<ul style="list-style-type: none"> • Outlines actions that other agencies are taking to include ESD • Provides contact details and links to additional resources • Perhaps too simplistic in places, but does allow for further reading
005	Medium	<p>BIS (2010b) <i>Sustainable Development Action Plan</i>. Available from: http://www.bis.gov.uk/assets/biscore/business-sectors/docs/09-p59-bis-sustainable-development-action-plan-2009-11.</p>	<p>This plan outlines the actions that the Department for Business, Innovation and Skills (BIS) intend to take (during the period August 2009 to March 2011) in relation to sustainable development. The action plan relates to <i>Sustainable Development Action Plan for Education and Skills</i> (see 003).</p> <p>The action plan covers issues of environmental, economic and social sustainable development. A variety of sectors are covered by the action plan. The direction of the actions to be taken is outlined in clearly visible boxes.</p> <p>The document firstly discusses the actions for business, and covers a variety of sectors ranging from manufacturing to retail, with particular focus on economic sustainability. Following this the chapter on regional policy outlines how ESD can be embedded in business in order to impact environmental and economic sustainability. Climate change and energy usage is then considered, and details of how the actions will be facilitated are provided. The section on world trade, development and sustainability notes the importance of ESD for both economic and environmental sustainability. Consumer sustainability and 'green claims' are considered under the title of 'Supporting Fair and Just Employment'.</p> <p>The chapter on embedding sustainable development into HE and FE curriculums uses examples to illustrate what can be done to encourage increased ESD. Examples include efforts that have been made by colleges and universities in response to accreditation schemes such as The Green Gown award.</p>	<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • Concise and easy-to-read actions are outlined throughout the document, which clarify the direction that will be taken • A detailed list of the actions is shown in the appendix allowing for easy reference for the reader • The document provides an overview of actions towards sustainable development in economic, environmental and social contexts • Limited details are provided relating to how to achieve the actions or how to incorporate ESD

006	Medium	<p>BITC (2010) <i>Leadership Skills for a Sustainable Economy</i>. Available from: http://www.bitc.org.uk/document.rm?id=11626</p>	<p>This inquiry into the potential for developing a sustainable economy opens by outlining the relationship between environmental sustainability, social sustainability and economic sustainability. From the outset the document calls for an increased focus on environmental sustainability and emphasis is placed on how this can influence an economically sustainable future.</p> <p>Three core challenges that face the establishment of a sustainable economy are detailed: the intersection of organisations with society and environment; the commercial benefits of sustainability and communicating these benefits to business; and tailoring programmes to the specific needs of organisations.</p> <p>The report identifies that these challenges can be faced on a three-tiered basis. The suggestion is made that changes need to be made at senior management/board level, middle management level, and at the customer-facing level. Development within specific business functions is the key focus, and areas of consideration range from developing sector skills to carbon accounting.</p> <p>The document goes on to outline the need to provide transferable learning skills across the three levels before using leading companies as examples of how to implement similar educational facilities into business.</p> <p>The final aspect of the document highlights the importance that workplace education can have on achieving economic sustainability and goes on to identify five points that should be considered to influence the direction of future decision making.</p>	<ul style="list-style-type: none"> • A business review of existing education for sustainable economic development. Primarily desk-based research that is backed up using working examples from existing companies 	<ul style="list-style-type: none"> • A concise report that tackles relevant issues directly • Offers possible directions to assist in achieving a sustainable economy • Remains focused and direct throughout • Introduction makes specific reference to environmental sustainability, but the core of the report makes limited mention of benefits • Limited reference to students in FE or HE – primarily relating to business practices
007	High	<p>Dawe, G., Jucker, R. and Martin, S. (2005) <i>Sustainable Development in Higher Education: Current Practice and Future Developments. A report for the Higher Education Academy</i>. York: The Higher Education Academy.</p>	<p>The core element to this report focuses on how different subject disciplines taught within the HE system are contributing to the inclusion of sustainable development content in the curriculum. The findings from the study indicate that most disciplines are including ESD concepts into their teachings. An increased recognition that ESD is an applicable and important component to education was noted.</p> <p>The report documents a generally positive trend in the movement towards including ESD within a range of disciplines. Efforts that have been made so far have been described as a work in progress, with positive good practice examples that are being built on. However, there is room for improvement, and success stories are noted only in certain disciplines (e.g. geography, environmental science), while other disciplines, in particular the arts and maths/statistics, struggle to incorporate relevant materials.</p> <p>In order to achieve a more balanced result from ESD inclusion, four key challenges have been identified:</p> <ul style="list-style-type: none"> • overcrowding of the curriculum; • the perceived irrelevance of ESD to certain disciplines; • a lack of knowledge/experience in staff; 	<ul style="list-style-type: none"> • Report based on desk-based literature review, questionnaire to 24 HEIs (12 subject centre responses) and six focus group studies • Research materials are available on p63 	<ul style="list-style-type: none"> • A significant baseline document that provides a positive starting point in the evaluation of ESD in the HE curriculum • Provides a direction for future research development • A transparent document that highlights the strengths and weaknesses of the methodology employed

			<ul style="list-style-type: none"> limited institutional drive to encourage ESD inclusion. <p>The document provides brief solutions to these issues, but further challenges will present themselves if the implementation of these solutions is advanced upon.</p> <p>Finally, the report notes four key elements to assist with the embedding of ESD into the curriculum:</p> <ul style="list-style-type: none"> support and funding should be made available to assist ESD inclusion; action research should be conducted to explore connections between ESD and employability; research should be conducted to see if career opportunities and choices of HE graduates are influenced by the sustainable development agenda; the establishment of a stakeholder group, comprising of employers, professional bodies and graduate careers staff to identify ways to embed ESD into teaching, learning and the curriculum. <p>The overall call from this document is to encourage a broader and more flexible approach to teaching.</p>		<ul style="list-style-type: none"> Limited validity to the findings due to the limited response from the survey Small sample size prevents generalisation of findings
008	High	<p>LSC (2009b) <i>Skills for a Sustainable, Low Carbon and Resource Efficient Economy</i>. Report of a round table meeting, 11th February 2009. Available from: http://readingroom.lsc.gov.uk/lsc/National/Skills_for_Sustainable_Economy.pdf.</p>	<p>This document expresses the findings from a round table meeting relating to the development of skills that are necessary to the establishment of a low carbon and resource efficient economy (LCREE). Utilising the strategy outlined in the Department for Children, Schools and Family document <i>Sustainable Development Action Plan for Education and Skills</i> (see 003).</p> <p>A number of core objectives are laid out:</p> <ul style="list-style-type: none"> The need for a culture change across society to encourage positive attitudes towards developing skills to achieve LCREE. The document details the importance of learner engagement. This can be utilised through institutions or through learner voice strategies in providers (i.e. learners are included in decision making and provide feedback to educators). The report calls for the public sector to take a leading role in developing relevant skills. The role of legislation and regulation is considered, and particular emphasis is placed on the control of waste and carbon usage, while remaining fair to industry. The key element of this section relates to the appropriate use of regulation and legislation. <p>The report discusses the role of Government and its agencies in stimulating the demand for skills development, and the need to ensure that policies and assistance extend to SMEs. The concept of 'next practice' is included in this document. The report suggests that there is a need to look beyond the immediate future and to praise and learn from innovative concepts that appear ahead of their time.</p>	<ul style="list-style-type: none"> Findings from a round table meeting to discuss the necessary steps to developing skills for a low carbon and resource efficient economy Evaluation of policies and suggestion of strategies to tackle the issue 	<ul style="list-style-type: none"> An informative document with key considerations concisely detailed and carefully constructed A strong tool for informing future research and policy development Establishes what is and isn't working, and provides a list of priorities and who should be acting on them Many concepts are abstract in nature and the document talks theoretically, with limited working examples to

			Finally the role of the professional bodies should not be overlooked. The development of skills to assist LCREE needs to be a continuous aspect to ensure future sustainability.		support abstract concepts for development into FE/HE
009	High	HEFCE (2008) <i>HEFCE strategic review of sustainable development in higher education in England</i> . Available from: http://www.hefce.ac.uk/pubs/rcreports/2008/r03_08/rd03_08.doc .	<p>A detailed strategic review of the position of sustainable development (SD) in HE. The document has been produced to fulfil five core aims:</p> <ul style="list-style-type: none"> • to establish a baseline of SD in the sector, against which HEFCE can measure progress, and to inform the sector about what is already being done. The findings suggest that approximately two-thirds of HEIs are conducting research into sustainability, but no mention is made with regard to the progress of embedding ESD within the taught curriculum; • to allow a degree of learning from institutional experience about the conditions for embedding SD concepts, while outlining the barriers that are faced and the drivers that can influence change; • to identify key issues that present opportunities and challenges for the sector and investigate possible policy responses; • to evaluate HEFCE's approach and refine HEFCE's priorities; • to raise the profile of SD within the sector. <p>The report uses a tailored definition of SD that highlights the importance of environmental sustainability and the impacts that this can have on economic and social sustainability. Defining SD raised the issue that embedding ESD will not be possible without a standardised definition of the term.</p> <p>The document noted that an increase in focus on SD has been placed in HE institutions over the past 20 years. The barriers to embedding SD are also listed, and these have been noted to include: a lack of interest from educators and institutions; a lack of incentive; and conservatism of professional bodies. The report offers methods to take a more active role in driving SD: firstly, adopting targets for individual sectors; secondly, the promotion of a teaching method that includes 'SD literacy'.</p>	• n/a	<ul style="list-style-type: none"> • A comprehensive document that provides a critical analysis on the existence of SD in HE • Extensive detail is provided relating to the teaching of and research into SD, and also regarding the current trends in embedding SD in HE
010	High	Higher Education Academy (2009) <i>Education for sustainable development and global citizenship (ESDGC). Review of a curriculum audit in Wales</i> . Available from: http://www.heacademy.ac.uk/assets/York/documents/aboutus/wales/ESDGC_Wales_June_2009.pdf .	<p>The report examines the efforts of Welsh HE institutions at embedding ESDGC (Education for Sustainable Development and Global Citizenship) into university curricula. The report draws on the findings from a self-assessment auditing tool that evaluates the inclusion of educational content surrounding environmental SD, alongside economic and social SD.</p> <p>The report provides tables and statistical data from the STAUNCH audit tool, and from a student opinion survey.</p>	• Conclusions drawn from the Sustainable Teaching Audit for University Curricula in Higher Education (STAUNCH)	• A concise but detailed document that has benefited from the work conducted through other agencies into

			<p>Three categories of response emerged from the self-assessment:</p> <ul style="list-style-type: none"> • Some disciplines adopted a major process of embedding ESD curricula into undergraduate and postgraduate programmes (e.g. geography, earth science, engineering and materials). • The second category of disciplines had made limited progress in embedding ESD content, but acknowledged the potential for ESD inclusion (e.g. bioscience, economics, hospitality, philosophy). • The final category of disciplines had an interest in ESD content, but found it difficult to embed into the curriculum (e.g. information and communication technologies, mathematics, performing arts). <p>The document goes on to illustrate good practice examples of embedding ESD before considering the barriers that HE institutions face. Some of the most noted barriers included:</p> <ul style="list-style-type: none"> • teachers having a lack of confidence/experience; • the perception that ESD is exclusively an environmental concept; • the need for increased staff awareness and a call for additional training; • a congested curriculum and an anticipated increase in the workload; • a lack of funding to allow for an interdisciplinary approach. <p>The report advises the need for ESDGC promotion through a formalised committee/working group. It also suggests that a programme of “education for educators” should be introduced to ensure positive teaching methods. The need to increase student awareness of ESDGC was also highlighted. Finally the report calls for continuous monitoring and evaluation to ensure the quality of ESD content is consistent.</p>	<p>audit tool. Institutional self-assessment based on a three-point scale</p> <ul style="list-style-type: none"> • Does not assess the quality of ESDGC provided 	<p>embedding ESD</p> <ul style="list-style-type: none"> • Provides an extensive list of barriers, opportunities and challenges, all of which are drawn from first-hand experiences • Mixes qualitative and quantitative data to provide a good overview • Provides recommendations for: the audit methodology; institutions; HEFCW and the Welsh Assembly Government; and the Welsh institutional ESDGC Network Group
011	Medium	Higher Education Academy (2004) <i>Learning for sustainable futures (or Sustainability literacy in higher education)</i> . York: The Higher Education Academy.	<p>Short flyer identifying some of the core definitions in ESD and a public-facing rationale for the HEA initiative to develop ESD within FE and HE in terms of Campus, Curricula and Community.</p> <p>The flyer identifies a growing trend in student involvement in aspects of pro-environmental behaviours and the growing need for ESD as a discipline to be included within curricula, with a future-facing view to employability.</p> <p>An at-a-glance checklist of signs of sustainability awareness is provided (c. environmental auditing).</p> <p>There is a specific description of curricular inclusion and some broad identifiers of skills developed through ESD.</p>	<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • A positive introduction to the topic for those who are not directly involved in ESD • Future-facing document with a view to an emerging green economy • Some references are missing
012	Medium	Higher Education Academy (2005) <i>Sustainability</i>	This report gives a comprehensive overview of policy setting in the	<ul style="list-style-type: none"> • Six-month 	<ul style="list-style-type: none"> • Robust research

		<p><i>Literacy in Higher Education Current Practice and Future Developments</i>. York: The Higher Education Academy.</p>	<p>UK and outlines the HEA response. The report is based around an overview of a six-month investigation into how different subject disciplines in HEIs are contributing to sustainably literate graduates. The report covers an identification of good practice, barriers and opportunities for support in challenging these barriers. The headline finding of the report indicates that ESD coverage in HEIs is patchy.</p> <p>In identifying good practice, the research report covers new ways of teaching in different contexts:</p> <ul style="list-style-type: none"> • educators as role models and learners; • experiential learning; • holistic thinking. <p>Some disciplines are better placed than others to deliver ESD and as such a gradation over a three-point scale has been established in this research to cover the degree to which ESD has been covered within disciplines generally.</p> <p>Where ESD has been covered, this research cites two main ways in which this has occurred:</p> <ul style="list-style-type: none"> • courses have extended their boundaries to include more; • courses have taught more involvement in existing university initiatives. <p>A number of barriers and opportunities to overcome these were identified in the report:</p> <ul style="list-style-type: none"> • overcrowded curriculum, create space for ESD; • perceived irrelevance by academic staff, create credible and relevant teaching materials; • limited staff awareness and expertise, invest in staff development; • limited institutional drive and commitment, create a robust business case and mission statement. 	<p>investigation into how different subject disciplines in HEIs are contributing to sustainably literate graduates</p>	<p>and well-written report</p> <ul style="list-style-type: none"> • Good overview of the core issues, steps to approach these and drivers/barriers • More information on the relative effectiveness of specific approaches and the most appropriate disciplines for these approaches would be beneficial • More information is needed on student reactions and perceived need for ESD
Research					
013	High	<p>Forum for the Future (2008) <i>The Future Leaders Survey 07/08</i>. Available from: http://www.forumforthefuture.org/files/FutureLeaders0708_0.pdf.</p>	<p>The report focuses on the attitudes of future students towards potential development issues. Student opinions of environmental issues, society, religion, economics, politics, the role of business and Governmental issues are examined. The document provides an overview of attitudes, and can be used to observe the perceived relative importance of future issues.</p> <p>In relation to ESD, education institutions were ranked fourth with regard to responsibility to create change (36% of respondents mentioned education institutions as potential facilitators for change). The Government (84%), individuals (71%) and businesses (45%) were seen to be more important in instigating change. Campaign charities were mentioned by only 2% of respondents, but were recognised to make the most contributions to change, followed by Government</p>	<ul style="list-style-type: none"> • Data collected through a national survey of university applicants. 300,000+ applicants were approached, 25,000 (approx.) respondents. 7% response rate. Primarily opinion-based survey, 	<ul style="list-style-type: none"> • A core document that outlines existing attitudes and beliefs of future students towards issues surrounding a variety of important topics • Statistically grounded, the report identifies

			<p>and then by education.</p> <p>Global development issues and environmental issues were found to be the least influential factors (out of a possible 12) responsible for the choice of which university to go to, or which career to pursue. The findings from the review indicate the potential that ESD can have on developing attitudes of those entering HE institutions.</p>	<p>comprising predominantly of closed questions</p>	<p>significant trends in attitudes</p> <ul style="list-style-type: none"> • Highlights the potential for ESD in HE institutions • Limited in qualitative information to examine why such attitudes exist
014	High	<p>Cade, A. (2008) <i>Employable Graduates for Responsible Employers. Research on the Links Between Sustainability and Employability in the Graduate Job Market in Relation to Higher Education Teaching and Learning</i>. Available from: http://www.heacademy.ac.uk/assets/York/documents/ourwork/sustainability/EmployableGraduates2008.pdf.</p>	<p>The research was commissioned by the Higher Education Academy, with the aim to explore the link between sustainability and employability in the graduate job market in relation to HE teaching and learning.</p> <p>The findings from the report indicate that the graduate employability agenda is closely linked to employers' sustainable agenda. Increased evidence suggests that students want to work for more ethical employers. Also, many HE institutions are responding to the challenges of embedding ESD through institutional changes in campus, curriculum and community, but less so in regard to competencies and careers.</p> <p>The document outlines the findings related to students/graduates, employers and university career staff.</p> <p>The student/graduate survey covered a range of issues including: current environment behaviours; characteristics of potential future employers; responsibilities that employers should have; personal beliefs about sustainability; information collection relating to potential employers views/actions on sustainability; and to what extent universities contribute to preparing students for work.</p> <p>The stakeholder-specific findings provide the framework for the document to build a series of recommendations to develop linkages between sustainability and employability. Notably, the document identifies the need for educators to develop increased student awareness of corporate social responsibility (CSR) and sustainability through teaching.</p>	<ul style="list-style-type: none"> • The methodology focused on three main stakeholders, students/ graduates, university career staff and employers. Online questionnaires were designed for each stakeholder group. Structured interviews, focus groups and workshops were employed to collect the data. 	<ul style="list-style-type: none"> • Highly detailed and effective evaluations identify where linkages need to be established between teaching at HE level and employers, with particular attention focused on ESD • Supported by expansive statistical data and offers a reference list for further reading
015	Low	<p>Goodwin, R. (forthcoming) <i>Education for Sustainable Development and Ecological Citizenship in Higher Education: The Incidence of Transformative Learning at the University of Gloucestershire</i>. Report will be available from: http://resources.glos.ac.uk/ceal/activities/projects/postgraduate/rg.cfm.</p>	<p>The details that are provided for this PhD study note that while there is an inclusion of ESD content in some HE curriculums, there is little support relating to actions and to the education, and it is not translating to changes in individuals or institutions.</p> <p>The PhD research is being conducted using a cohort of students from their first year until they complete their university course. The study is looking to identify changes in student attitudes, values, aspirations and ambitions. It looks to uncover if these attributes</p>	<ul style="list-style-type: none"> • n/a 	<ul style="list-style-type: none"> • Relevant topic of interest, and is likely to produce valuable findings • Unable to draw any conclusions until the project

			change, and why this occurs. Please note that this is a description of a PhD topic, and is not yet completed.		has been completed
016	Medium	<p>Martin, S., Martin, M., Cohen, J. and Correo, R. (2006) <i>Sustainable Development in the Learning and Skills Sector: a National Baseline Survey</i>. London: Learning and Skills Network.</p> <p>Available from: https://crm.lsnlearning.org.uk/user/login.aspx?code=062427&P=062427PD&action=pdfdl&src=XOWEB.</p>	<p>This report outlines the findings from a national survey that aimed to record the current practice of sustainable development in the learning and skills sector.</p> <p>The document particularly focused on how SD is being implemented in: governance, leadership and management; managing building and estates; embedding SD into teaching and learning programmes; and engagement with the wider community.</p> <p>The main findings from the survey indicated that good practice examples of SD integration can be found with effective management, which is often supported by SD champions. Buildings and estates are shown to have utilised SD concepts in new builds and in maintenance aspects, but challenges of financial support still remain. SD content in education and training was seen in 70% of respondents, which emphasises the increased importance that ESD has in curricula. The report suggests that embedding ESD could be supported through the reformation of accredited courses to include SD, and this would have to be implemented through awarding bodies. Communicating the SD agenda through to the wider community and business appears to have limited success. One case study identifies the opportunity for students to feed their results back to the institution, but details of student attitudes and behaviours have not been disclosed.</p>	<ul style="list-style-type: none"> • A survey questionnaire was administered to 1,244 institutions, with 151 returning the completed survey at a 12% response rate. No details of who completed the surveys are provided. Follow-up visits were conducted to assess ten institutions 	<ul style="list-style-type: none"> • Detailed and deep analysis of the incorporation of SD into the learning and skills sector • Concisely covers the issues of embedding ESD into the learning and skills institutional curriculum
017	Medium	<p>BRASS (2010) <i>Sustainability Tool for Auditing Curricula in Higher Education (STAUNCH)</i>.</p> <p>Available from: http://www.brass.cf.ac.uk/projects/Rethinking_the_Future_for_Sustainability/rethinking-the-future-for-sustainability--STAUNCH.html.</p>	<p>A tool for measuring incorporation of SD into curricula.</p> <p>Description of the four main methods of incorporating SD into curricula:</p> <ul style="list-style-type: none"> • cover environmental material in the course; • add a specific ESD course; • intertwine SD within existing courses; • specialise in SD within academic faculties. <p>Several auditing tools exist for curricula, however the STAUNCH team feel that these are not holistic enough to cover all courses.</p> <p>The STAUNCH system incorporates 36 criteria over four aspects:</p> <ul style="list-style-type: none"> • environmental; • economic; • social; • cross-theme aspects. <p>Each of these criteria can be assessed over a three-point scale, 1=mentioned, 2=described and 3=discussed.</p> <p>There is no recording of student engagement or staff desire to include SD.</p>	<ul style="list-style-type: none"> • Discussion of statistical tool 	<ul style="list-style-type: none"> • Good encapsulation of 'softer skills' • More information needed on rationale for inclusion of 36 aspects • More information needed of student engagement and staff desire in order to effectively understand any tangible effects on behaviour

					change
018	Medium	Whitmarsh, L., Constantine, J. and Lourenço, S. (2010) <i>Sustainability as Taught and Understood within the Schools of Psychology and Earth & Ocean Sciences, Cardiff University</i> . Internal Document.	<p>A research report of ESD teaching and understanding at Cardiff University. Highlights the difficulties in integrating aims of ESD into policy – SD being a nebulous concept.</p> <p>The report implies that value-free research does not exist and therefore there is a call for the values to be pertinent to the now.</p> <p>The report covers a qualitative and quantitative investigation into staff and student attitudes and understanding of sustainability.</p> <p>Findings: qualitative coding found that staff and students' understandings of sustainability covered:</p> <ul style="list-style-type: none"> • maintain current level of resources for the future; • responsibly manage our use of finite resources; • conduct activities with long-lasting consequence. <p>The new environmental paradigm scale was used to demonstrate a generational shift in environmental concern with students generally more concerned than staff.</p> <p>Relevance of SD was shown to be low outside of environmental science and was generally not thought to be taught.</p> <p>An importance scale was used to demonstrate the perceived importance of SD values for students in their field.</p>	<ul style="list-style-type: none"> • Qualitative and quantitative paper-based questionnaire to 42 staff and 85 students at Cardiff University in the schools of Psychology and Earth Sciences 	<ul style="list-style-type: none"> • Strong academic methodologies • Small sample size • Raises the question “do students perceive a gap in staff/student awareness?”
019		Martin, M. (2005) <i>Sustainable Development and Education: The Impact of Sustainable Development on Teaching and Learning Styles in Higher Education Courses Delivered in Further Education Colleges</i> . Available from: http://insight.glos.ac.uk/tli/resources/toolkit/eal/Documents/MaureenMartinSustainableDevelopmentEducationSurveyReport.pdf .	<p>A concise analysis of a survey investigating sustainable development content promotes active learning approaches to teaching and learning. The survey was sent out to 150 colleges that had HEFCE-funded provision, as well as to members of the Environmental Association of Universities and Colleges (EAUC).</p> <p>50% of the respondents who had a sustainable development policy or strategy indicated that they promoted active learning styles.</p> <p>Classroom-based learning and business-related experience were found to be the most common methods of approaching active learning.</p> <p>91% of respondents were found to use active learning styles; however, only 15% of these believe it has contributed directly to the colleges' approach to sustainable development. There is no explicit link between active learning styles and sustainable development.</p> <p>The report suggests that most colleges are teaching skills to students that are in demand now, and less emphasis is placed on skills that are considered to be more relevant in the future.</p> <p>Active learning is said to offer a way into learning about the complexity and uncertainty of sustainable development, as well as challenging attitudes and behaviours. Active learning styles are also said to encourage exploration into the topic at a personal level.</p>	<ul style="list-style-type: none"> • Survey sent out to 150 colleges that had HEFCE-funded provision, as well as to members of the Environmental Association of Universities and Colleges (EAUC) • 22% response rate • Responses were subjected to quantitative analysis 	<ul style="list-style-type: none"> • An interesting report that considers how sustainable development content influences, and is influenced by, teaching and learning techniques • Helps to contextualise the role of ESD within the curriculum • Very specific to teaching methods, offers no advice/ experiences relating to embedding ESD content

020	Medium	<p>Selby, D., Jones, P. and Kagawa, F. (2009) Sustainability Promotion and Branding: Messaging Challenges and Possibilities for Higher Education Facilities. <i>Sustainability</i>. 1 (3), 537-555. Available from: http://www.mdpi.com/2071-1050/1/3/537/pdf.</p>	<p>An academic report identifying the issues surrounding the promotion and branding of sustainability within HEIs. Using six case studies, three from the UK (including the University of Bradford, Durham University and the University of Leeds) and three from the US (including the College of the Atlantic, Ithaca College and St. Lawrence University), the report outlines a variety of approaches that have been taken to highlight to prospective students the importance of sustainability within the institutions.</p> <p>Five core outcomes have been identified:</p> <ul style="list-style-type: none"> • marketing sustainability within institutions should be entirely authentic; • marketing should identify efforts that have already been made with regard to sustainability, alongside ongoing sustainability projects; • internal and external marketing should occur to ensure a solid and consistent message is provided for prospective students; • formal assessments should be undertaken to ensure that the information provided by HEIs is accurate and honest; • the relationship between employability and sustainability must be clearly identified. 	<ul style="list-style-type: none"> • Multiple case study methodology allows for additional validity when generalising findings • Provides documentation of practical examples taken by HEIs 	<ul style="list-style-type: none"> • Positive examples from established case studies • UK and US examples • Refers explicitly to branding and promotion of sustainability messages for universities looking to attract prospective students • Limited reference to pros and cons of embedding ESD into curriculum
021	High	<p>Steuer, N. and Marks, N. (2008) <i>University Challenge: Towards a well-being approach to quality in higher education</i>. Available from: http://www.eauc.org.uk/file_uploads/university_challenge.pdf.</p>	<p>This discussion paper explores the existing conceptualisations of quality in the HE sector. The current evaluations of quality within HE are found to be narrow and based on the interests of limited stakeholders.</p> <p>Current trends indicate a heavy focus on the economic value of learners emerging from HEIs with little emphasis directed towards the influence that learners can have on wider areas such as community, society and the environment.</p> <p>The observed trend shows that HE currently focuses on specialist and technical knowledge that supports economic growth, at the expense of developing wider knowledge, skills and understanding. Current measures of quality are through non-completion rates, graduate employment rates and graduate earnings. Quality is not measured by the influence that HE learners can have on wider communities, society or the environment.</p> <p>The paper calls for HEIs to take into account the transformative potential of learners, and to redefine quality accordingly. HEIs should provide content that educates learners about how to apply knowledge, to know how change happens, and to know about the dynamics of power and influence.</p> <p>Six features of a well-being-led approach to HE are detailed:</p> <ul style="list-style-type: none"> • provide knowledge for living as well as knowledge for working; • HEIs should help learners fulfil intrinsic motivations for learning; 	<ul style="list-style-type: none"> • Literature review and evaluation of the current trends in the HE sector 	<ul style="list-style-type: none"> • An important document that highlights the role that ESD can have in HE and the wider community, but also identifies a potential means to achieve the change • Demonstrates the importance of restructuring the evaluation of 'quality' within the HE sector • Indicates the significance of the role that individual learners can have in a wider context

			<ul style="list-style-type: none"> • move beyond formal leaning to make for an enjoyable and fulfilling experience; • enhance the qualities of autonomy and reciprocity; • provide a sense of connectedness and relatedness in teachings; • empowering learners to make changes. 		
022	Low	<p>Forward Scotland (2008) <i>A wellbeing framework for Scotland: A better way for measuring society's progress in the 21st century</i>. Available from: http://www.forward-scotland.org.uk/index2.php?option=com_docman&task=doc_view&gid=269&Itemid=209.</p>	<p>The report examines the possibility of the development of a practical index of well-being indicators that would provide an alternative means of measuring progress of social development. Indicators are split into six sections:</p> <ul style="list-style-type: none"> • family and relationships; • work and income; • physical and mental health; • the social context; • environment; • education. <p>Each section is then assessed at three levels: the individual level, community level and society level. Qualitative well-being indicators are supplemented by quantitative indicators where it is felt that the information provides additional insight into the qualitative indicator.</p> <p>The document identifies the framework as a good starting point for a comparative assessment of the success of different societies in delivering the fundamental building blocks of good quality of life for their citizens.</p> <p>The report goes on to provide details of future potential study. The most noteworthy of these suggestions is to develop the framework to allow for an international comparison. This brings to light the suggestion that the system should be designed to define the weighting of particular indicators to represent the cultural and societal perceived importance of each sector.</p>	<ul style="list-style-type: none"> • Desk-based review (limited information provided) 	<ul style="list-style-type: none"> • The wide focus of the report provides insights that may be considered in relation to the development of ESD content • Identifies key areas of social and community sustainable development • No details provided in relation to challenges of embedding ESD into the curriculum
023	Low	<p>Steuer, N., Thompson, S. and Marks, N. (2006) <i>Review of the environmental dimension of children and young people's well-being: A report for the Sustainable Development Commission</i>. Available from: http://www.sd-commission.org.uk/publications/downloads/NEF-review_of%20env_dimension_of_childrens_well-being.pdf.</p>	<p>The document reviews research that has examined the correlations between the environment and the physical and psychological well-being of children. It examines how the outcomes of the Every Child Matters (ECM) initiative can be met through the application of sustainable development principles.</p> <p>The ECM initiative is a national framework for co-ordinating and orientating the provision of children's services.</p> <p>The findings from the report indicate that a positive relationship exists between sustainable development and well-being. Respondents from local authorities indicated that the ECM agenda is said to be unachievable without the inclusion of sustainable principles. The report highlights a case to embed an environmental dimension more explicitly in the ECM framework.</p> <p>Contact with the natural environment is said to benefit children and</p>	<ul style="list-style-type: none"> • Desk-based research of existing academic findings, alongside relevant publications from Government, NGOs and other third sector organisations • Collection, collaboration and analysis of local authority findings 	<ul style="list-style-type: none"> • Interesting details and provides insights that are worth exploring in relation to the HE sector • The focus is on children and teenagers up to 19 years old – this has limited impact on HE as an equal focus

			<p>young people's development. However, the range and quality of the evidence provided through the report is said to be lacking. There is an inherent difficulty in evaluating the influence of natural environments in children and young people's development. The report concludes by making suggestions of 'levers for change', including:</p> <ul style="list-style-type: none"> • sustainable community strategies; • children's trusts; • children and young people's plans; • local area agreements; • OFSTED reports; • a manifesto for learning outside the classroom. 		<p>appears to be spread throughout the entire age spectrum</p> <ul style="list-style-type: none"> • Considers sustainable development inclusion beyond the education sector, which decreases the relative importance of the report to the HEA-funded project
024	Low	<p>Shah, H. and Peck, J. (2005) <i>Well-Being and the Environment: Achieving 'One Planet Living' and Maintaining Quality of Life</i>. Available from: http://www.neweconomics.org/sites/neweconomics.org/files/Well-being_and_the_Environment.pdf.</p>	<p>An interesting review of the role that the natural environment can have on the well-being of individuals. The paper calls for an increased appreciation and recognition of the benefits of natural environments at a local level. Benefits are noted in relation to health, child development, economics, community integration and reduction in crime rates. Little is mentioned with regard to the inclusion of sustainable development concepts in education, and the reader is left to draw their own conclusions with regard to the role that education sectors can play.</p>	<ul style="list-style-type: none"> • A desk-based review of articles relating to the role that the natural environment can have on well-being and economics 	<ul style="list-style-type: none"> • An interesting introductory read to highlight the significance of the natural environment in everyday life, and the role that sustainability can play • No details regarding the role of education and how embedding sustainable development content will be beneficial at the triple bottom line

025	Medium	<p>Chinien, C. (2003) <i>Skills to Last: Broadly Transferable Sustainable Development Skills for the Canadian Workforce</i>. Available from: http://www.unevoc.unesco.org/fileadmin/user_upload/pubs/SkillsToLast.pdf.</p>	<p>The report was produced to identify broadly transferable, sustainable development-related knowledge, skills and attitudes (KSAs) that are required by the Canadian workforce. The report collected data from two phases: Phase one was an extensive literature review, which identified KSAs that exist within the workforce; Phase two was a focus group conducted to validate the findings from the literature review. Six major themes emerged from the KSAs analysis:</p> <ul style="list-style-type: none"> • ethics and values; • integrated decision making; • responsible use of resources; • valuing diversity; • safety and well-being; • continued improvement. <p>Of the 588 KSAs that were found through the literature review, 161 were identified to relate to the environment, 258 relate to society and 169 relate to economics. A total of 211 of these were knowledge based, 222 were skills based and 155 were attitude based.</p>	<ul style="list-style-type: none"> • Extensive review of literature and research to identify knowledge, skills and attitudes towards sustainable development • Follow-up focus group to validate literature review. 23 participants who are working professionals in the fields of sustainable development, the environment, or workplace development 	<ul style="list-style-type: none"> • Highlights the presence of sustainable development KSAs within the Canadian workforce • Provides a framework for an evaluation of the presence of sustainable development KSAs within home nations • Can be used to highlight the need for ESD within HE as a result of workplace demands • Canadian-specific example, work would need to be conducted to provide a basis for home nation statistics
026	High	<p>Kagawa, F., Selby, D. and Trier, C. (2006) <i>Exploring Students' Perceptions of Interactive Pedagogies in Education for Sustainable Development</i>. Plymouth: Centre of Sustainable Futures, University of Plymouth. Available from: http://www.gees.ac.uk/planet/p17/fk.pdf.</p>	<p>This is a highly focused and relevant document that provides insight into the teaching methods that can be employed to ensure positive delivery of sustainable development content in HE. The report notes the lack of research that has been conducted into the examination of pedagogical techniques in relation to ESD. The authors acknowledge the need for shifts to occur in the learning approach in order to bolster the education provided to students. The suggestion is made that changes need to be made to ensure the following movements:</p> <ul style="list-style-type: none"> • from consumptive learning to discovery learning and creative problem solving; • from a teacher-centred to a learner-centred approach; • from individual learning to collaborative learning; • from theory-dominated learning to praxis-orientated 	<ul style="list-style-type: none"> • Field trip designed to test the educational value of an active pedagogical learning approach • Nine Masters students took part in pre-field trip and post-field trip, semi-structured interviews in October 2005 	<ul style="list-style-type: none"> • Provides in-depth results from the findings of a case study that identifies the strengths and weaknesses of an active pedagogical approach to learning • Identifies areas where typical HE teaching

			<p>learning;</p> <ul style="list-style-type: none"> • from content-orientated learning to self-regulative learning. <p>The findings from the study outlined that students’:</p> <ul style="list-style-type: none"> • developed more critical thoughts relating to sustainable development issues; • knowledge of sustainable development encompassed the complexity of putting sustainable development theory into practice; • understanding was broadened through discussions with those who have had first-hand experience of sustainability issues; • were encouraged to share knowledge and personal opinions with peers. <p>Overall there was a positive response to the learning techniques. Students identified the movement from being teacher orientated to learner orientated as a significant element to the success of the field trip.</p>	<ul style="list-style-type: none"> • Three students involved in retrospective semi-structured interviews in February 2006 	<p>methods are ‘lacking’</p> <ul style="list-style-type: none"> • Results are from the findings of one particular experience. More research would need to be conducted to ensure that the findings can be generalised
027	Medium	<p>City & Guilds (2008) <i>Skills Development: Attitudes and Perceptions</i>. Available from: http://www.skillsdevelopment.org/PDF/Final%20Report.pdf.</p>	<p>This report is from an international research project designed to build an understanding of the current issues faced by those with a stake in skills training around the world. The research aim was to enable City & Guilds: Centre for Skills Development to identify key priorities for those engaged in vocational education and training today.</p> <p>The positive findings indicate:</p> <ul style="list-style-type: none"> • vocational education and training is found to prepare employees for joining the workforce; • employers are found to get a return on their trading investment; • esteem in vocational courses is growing. <p>The negative findings indicate:</p> <ul style="list-style-type: none"> • there is a perceived ‘skills crisis’; • there are serious issues with leavers not finding employment after completing their training. <p>Some of the more detailed findings suggest:</p> <ul style="list-style-type: none"> • esteem for vocational education varies between countries; • parental attitudes are a barrier to higher esteem; • basic or general skills are less in demand than job-specific and technical skills; • technological developments have the most significant influence relating to the demand for training. 	<ul style="list-style-type: none"> • Three-stage methodology • First stage was desk-based research • Second stage was qualitative research including focus groups and in-depth interviews with employers and practitioners • Third stage was a qualitative survey administered to 2,000 practitioners and employers across nine countries and from a variety of sectors 	<ul style="list-style-type: none"> • Provides an interesting overview of the attitudes and perceptions of the role that vocational education and training can have within the workforce • Does not relate to skills relating to sustainable development and the potential for future inclusion
Other strategy/case studies					
028	High	<p>LSC (2008) <i>From Here to Sustainability – The Learning and Skills Council’s Strategy for</i></p>	<p>The 2008 Learning and Skills Council’s (LSC) Strategy for Sustainable Development document examines the progress that has been made</p>	<ul style="list-style-type: none"> • Desk-based analysis of the 	<ul style="list-style-type: none"> • Highly analytical approach to the

		<p><i>Sustainable Development</i>. Available from: http://readingroom.lsc.gov.uk/lsc/National/nat-sustainabledevelopmentactionplan200708-re-aug2008-v1-0.pdf.</p>	<p>since 2005 with regard to the implementation of the LSC strategy for embedding SD. The report identifies the key actions that have been implemented and the key challenges that are faced by LSC in implementing this strategy.</p> <p>The overall strategy focuses on four areas of sustainability, environmental sustainability, natural resource protection, social sustainability and economic sustainability. The strategy aims to encourage SD through:</p> <ul style="list-style-type: none"> • an increased involvement with the positioning of the sector to accommodate ESD; • maintaining and developing sustainably developed buildings and estates; • encouraging SD into the curriculum; • encouraging community involvement in an overall approach to SD. <p>The conclusions from this report outline that while progress has been made in each of the four areas, this progress has not been balanced. The document provides an extensive analysis of actions that have been taken by both ESD providers and by the LSC. The main area of weakness that is identified is the role that FE institutions are playing. Limited actions have been implemented by FE institutions, and the LSC calls for further co-operation between these institutions and the rest of the sector.</p>	<p>progress that has been made by the LSC's strategy for sustainable development. Draws on implemented examples in a range of areas</p>	<p>existing strategy to embed ESD into the learning and skills sector</p> <ul style="list-style-type: none"> • Extensively researched and draws upon working examples of implemented actions • Limited application to other strategies as the focus is on the LSC strategy, although some findings may be generalised
029	High	<p>ECOTEC/LSC (2007) <i>The Implementation of an Internal Baseline Survey of Sustainable Development across the Learning and Skills Council (LSC)</i> A Draft Report to the Learning and Skills Council (LSC)</p>	<p>A survey of 939 LSC employees, representing at 30% response rate. 80% of employees had a moderate or high awareness of sustainability, with a trend towards the highest awareness in the more senior roles. More than half of respondents saw the benefit of sustainability but only 12% had been trained in sustainable behaviours. An informal office champion role was reported as having a limited impact. Only 11% of staff were aware of examples of SD in the curriculum, but 28% had worked on initiatives surrounding this. Moreover the link between SD and curriculum was seen to be weak.</p>	<ul style="list-style-type: none"> • Sample of 939 LSC employees (30%) at all levels and with geographic spread 	<ul style="list-style-type: none"> • A useful internal feedback document to ensure that LSC initiatives were embedded among staff • Top-down strategy had led to more junior staff being unaware of key aims and initiatives
030	High	<p>HEFCE (2010) <i>A carbon reduction target and strategy for higher education in England</i>. Available from: http://www.hefce.ac.uk/pubs/hefce/2010/10_01/10_01a.pdf.</p>	<p>The report outlines a revised strategy for carbon reduction for HE institutions in England. The document details the demand for HE institutions to assist in meeting national targets for carbon reduction. It is made clear that the targets that are set are only relevant with the implementation of an effective strategy.</p> <p>Using statistics to detail the contributions that the HE sector make to carbon emissions, the document outlines the why the need for action exists. Some of the key points that are addressed in the</p>	<ul style="list-style-type: none"> • Primarily desk-based research drawing on statistics and policy documents to inform the formation of strategy 	<ul style="list-style-type: none"> • Provides core information in a concise manner. Identifies and justifies the need for action to reduce HE contributions to

			<p>document include:</p> <ul style="list-style-type: none"> • the need for institutions to set their own targets; • the commitment from institutions to achieve actual improvements through implemented actions; • rewarding institutions for meeting targets; • the need for continuous monitoring and evaluation; • a widespread agreement that HE institutions need to contribute to national efforts with regard to carbon emission reductions. <p>Limited reference is made to the importance of behaviour change, although it is seen as an important aspect to developing an effective strategy.</p> <p>The document identifies key areas that can be acted upon to contribute to the carbon reduction (e.g. waste, travel, recycling, carbon offsetting, teaching and learning, etc.).</p>		<p>carbon emissions</p> <ul style="list-style-type: none"> • Builds strongly on existing strategy details and identifies challenges that are likely to emerge when actions are implemented
031	Medium	<p>LSC and ESD Consulting Ltd (2009) <i>Embedding Sustainable Development in the Curriculum: Guidance for Staff Within Learning Institutions on How to Embed Sustainability into What and How They Teach</i>. Available from: http://www.eauc.org.uk/sorted/files/embedding_sustainability_in_the_curriculum_guide.pdf.</p>	<p>A how-to document aimed at learning providers, which recognises the perceived risk in adopting ESD into courses at colleges of FE. The document includes suggestions as to how to embed ESD into vocational and academic qualifications, with a ten-step supportive summary.</p> <p>Examples are given covering:</p> <ul style="list-style-type: none"> • tutorials; • short courses; • key skills and skills for life; • projects; • community as a learning resource; • the workplace as a learning resource; • enriched curriculum. 	<ul style="list-style-type: none"> • Based on desk research and phone and face-to-face research with curriculum practitioners at 35 colleges of FE in England, Scotland and Wales 	<ul style="list-style-type: none"> • Practical document for learning providers • Fails to provide wider context or more generalised advice beyond case studies
032	High	<p>LSC (2009a) <i>Creating the Conditions for Embedding Sustainable Development in the Curriculum</i>. Available from: http://www.eauc.org.uk/sorted/creating_the_conditions_for_embedding_sustainable_development_in_the_curriculum.pdf.</p>	<p>A current take on the need for SD informed by desk research, to meet their stated need that leaders should be taking action and that this should be quick and ambitious.</p> <p>The document consists of a how-to guide for creating conditions to allow SD to be embedded in the curriculum, sharing case studies and good practice.</p> <p>The report aims to support senior management buy-in in FE institutions and defines ESD plus key knowledge, skills and attitudes in ESD.</p> <p>Informed case studies in ESD are included from colleges of FE, covering:</p> <ul style="list-style-type: none"> • leader commitment; • entrepreneurship; • networking; • training staff. <p>A management audit tool is provided at the end of the document for monitoring ESD.</p>	<ul style="list-style-type: none"> • Desk research of case studies from colleges of FE 	<ul style="list-style-type: none"> • A catalogue of information for relatively ESD-naïve leaders • A how-to development guide identifying how to ensure senior level buy-in

033	High	<p>Martin, S., Martin, M., Cohen, J. and Aitken, L. (2009) <i>Contributing to sustainable development: Centres of Vocational Excellence</i>. London: Learning and Skills Development Agency. Available from: http://www.eauc.org.uk/sorted/files/contributing_to_sustainable_development.pdf.</p>	<p>As part of the Department for Education and Skills (DfES) action plan, this document aimed to increase the ways in which providers of FE and vocational services operate in a sustainable manner and to educate people about SD issues.</p> <p>The creation of Centres of Vocational Excellence (CoVEs) was central to this aim. CoVEs aim to include concepts of SD when educating the existing workforce, and new entrants to the workforce.</p> <p>The report assesses the contribution made to SD through the vocational curriculum, alongside the impact that SD policy has had on design, development and purchase of new facilities and equipment in the CoVE institutions. The report also considers the contribution made to SD through community engagement, and the influence and roles of employers.</p> <p>The questionnaire produced statistical findings. 92% of respondents had integrated SD into teaching. Some of these respondents highlighted the importance of detailing the economic and social benefits of environmental sustainability. 86% of new facilities had been developed to national or international standards (e.g. ISO 14000 or EMAS). 85% of respondents noted a range of ways to encourage community engagement.</p> <p>The case studies indicated that existing environmental policies and strategies were key to the development of SD facilities.</p>	<ul style="list-style-type: none"> • Questionnaire survey to 260 CoVEs, with a 20% response rate. Followed up with case study visits for qualitative observation, and interviews with staff from eight specialist vocational areas 	<ul style="list-style-type: none"> • Qualitative and quantitative examination into the performance of CoVE institutions including SD • Case studies allow for a deeper analysis of certain institutions and provide working examples of SD in practice • The focus of the paper relates to institutional efforts and staff opinions, there is no information about student attitudes or responses
034	High	<p>UNESCO (2009) <i>Review of Contexts and Structures for Education for Sustainable Development</i>. Available from: http://www.unesco.org/en/esd/publications/linklist/getviewclickedlink/1365/.</p>	<p>This review examines the progress that the UN Decade of Education for Sustainable Development (DESD) has made after five years. The review assesses key indicators – policy regulatory and operational measures that support ESD:</p> <ul style="list-style-type: none"> • promotion of SD through formal education; • measures taken to equip educators with competencies to include ESD in teaching; • measures taken to develop public awareness and understanding through non-formal and informal learning; • measures taken to promote research and development of ESD; • measures taken to strengthen regional and international operation of ESD. <p>The review outlines issues surrounding regional contexts and issues relating to ESD in the developing world, the differences in meanings of ESD across the world. The work also reviews national policies and frameworks for ESD, but the review fails to address the relative effectiveness of these.</p> <p>The concluding remarks of the report outline the potential avenues to advance the implementation of ESD. Some of the most</p>	<ul style="list-style-type: none"> • The review collaborated data from a questionnaire survey (with 97 countries participating), complementary research (a review of existing reports and research articles), a multi-stakeholder consultation process, and a UNESCO self-assessment 	<ul style="list-style-type: none"> • A thorough assessment of the progress made to date through the DESD programme • Concisely written, but comprehensive • Creates avenues for potential future research • Mainly grounded in theory, and tackles a very broad subject which hints at potential for generalisation

			noteworthy recommendations included: increasing the awareness, meaning and scope of ESD; the reorientation of curricula, teaching and learning to encourage ESD; increased research, monitoring and evaluation; the development of national networking; and the co-ordination of government and NGOs to tackle the challenges and obstacles.		
035	High	NUS Scotland and NUS Services (2010) <i>Student Footprints: College Project Report</i> . Internal Document.	<p>The report summarises the progress that has been made at empowering students to take a leading role to reduce the carbon footprints of the communities in which they live. The project has been successful in supporting student-led activities and has been acclaimed as an innovative model that encourages students to play an active part in reducing carbon emissions. Over 60 students have been trained in carbon auditing skills, enhanced employability and other skills. Students have recognised the other skills to include:</p> <ul style="list-style-type: none"> • knowledge of sustainable development; • understanding of organisational management; • understanding of energy efficiency; • self-motivation; • networking; • organisational skills. <p>The report highlights the scheme to be valuable to a wide variety of student cohorts. It offers itself as a positive working example of how student-led activities can extend to the wider community.</p>	<ul style="list-style-type: none"> • Assessment of the progress of the Student Footprints project • Combination of desk-based assessment and data collection through interviews with students that have been involved 	<ul style="list-style-type: none"> • Provides an insightful look into the workings of a case study example • Identifies the potential to develop a range of skills to increase the employability of students with involvement in sustainable development campaigns
SCOTLAND					
036	Low	Moir, J. (2010) <i>First things first: the first year in Scottish higher education</i> . Available from: http://www.enhancementthemes.ac.uk/themes/21stCGraduates/outcomes.asp .	<p>The document details the progress that has been made by the 'Enhancement Theme' in the Scottish HE sector. The programme has been designed to enhance the student learning experience. The report analyses the progress that has been made during the first year of the programme. This theme included education to allow for the empowerment of students to have a say in how and what they are taught, and aspects relating to increasing the employability of students.</p> <p>The Enhancement Theme increases focus on personal experience and social values in relation to the subject disciplines that are being taught at HE institutions. The author identifies an enhanced approach to curriculum design, assessment and feedback as a result of the implementation of the Enhancement Theme.</p> <p>The review of this programme also identifies a change of focus from being teacher orientated to learner orientated. There was also recognition of the need to prepare students with skills that are relevant to the modern economy and society, while developing an interdisciplinary approach to education.</p>	<ul style="list-style-type: none"> • Desk-based evaluation of the development and implementation of the Enhancement Theme into the Scottish HE sector 	<ul style="list-style-type: none"> • Provides a good overview of the progress that has been made by the Enhancement Theme • Quite opinionated and does not draw on facts, figures or case studies to illustrate claims • Highly specific to the Enhancement Theme and does

					not allow for wider generalisation
037	High	Ryan, A. (2009) <i>2008 Review of Education for Sustainable Development (ESD) in Higher Education in Scotland</i> . Higher Education Academy ESD Project. Available from: http://www.heacademy.ac.uk/assets/York/documents/ourwork/sustainability/SFCesd08Review.pdf .	<p>The review outlines the position that the HE institutions of Scotland have taken with regard to embedding ESD.</p> <p>The general findings from a 2006 report indicated that there has been an increased amount of research activity and research capacity relating to SD. However, few signs of strategic engagement or curriculum evolution were noted.</p> <p>The 2008 findings provided a more positive view. Strategic engagement to embed ESD had been seen alongside an increased ownership of academics to encourage the inclusion of ESD into the taught curriculum. 87.5% of HE institutions were found to have made public commitments to sustainability at an executive level. 50% of the HE institutions had explicit policies or had incorporated sustainability into strategic plans. 50% of HE institutions had made specific commitments to research relating to sustainability, and 43.75% had made commitments to knowledge exchange targeted at sustainability. Overall a trend has been noted that the sector is moving towards further embedding ESD into the curriculum, even with the absence of a top-down policy.</p> <p>The document calls for increased support at sector and institutional levels to continue the current trend. It is also suggested that additional progress will be made if funding is provided in conjunction with strategy implementation. Finally, the need to establish linkages between the HE sector and business and community is identified. There was no mention of student opinions, attitudes or demands.</p>	<ul style="list-style-type: none"> • Questionnaire survey to a range of staff at all of the Scottish HE institutions, with a response rate of 80%. Four case studies examined the academic approaches to sustainability. Followed by 26 qualitative interviews 	<ul style="list-style-type: none"> • A comprehensive and informative review with excellent detail from a well-considered methodology • Statistical data is backed up with sound examples emerging from case studies and interviews
038	High	Salter, J. (2009) <i>Scotland's Colleges Sustainable Development Education Survey: A report for the Scottish Funding Council</i> . Available from: http://www.sfc.ac.uk/nmsruntime/saveasdialog.aspx?IID=2356&slD=349 .	<p>The review considers Scotland's colleges progress at embedding ESD into the curriculum. Data were collected through a questionnaire that was administered to 32 colleges.</p> <p>The overall findings indicated that colleges in Scotland were performing well in relation to the baseline findings from the Forster 2006i assessment. It is suggested that the positive trend that has been noted is likely to continue.</p> <p>90% of respondents were found to reference ESD concepts within strategic plans, and most colleges claim to deliver elements of ESD within the curriculum. Further to this, a number of colleges included in the survey have suggested themselves as sustainable development champions.</p> <p>Variations in the approach to ESD provision have been noted, and there is no general route to the progress of this development. This outcome is likely to have emerged because the lack of top-down policy and strategy implementation allows for a more organic development of methods of ESD inclusion. The existence of individual sustainable development champions within institutions has</p>	<ul style="list-style-type: none"> • 43 principals of Scottish colleges approached to take part in a questionnaire survey, 32 agreed (75% response rate). The questionnaire template is provided in the appendix 	<ul style="list-style-type: none"> • Concisely written and constructed, pulling out pertinent issues relating to the progress that has been made by FE institutions in Scotland with regard to inclusion of ESD principles • Transparent information provided regarding data

			been outlined as integral to the increased progress towards embedding ESD into the curriculum.		collection • Response to baseline survey allows for direct comparison of performance
039	Medium	The Scottish Government (2010) <i>Learning for change: Scotland's action plan for the second half of the UN decade of education for sustainable development</i> . Available from: http://www.scotland.gov.uk/Publications/2010/05/20152453/7 .	<p>Relating to the UN Decade of Education for Sustainable Development (DESD) (see 034) this report outlines Scotland's response to the suggestions made in the DESD document and it details the progress that has been made to date.</p> <p>The document outlines the aims that Scotland is striving to achieve: the integration of ESD into all stages of formal education; a lifelong opportunity to learn; the understanding of, and action relating to, the message of sustainability; and the sharing of skills and knowledge through strong networks and partnerships.</p> <p>The report provides a concise summary of the progress that had been made at the mid-decade stage. A background of information regarding what ESD is and the potential benefits from increasing ESD awareness are provided. Examples include: increasing the opportunity for 'real-world' learning; increased relevant skills and employability; learning to make better use of natural resources in the community; and more efficient governance and policy making.</p> <p>The core element of the report provides information relating to the targets for the following five years. These targets include: building upon the existing momentum of the attitudes and behavioural changes in the education sector; developing new networks to allow for information, knowledge and experience to be shared and to offer support; to look for new, innovative approaches to embedding ESD; and to support development and leadership relating to embedding ESD. Details of actions for schools, colleges and universities, as well as lifelong learning are detailed.</p>	<ul style="list-style-type: none"> • Desk-based research into the performance of Scotland's education system at embedding ESD in relation to the DESD UNESCO report 	<ul style="list-style-type: none"> • Provides background to the DESD agenda, outlining the potential benefits that may emerge from the inclusion of ESD concepts • Concisely details the future actions for schools, colleges and universities, and lifelong learning opportunities to aim towards • Limited in details of how to achieve the objectives for the next five years
WALES					
040	High	SQW consulting (2009) <i>Education for Sustainable Development and Global Citizenship (ESDGC): Analysis of Good Practice in Welsh Higher Education Institutions</i> . A report to the Higher Education Funding Council of Wales (HEFCW). Available from: http://www.hefcw.ac.uk/documents/about_he_in_wales/wag_priorities_and_policies/SQW%20ESDGC%20Final%20Report.pdf .	<p>The document assesses the Welsh HE sector's engagement with ESD and global citizenship (ESDGC). The report addresses the progress that has been made with regard to the inclusion of ESDGC within HE institutions.</p> <p>The report notes that several factors are responsible for the effectiveness of the implementation of ESDGC content in HE institutions (i.e. size of the institution, number of staff, number of students, etc.). The report has also found that implementation of ESDGC content has been patchy within the HE sector, and it is often the case that individuals are responsible for driving stand-alone projects. The main taught element of ESDGC relates to</p>	<ul style="list-style-type: none"> • Four stages to data collection have been noted: 1) a policy review of national and international documents; 2) a review of strategies and plans by HE institutions in 	<ul style="list-style-type: none"> • An all-inclusive approach covering a range of pertinent issues relating to the challenges, barriers and opportunities that the Welsh HE sector faces

			<p>environmental sustainability, with little focus on social sustainability and global citizenship. This trend may relate to a lack of common definition for SD and GC. The international policy comparison found the same trend of a focus on environmental sustainability. ESDGC has a high priority in Welsh policy, but this does not always filter down to HE institutions. The report calls for institutional commitment, and for more research into ESDGC; however, acquiring funding appears to be the main challenge. The importance of establishing a baseline for future progress to be measured against is also identified.</p>	<p>Wales (from 2006 to 2008); 3) stakeholder consultation; and 4) case study visits and interviews with all HE institutions</p>	
041	High	<p>Department for Children, Education, Lifelong Learning and Skills, Welsh Assembly Government (2009) <i>Education for Sustainable Development and Global Citizenship: A Strategy for Action – Updates (January 2009)</i>. Available from: http://www.esd-wales.org.uk/english/ESDreports/pdf/D674_English.pdf.</p>	<p>The report is an update on the action plan for the Welsh education sector between 2006 and 2009. The strategy for embedding ESDGC is designed to cover lifelong learning and all education sectors. Common areas for focus are listed, and these include: commitment and leadership; teaching and learning; institutional management; research and monitoring; and resourcing (both financial and human). The overall recommendations include the need to evaluate the progress that has been made in each sector in order to establish a baseline. The need to disseminate information on good practice is also noted.</p> <p>Short-term actions include the need to raise awareness of ESDGC, encourage its development and to recognise successful attempts at ESDGC inclusion.</p> <p>Recommendations relating to all sectors include: increased support from the sector to encourage the ESDGC panel to become more proactive rather than responsive; and the need for common standards of ESDGC to be developed.</p> <p>Actions have been assessed to indicate the priority areas for schools, youth, FE and work-based learning sectors, the HE sector, and the adult and continuing learning sector.</p>	<ul style="list-style-type: none"> • Desk-based analysis of the implementation of actions made between 2006 and 2009 	<ul style="list-style-type: none"> • A critical assessment outlining the progress made by the Welsh education sector at including ESDGC concepts • Identifies areas that will need to be concentrated on, across the whole of the education sector, in order to achieve the actions outlined
042		<p>BRASS (2010) <i>Sustainability Tool for Auditing Curricula in Higher Education (STAUNCH)</i>. Available from: http://www.brass.cf.ac.uk/projects/Rethinking_the_Future_for_Sustainability/rethinking-the-future-for-sustainability--STAUNCH.html.</p>	<p>A short overview of the <i>Sustainability Tool for Auditing Curricula in Higher Education (STAUNCH)</i>. STAUNCH was designed to allow Welsh HEIs to measure their contributions to teaching from a sustainable development perspective.</p> <p>It was developed to undertake a systematic audit of curricula across Cardiff University's undergraduate teaching.</p> <p>STAUNCH evaluates course descriptions against 36 criteria divided into environmental, social and economic aspects, alongside cross-cutting themes linking the three core aspects. The cross-cutting themes include long-term learning, sustainable development ethics and philosophy.</p> <p>The tool evaluates the balance and strength of these themes within teaching. Comparisons can be drawn between institutions as the same tool was rolled out across HEIs in Wales.</p>	<ul style="list-style-type: none"> • Descriptive overview of STAUNCH 	<ul style="list-style-type: none"> • Provides basic background knowledge of the history and application of STAUNCH • Positive working example • Limited details provided

NORTHERN IRELAND

043	Low	<p>Office of the First Minister and deputy First Minister (2010) <i>Everyone's Involved: Sustainable Development Strategy</i>. Available from: http://www.ofmdfmi.gov.uk/sustainable-development-strategy-lowres_2_.pdf.</p>	<p>The Northern Irish Sustainable Development Strategy aims to identify and develop actions that improve the quality of life for current and future generations. The goal is to encourage sustainability within economics, society and the environment. The core feature to this strategy document outlines the commitments that have been made to encourage sustainable development. Twenty commitments have been outlined. Some of the more noteworthy of these include:</p> <ul style="list-style-type: none"> • the utilisation of 'sustainability scans' to ensure future policy and strategy documents include sustainable concepts; • an increased level of international networking to allow for knowledge and experiences to be exchanged; • an increased dissemination of knowledge and skills nationally; • the publication of an implementation plan to allow for continuous monitoring and evaluation. <p>Stakeholder representation to ensure an equal focus is spread across the board to allow for equal focus on sustainability in the economy, society and the environment.</p>	<ul style="list-style-type: none"> • Desk-based research into existing policies relating to sustainable development, building the strategy around these documents 	<ul style="list-style-type: none"> • A positive starting point for strategy development • Requires information to be provided to inform those taking action on how to achieve the goals • Many commitments are abstract notions and require working examples to make the concepts more concrete
044	Medium	<p>Education and Training Inspectorate (2010) <i>Report of an Evaluation on Effective Practice in Education for Sustainable Development in a Sample of Primary, Post-primary and Special Schools in Northern Ireland</i>. Available from: http://www.etini.gov.uk/index/surveys-evaluations/surveys-evaluations-post-primary/surveys-evaluations-post-primary-2010/effective-practice-in-education-for-sustainable-development-in-a-sample-of-primary-post-primary-and-special-schools-in-northern-ireland.pdf.</p>	<p>The report outlines the results from a survey to identify good practice of ESD within Northern Irish schools. The survey considered the integration of environmental education and sustainable development concepts within teaching environments. The aim of the report was to highlight the characteristics of effective ESD.</p> <p>A number of characteristics that were found to be common among effective ESD programmes. Some of these identified characteristics include:</p> <ul style="list-style-type: none"> • whole school efforts and a culture for promoting ESD; • having ESD clearly embedded into the curriculum; • highlighting the benefits to learners engaging with ESD content; • increased participation with external award/accreditation schemes and projects; • establishing linkages with NGOs and other organisations; • encouraging out-of-classroom learning; • building community links and cultural diversity; • developing global awareness. <p>The document makes recommendations relating to good practice examples to encourage schools and learning/skills providers to increase their involvement. Included in these recommendations are:</p> <ul style="list-style-type: none"> • the need for integration of ESD into development plans; • recognition of the local and the global aspects of ESD 	<ul style="list-style-type: none"> • 25 school visits, 58 questionnaire respondents, a representative stakeholder discussion, and desk-based research informed the report 	<ul style="list-style-type: none"> • Directly covers the situation within Northern Irish schools • Identifies key areas to allow for future policy/strategy documents to draw from for good practice concepts • Limited in the scope of application outside of the Northern Irish education sector

			<p>concepts;</p> <ul style="list-style-type: none">• the need for ESD to be taught to a consistently high quality;• ensuring that ESD is promoted and taught across the curriculum.		

Appendix 2: Interim report of desk research

HEA desk research summary

Summary of findings from a structured desk research review of first-year attitudes towards and skills in sustainable development

I. Executive summary

I.1. Aim

NUS Services are conducting work on behalf of the Higher Education Academy (the HEA) into first-year attitudes towards, and skills in, sustainable development. The aim of this research is to use existing work to inform empirical research, which will input into a report including recommendations to the HEA on current attitudes towards, and skills in, sustainable development (SD) in light of historical, current and likely future policy.

I.2. Methodology

A structured desk review to inform empirical research was conducted July to August 2010, recorded on desk research summary grids covering:

- education for sustainable development (ESD) policy in further education and higher education;
- existing research into student attitudes towards, and skills in, sustainable development;
- exemplary case studies with current and future-facing relevance.

I.3. Core findings

- Delivery of education for sustainable development is disjointed at a national level.
- Some excellent case studies across the member nations account for only a minority of colleges of further education and higher education institutions.
- ESD is considered a nebulous concept; a nationally accepted working definition is required.
- A standard assessment procedure across the four member nations will allow understanding of national progress.
- Communication of the tangible benefits of inclusion of SD in curricula is necessary to secure national buy-in in further education (FE) and higher

education (HE).

- Student attitudes towards SD have not been extensively covered; there is a national need to understand student demand.
- Scotland and Wales lead the UK in understanding the impact of ESD with national baselining studies completed.

1.4. Recommendations for empirical research

Further to the empirical research aims developed in the research tender, the following recommendations are made:

- understand student attitudes to sustainability issues;
- understand student definitions of sustainability;
- explore aspirations towards ESD;
- identify student attitudes towards potential future policies to include SD within the curriculum;
- examine student awareness of the future green economy and skills needed.

2. Introduction

Desk research has been conducted to review a range of documents relating to ESD policy, existing research and strategy. The research aims are threefold:

- to provide a wider policy context for SD in further education in the UK with a key focus on advances made post 2005;
- to illustrate existing policy with short case studies indicating the principal initiatives for SD in further education in the UK, based on existing research;
- to understand historically first-year student skills and knowledge in relation to SD based on existing research.

This summary document provides an overview of the structured search methodologies and discusses the pertinent issues from policy documents, research reports, case studies and summaries of national approaches.

3. Methodology

Two strands of structured desk-based research have been undertaken to form a platform informed delivery of the empirical work, which will take the form of a national online survey.

To provide holistic foundations for this empirical work, existing publications and datasets on student attitudes, skills, unmet needs and perceived wants have been examined in a structured review into recent (post-2005) policy documents relating to ESD, following resource consultation within the project steering group.

In keeping with the proposed project objectives, core stakeholders included Forum for the Future, StudentForce for Sustainability, HEFCE, Business in the Community, LSC, DECC and BIS. The platform of knowledge formed from these core documents has been further developed through additional literature searches, wider national partnerships held by the NUS and NUS Services and steering group input.

Reports have been critically reviewed and a robust recording strategy onto structured review grids has allowed evaluation of the methodological approaches undertaken to inform the documents and outlined any issues of validity or potential bias.

4. Desk research summary

In keeping with the three core content aims of the desk research, the review was structured around the pivotal aspects to ESD:

- policy within the UK (post 2005);
- research into existing student attitudes and skills in ESD;
- exemplary case studies at local levels within the UK.

A future-facing strategy was employed in order to ensure that research was conducted with a view to understanding not only existing student attitudes and skills in ESD, but with a wider awareness of how policy and local case studies may have impacted these attitudes. Particular attention has been paid to understanding evidence gaps, with regard to both the short-term and longer-term needs.

4.1. Policy within the UK (post 2005)

Findings from the structured desk research in to policy in ESD revealed a trend towards general discussion towards policy setting on the triple bottom line of environmental, social and economic sustainability. Insight into the practicalities of delivering SD within the curriculum was less well developed, although BRASS (The Centre for Business Relationships, Accountability, Sustainability and Society) highlight four key methods to incorporate ESD content into the curricula: cover environmental material in the course; add a specific ESD course; intertwine ESD with existing courses; and specialise in SD within academic facilities.

In general, many of the supporting bodies for education and funding agencies describe the linkages between the triple bottom line elements and outline the potential benefits that can occur as a result of incorporating policies and strategies to encourage sustainability.

Findings from HEA (2009), HEFCE (2008), BIS (2010a) and DCSF (2010) indicate that progress has been made with regard to embedding ESD into the curriculum of FE and HE institutions; however, there is no set development process or route. Four challenges have been consistently iterated within a number of documents:

- There is a perception that the curriculum is already overcrowded, and including sustainability issues into it will end up restricting the depth of the educational quality. An unmet need exists to articulate the need for a reframing of course content rather than the addition of further course components.
- There is a perceived irrelevance of the ESD content to many subject disciplines. Those teaching subject disciplines that are distant from the ESD content (e.g. mathematics, English, arts, and languages) typically fail to see how ESD can be included in their teachings.
- ESD content is avoided when teaching staff feel as though they don't know enough about the issues surrounding sustainability, hence training opportunities exist.
- A further challenge arises from a limited institutional drive to encourage the embedding of ESD into the curriculum.

In addressing these challenges, arises the need for a standardised and acceptable definition of sustainable development beyond that of Brundtland (1987) in order to offer tailored advice to FE and HEIs. A consistent definition across the sector and a standard assessment procedure will support a coherent and future-facing measure of progress across the sector nationally, and will allow for development of tailored toolkits for incorporation of good practice.

A number of policy recommendations have been suggested to encourage and enable ESD inclusion in the curriculum within FE and HE, however there is limited incentive for leaders of these institutions to buy in to ESD without an individual conviction that ESD is beneficial to the institution.

That said, an increased inclusion of ESD within HE institutions in the UK has been recorded by the Learning and Skills Network (Martin et al, 2006), alongside an increased recognition of the validity of ESD content.

While some progress has been identified, improvements in embedding ESD can still be made. The findings indicate a requisite to highlight the link between skills that

are taught through ESD and employability.

Given these challenges, there is a call to communicate the triple bottom line of curricular inclusion of ESD and to identify the relationship between ESD and employability, considering the perceptions of students/graduates and of employers. The student experience of ESD has not been well documented; however, it is likely to provide valuable feedback to examine the quality of ESD provided within the HE curriculum.

4.2. Research into existing student attitudes and skills in ESD

A review of existing research into student attitudes and skills in awareness has covered a breadth of aspects including student attitudes and opinions to the sustainability field, the role that education providers can have at encouraging environmental change, and exploration of the link between sustainability skills and employability. Key champions of robust research into this field include Forum for the Future (FftF), the HEA and the LSN.

Research indicates that educational institutions are perceived by university applicants to be the third highest contributors to the encouragement of positive environmental behaviours and attitudes (behind campaign charities and Government) (Forum for the Future, 2008). However, paradoxically, in relation to the importance in choosing a university, environmental issues are not highly rated. These results are representative of the psychological distance between student attitudes towards environmental issues, and their behaviours. This research also indicates the lack of awareness of the skills that emerge from ESD which can be applied to employment and careers.

Further to this disconnect between sustainable literacy and employability, research into the understanding of student attitudes towards SD by the HEA (Cade, 2008) reports that students and graduates want to work for ethical employers who are environmentally and socially responsible. Findings suggest that there have been significant efforts made to include ESD at HEIs, within the curriculum, campus estate management, and community engagement projects; however, opportunity exists to further develop the tangible benefits of these projects. Limited effort has been observed with regard to highlighting the importance of SD concepts in employment; however, increased corporate social responsibility (CSR) content in HE disciplines will support the student to graduate employee transition.

4.3. Exemplary case studies at local levels within the UK

Case studies from across the four member nations in FE and HE revealed a patchy coverage of ESD in curriculum, typically as 'bottom-up' strategies lacking national leadership.

Case studies in the further education sector typically cover two core functions:

- embedding ESD into vocational courses, e.g. the sustainable use of resources;
- embedding ESD into academic courses, e.g. reading a topic with a sustainability ethics agenda.

The LSC (2009a) and LSC and ESD Consulting (2009) reports strive to solidify these concepts from leadership and delivery perspectives, encouraging ESD inclusion through a variety of media, e.g. tutorials, short courses, key skills and skills for life, projects, community as a learning resource, the workplace as a learning resource, and enriched curriculum. These methodologies are in keeping with the four main ESD delivery mechanisms identified in the ongoing STAUNCH system of ESD evaluation.

Without an instructive national policy, the inclusion of SD within curricula has been driven by institutions at local levels. As such many exemplary occurrences of the intertwining of ESD within FE have been seen within institutions; however, approaches between institutions lack coherence and consistency. Correspondingly, and in keeping with SD research findings, first-year HE students have a mixed awareness of SD, and attitudes and skills in SD are likely to be over a broad spectrum.

This picture is mirrored within HE, with many excellent case studies of formally reviewed curricular inclusion (e.g. the Universities of Bradford and Exeter) and emerging 'ESD inclusion toolkits' available; however, without an understanding of student aspirations and unmet needs, and a wider national SD governance, the picture will continue to remain patchy.

5. National summaries outside England

5.1. Scotland

A review of Scottish policy documents demonstrates that Scottish HE and FE institutions have made significant advances into embedding ESD into the curriculum. Support from the Scottish Funding Council (SFC) has led to the establishment of a solid foundation for the sector to build upon, recorded in a baseline survey (SFC, 2006).

The HEA (Ryan, 2009) review of ESD in HE in Scotland identifies a top level strategy to support embedding ESD within Scottish HEIs. Within this, Scottish FE and HE institutions are taking an increased ownership of their role to include ESD content within their disciplines. The sector has begun to move towards further embedding of ESD principles and content without the presence of an explicit government strategy. The SFC has identified ESD as a priority and has offered support through the funding of many projects.

A further SFC report (Salter, 2009), examining the scope of ESD inclusion in Scottish colleges indicates a similar trend. Consistent buy-in from leading national stakeholders within Scotland has allowed for an organic growth of ESD inclusion within Scottish colleges. Interestingly, at a local level, the SFC also found that the presence of sustainable development champions within institutions, as part of a bottom-up approach, has been central to increasing ESD in FE.

The Scottish Government (2010) has been proactive in producing an action plan as part of the UN Decade of Education for Sustainable Development (DESD). Included in this plan is the aim to establish national networks to allow for knowledge and experience exchange, alongside the development of innovative approaches to embedding ESD within the curriculum. Additional actions are outlined specifically for schools, colleges, universities and lifelong learning opportunities, which allows for a holistic approach to the development of the education sector.

5.2. Wales

Detailed review of ESD policy in Wales shows active encouragement of the inclusion of ESD and global citizenship (ESDGC) within the HE sector. The Higher Education Funding Council for Wales (HEFCW) has proactively evaluated the current trends relating to ESD concepts within HE and FE institutions. The Welsh Assembly Government has rolled out an action plan that demonstrates a commitment to developing ESD across the education sector.

There is recognition that the implementation of ESDGC concepts in teaching has been patchy throughout the HE sector (SQW consulting, 2009). This can be attributed to some degree to differences between institutions (e.g. number of students, number of staff, and the size of the institution).

However, individual institutions have been found to be driving stand-alone projects forward at a local level. The focus of ESD projects tends to relate to environmental issues, with reduced focus on social sustainability and economic sustainability. As such HEFCW call for increased institutional commitments and national cohesion.

Policy in Wales is future facing; the need to evaluate the progress across the education sector to establish a baseline to measure future progress against is highlighted by the Welsh Assembly Government, Department for Children, Education, Lifelong Learning and Skills (DCELLS, 2009) Action Plan. The Welsh Assembly Government intend to raise awareness of ESDGC within the HE sector by establishing a senior ESDGC champion at each institution who reports directly to an ESDGC panel.

This will go some way to meeting the need to communicate good practice examples to encourage and enable ESD within the curriculum.

5.3. Northern Ireland

Initiatives exist with a view to embedding ESD into the curriculum within Northern Ireland and policy is in place. The Office of the First Minister and deputy First Minister of Northern Ireland (OFMDFM, 2010) report a commitment to build sustainable development concepts into all policies and strategies nationally. This report identifies the need to share details of progress and good practice examples nationally to allow ESD to be effectively embedded into the curriculum.

The Education and Training Inspectorate for Northern Ireland (ETI, 2010) identifies key characteristics of the most effective techniques to embed ESD into the curriculum, which has national significance in creating a nascent toolkit for ESD.

The HE and FE sectors in Northern Ireland are only beginning to establish ESD and a positive start has been made with clear ambition. A baseline survey would allow the Northern Irish education sector to monitor future progress and it would enable effective evaluations to be implemented.

6. Discussion and recommendations

6.1. Discussion

Policy at a national level

Literature surrounding national policy into sustainability has been widely reviewed in both further and higher education settings, demonstrating that while national initiatives exist, policies are typically developed at a local level, resulting in a disjointed delivery of SD within FE and HE curricula. Opportunity exists to develop SD implementation plans within the UK, to support institutions across the ESD spectrum.

ESD is, on the whole, viewed as a nebulous concept, with a need for a working definition to be adopted consistently across the UK. National baselining studies have been conducted in Scotland and Wales and work is ongoing within the UK to create a standard assessment procedure (e.g. STAUNCH). The backing of a standard procedure at a national level will allow for wider assessment of the quality and trends in the delivery of ESD.

Many national policy-makers are politically ill-placed to advise on curriculum; however, without enforcement or national incentive to include SD within curricula,

and a validated method of demonstrating tangible benefits to the institutions be they in further or higher education, securing national level buy-in among leaders of institutions will remain a challenge without authoritative leadership.

Furthermore, thinking on SD within FE and HE remains, on the whole, unfocused and difficult to action; good practice guides, national resources and SD 'toolkits' are recognised unmet needs.

Student perceptions

Information on the student perspective of ESD in FE and HE is limited but encouraging. The role that education facilities can play in developing environmental awareness and behaviours has been recognised by students. Student attitudes towards sustainability are often positive; however, these attitudes are found to have limited impact on behaviour when it comes to making decisions about future employment.

There had been limited effort made to highlight the linkages between employability and the knowledge and skills of sustainability and a future green economy. For this relationship to develop there is a need in further education for students to be instilled with a knowledge of the importance of an HEI which offers a comprehensive SD agenda, and in turn for HEIs to offer this agenda for employability. Research has cited that employers are keen to employ sustainably literate graduates; however, employers are less confident in describing what this literacy entails.

Curricular inclusion of SD

SD teaching has typically emerged locally, within institutions with a bottom-up approach to embedding ESD content. This has resulted in a lack of consistency and coherence between institutions and their pathways to include ESD within their curriculum.

An in-depth understanding of student aspirations for inclusion of SD within the curriculum is as yet unclear; however, it is of strategic national importance. The historic introduction of tuition fees and top-up fees at university has increased pressure on university provisions, as a consumer mentality among students in higher education prompts the initiation of a shift from a teacher-driven curriculum to a learner-driven curriculum.

National variations

At the national level Scotland and Wales have made the most significant steps towards including ESD. To date, governmental departments have started to issue policies and strategies to ensure the development of a constructive approach to embedding ESD into the curriculum. The Northern Irish education sector is beginning to recognise

the relevance of ESD content, and commitments have been made to establishing a foundation to build good practice examples upon.

6.2. Recommendations for empirical research

The student pathway in relation to inclusion of SD within the curriculum is historically not well charted prior to commencing the student journey. HEA-funded research into first-year attitudes towards, and skills in, sustainable development presents the opportunity to develop insight into the factors leading up to starting an undergraduate course in terms of awareness and importance of social and environmental competencies.

As such it is recommended that the following aspects should be considered to inform the empirical research:

Policy at a national level

- Collection of data relating to current understanding of sustainability issues will provide a benchmark of SD knowledge gained throughout the schools and FE journey.
- Identification of student attitudes towards potential future policies of including ESD within the curriculum.

Student perceptions

- Examination of student attitudes towards how skills in sustainability can relate to employability, and whose responsibility it is to develop these skills will provide insight into first-year students' willingness to learn about SD.
- Identification of how students typically define sustainable development will clarify the effects of what is typically understood as a nebulous definition.

Curricular inclusion of SD

- Collection of data on student opinions of the perceived relevance of ESD-related skills, unmet needs and aspirations to learn more.

Appendix 3: Online survey materials

University Skills Survey

NUS are conducting a short and confidential survey with students within your university to find out more about your attitudes towards your university and course and aspirations for the future. By taking part in this survey you are in with a chance of winning a fantastic cash prize!

- 1 winner will receive a very useful £500!
- 10 x runners up will receive £50!

The survey will take 10 minutes to complete.

There are no right or wrong answers, we are keen to understand what makes you tick, so please do answer as frankly and honestly as you can. You do not have to answer any questions that you feel uncomfortable with and can simply move on to the next question.

Your responses to this survey will be treated in complete confidence. The information collected will be used only for the purposes of this study.

First of all we need to ask you a few questions to ensure that you are eligible for this survey

1. Which of the following best describes your status?

Select one only

- Undergraduate 1st Year
- Undergraduate 2nd Year
- Undergraduate 3rd Year
- Undergraduate 4th Year
- Undergraduate 5th or greater Year
- Postgraduate (Research)
- Postgraduate (Taught)

2. Thinking about your education before university, which of the following best describes the last place that you studied?

Select one only

- State-owned school with integrated sixth form college
 - State-owned separate sixth form college
 - Privately owned school with integrated sixth form
 - Privately owned separate sixth form college
 - College of Further Education
 - College of Vocational Excellence
 - Higher education institute
 - Other, please specify
-
-

3. **What was the name of the last place that you studied?**
Please type your answer into the box below
-

4. **Thinking of your answer to the previous questions, how many academic years have passed since you studied prior to attending your university / college?**

Select one only

- 0, I have come straight to university
- 1 year since formal study
- 2-5 years
- More than 5 years

Congratulations, you are eligible to take part in this survey! Please tell us a little about yourself:

5. **Which university / college do you currently study at?**

Select one only

- Aberystwyth University
 - Anglia Ruskin University
 - Aston University
 - Bangor University
 - Bath Spa University
 - Bell College
 - Birkbeck College
 - Birmingham City University
 - Birmingham College of Food, Tourism and Creative Studies
 - Bishop Grosseteste University College Lincoln
 - Bournemouth University
 - Brunel University
 - Buckinghamshire New University
 - Canterbury Christ Church University
 - Cardiff University
 - Central School of Speech and Drama
 - Conservatoire for Dance and Drama
 - Courtauld Institute of Art
 - Coventry University
 - Cranfield University
 - Cumbria Institute of the Arts
 - Dartington College of Arts
 - De Montfort University
 - Edge Hill University
 - Edinburgh College of Art
 - Glasgow Caledonian University
 - Glasgow School of Art
 - Goldsmiths College
 - Guildhall School of Music and Drama
 - Harper Adams University College
 - Heriot-Watt University
 - Heythrop College
 - Imperial College of Science, Technology and Medicine
 - Institute of Education
-

- King's College London*
 - Kingston University*
 - Leeds College of Music*
 - Leeds Metropolitan University*
 - Leeds Trinity and All Saints*
 - Liverpool Hope University*
 - Liverpool John Moores University*
 - London Business School*
 - London Metropolitan University*
 - London School of Economics and Political Science*
 - London School of Hygiene and Tropical Medicine*
 - London South Bank University*
 - Loughborough University*
 - Middlesex University*
 - Napier University*
 - Newman College of Higher Education*
 - Norwich School of Art and Design*
 - Oxford Brookes University*
 - Queen Margaret University, Edinburgh*
 - Queen Mary and Westfield College*
 - Ravensbourne College of Design and Communication*
 - Roehampton University*
 - Rose Bruford College*
 - Royal Academy of Music*
 - Royal Agricultural College*
 - Royal College of Art*
 - Royal College of Music*
 - Royal Holloway and Bedford New College*
 - Royal Northern College of Music*
 - Royal Welsh College of Music and Drama*
 - Scottish Agricultural College*
 - Sheffield Hallam University*
 - Southampton Solent University*
 - St George's Hospital Medical School*
 - St Martin's College*
 - St Mary's University College*
 - St Mary's University College, Twickenham*
 - Staffordshire University*
 - Stranmillis University College*
 - Swansea Institute of Higher Education*
 - Swansea University*
 - Thames Valley University*
 - The Arts Institute at Boumemouth*
 - The City University*
 - The Institute of Cancer Research*
 - The Liverpool Institute for Performing Arts*
 - The Manchester Metropolitan University*
 - The North-East Wales Institute of Higher Education*
 - The Nottingham Trent University*
 - The Open University*
 - The Queen's University of Belfast*
 - The Robert Gordon University*
 - The Royal College of Nursing*
 - The Royal Scottish Academy of Music and Drama*
-

- The Royal Veterinary College*
 - The School of Oriental and African Studies*
 - The School of Pharmacy*
 - The University College for the Creative Arts*
 - The University of Aberdeen*
 - The University of Bath*
 - The University of Birmingham*
 - The University of Bolton*
 - The University of Bradford*
 - The University of Brighton*
 - The University of Bristol*
 - The University of Buckingham*
 - The University of Cambridge*
 - The University of Central Lancashire*
 - The University of Chichester*
 - The University of Dundee*
 - The University of East Anglia*
 - The University of East London*
 - The University of Edinburgh*
 - The University of Essex*
 - The University of Exeter*
 - The University of Glasgow*
 - The University of Greenwich*
 - The University of Huddersfield*
 - The University of Hull*
 - The University of Keele*
 - The University of Kent*
 - The University of Lancaster*
 - The University of Leeds*
 - The University of Leicester*
 - The University of Lincoln*
 - The University of Liverpool*
 - The University of Manchester*
 - The University of Newcastle-upon-Tyne*
 - The University of Northampton*
 - The University of Northumbria at Newcastle*
 - The University of Nottingham*
 - The University of Oxford*
 - The University of Paisley*
 - The University of Plymouth*
 - The University of Portsmouth*
 - The University of Reading*
 - The University of Salford*
 - The University of Sheffield*
 - The University of Southampton*
 - The University of St Andrews*
 - The University of Stirling*
 - The University of Strathclyde*
 - The University of Sunderland*
 - The University of Surrey*
 - The University of Sussex*
 - The University of Teesside*
 - The University of Wales, Lampeter*
 - The University of Wales, Newport*
-

- The University of Warwick*
- The University of Westminster*
- The University of Winchester*
- The University of Wolverhampton*
- The University of Worcester*
- The University of York*
- Trinity College, Carmarthen*
- Trinity Laban*
- UHI Millennium Institute*
- University College Falmouth*
- University College London*
- University College Plymouth St Mark and St John*
- University of Abertay Dundee*
- University of Bedfordshire*
- University of Chester*
- University of Derby*
- University of Durham*
- University of Glamorgan*
- University of Gloucestershire*
- University of Hertfordshire*
- University of London*
- University of the Arts, London*
- University of the West of England, Bristol*
- University of Ulster*
- University of Wales Institute, Cardiff*
- Writtle College*
- York St John University*
- Other*

6. Which of the following age ranges do you fit into?

Select one only

- 16-17 years*
- 18-20 years*
- 21-24 years*
- 25-29 years*
- 30-40 years*
- 41-54 years*
- 55-64 years*
- 65+ years*
- Rather not say*

7. What is your gender?

Select one only

- Male*
 - Female*
 - Transgender*
 - Rather not say*
-

8. Which of the following statements best describes you?

Select one only

- I am a UK citizen studying in the UK*
- I am an international student from a country within the EU studying in the UK*
- I am an international student from a country outside the EU studying in the UK*
- Rather not say*

9. Which one subject best describes your course or degree?

Select one only

- Accounting*
 - Aerospace engineering*
 - African studies*
 - Agricultural sciences*
 - Agriculture*
 - American studies*
 - Ancient language studies*
 - Animal science*
 - Anthropology*
 - Archaeology*
 - Architecture*
 - Artificial intelligence*
 - Astronomy*
 - Aural & oral sciences*
 - Australasian studies*
 - Biology*
 - Biology - Microbiology*
 - Biology - Molecular*
 - Biophysics & biochemistry*
 - Biotechnology - Industrial*
 - Botany*
 - Building*
 - Business studies*
 - Celtic studies*
 - Ceramics & glasses*
 - Chemical, process & energy engineering*
 - Chemistry*
 - Chinese studies*
 - Cinematics & photography*
 - Civil engineering*
 - Classical Greek studies*
 - Classical studies*
 - Comparative literary studies*
 - Complementary medicine*
 - Computer science*
 - Crafts*
 - Dance*
 - Dentistry*
 - Dentistry - Pre-clinical*
 - Design studies*
 - Development Studies*
 - Drama*
 - Economics*
-

- Economics & politics*
 - Ecology*
 - Education - Academic studies in*
 - Education - Research & study skills in*
 - Electronic & electrical engineering*
 - English*
 - English studies*
 - Environmental sciences*
 - Finance*
 - Fine art*
 - Food & beverage studies*
 - Forensic & archaeological science*
 - Forestry*
 - French studies*
 - General engineering*
 - Genetics*
 - Geography*
 - Geology*
 - German studies*
 - History (by area, period or topic)*
 - Human & social geography*
 - Human resource management*
 - Imaginative writing*
 - Information services*
 - Information systems*
 - Italian studies*
 - Japanese studies*
 - Journalism*
 - Landscape design*
 - Latin studies*
 - Law (by area or topic)*
 - Linguistics*
 - Management studies*
 - Manufacturing engineering*
 - Maritime technology*
 - Marketing*
 - Materials science*
 - Materials technology not otherwise specified*
 - Mathematics*
 - Mechanical engineering*
 - Media studies*
 - Medical technology*
 - Medicine - Clinical*
 - Medicine - Pre-clinical*
 - Metallurgy*
 - Minerals technology*
 - Modern Middle Eastern studies*
 - Music*
 - Naval architecture*
 - Nursing*
 - Nutrition*
 - Ocean sciences*
 - Office skills*
 - Operational research*
-

- Ophthalmics
- Pharmacology, toxicology & pharmacy
- Philosophy
- Physical & terrestrial geographical & environmental sciences
- Physics
- Physiology & pathology - Anatomy
- Planning (urban, rural & regional)
- Politics
- Polymers & textiles
- Portuguese studies
- Production engineering
- Psychology
- Publicity studies
- Publishing
- Russian & East European studies
- Scandinavian studies
- Social policy
- Social work
- Sociology
- Social science
- Software engineering
- South Asian studies
- Spanish studies
- Sports science
- Statistics
- Theology & religious studies
- Tourism, transport & travel
- Training teachers
- Veterinary medicine - Pre-clinical
- Veterinary medicine & dentistry - Clinical
- Zoology
- Other

10. Which one subject best describes the subject(s) you took at the last place that you studied before your current university / college?

Select one only

- Materials and Performance Arts; e.g. Art, Drama, Dance
 - Written arts; e.g. English Literature
 - Humanities; e.g. History, Religious studies
 - Earth Sciences, e.g. Geology
 - Sciences and Mathematics e.g. Physics, Statistics, Biology
 - Vocational training (please specify)
 - A mixture of arts and science subjects
 - A mixture of arts and humanities subjects
 - A mixture of science and humanities subjects
 - Rather not say
 - Other, please specify
-
-

11. Were you aware of any of the following, if any, at the last place that you studied before your current university / college?

Please select all that apply

- Eco-schools / Green flag
- Rights Respecting School
- Link with a school/education institution overseas,
- Other environmentally friendly school scheme, please specify

12. Which, if any, of the following groups are you part of in your current university / college?

Please select all that apply.

- Arts
- Cultural
- Departmental
- Environmental
- Faith
- Media
- Political
- RAG
- Recreational Sport
- Other, please specify

13. Have you had your university / college course induction since beginning university?

Select one only

- Yes
- No
- Rather not say

Thank you! We are now going to ask you a few questions about the last place you studied and your choice of university

14. Thinking of your time at the last place you studied before attending your current university / college, for each of the following descriptions, please tell us to what extent, if at all, you believe these skills below were covered in your curriculum:

For each item, select one only

	Extensively covered	Partially covered	Mentioned but not covered	Not mentioned and not covered	Don't know	Rather not say
Understand people's relationship to nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyse using many subjects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Act as a responsible citizen locally & globally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan for the long term as well as the short term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use resources efficiently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Think of the whole system and the links when considering new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adapt to new situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Consider the ethical issues of your subject

15. Thinking of your answers to the previous questions, how important, if at all, do you feel it is to cover these skills in the last place you studied in terms of skills you might need to study your course in your current university or college?

For each item, select one only

	Very important	Somewhat important	Neither important nor unimportant	Somewhat unimportant	Very unimportant	Don't know	Rather not say
Understand people's relationship to nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyse using many subjects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Act as a responsible citizen locally & globally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan for the long term as well as the short term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use resources efficiently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Think of the whole system and the links when considering new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adapt to new situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consider the ethical issues of your subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16. What, if anything, would you have liked to have seen included in your time at the last place you studied in terms of environmental or social topics which were not covered at the time?

Please enter your response into the box below

17. How important were the following when choosing which university or college to apply to?

For each item, select one only

	Very important	Somewhat important	Neither important nor unimportant	Somewhat unimportant	Very unimportant	Don't know	Rather not say
How seriously the university/college takes environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How seriously the university/college takes global development issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nightlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The proximity of the university/ college to home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The position of the university/ college in league tables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The position of the course in league tables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attractiveness of location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The 'A' level or equivalent grades or points demanded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The teaching methods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The reputation of the university/college	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The reputation of the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. In which, if any, of the following sectors do you anticipate a career?

Select one only

- Multinational business
- Public body or Education
- Small and Medium sized businesses
- Voluntary or not-for-profit organisation
- Other, please specify

We are interested about your expectations from your university, please answer the following few questions about starting university

**19. To what extent, if at all, do you agree with the following statements:
For each item, select one only**

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Rather not say
It is the responsibility of my university / college to prepare me for a future graduate job market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is the responsibility of my course leaders to prepare me for a future graduate job market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is my responsibility to prepare myself for a future graduate job market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**20. Which of these statements would you say best describes your current lifestyle?
Select one only**

- I don't really do anything that is environmentally friendly
- I do one or two things that are environmentally friendly
- I do quite a few things that are environmentally friendly
- I'm environmentally friendly in most things I do
- I'm environmentally friendly in everything I do

**21. To what extent, if at all, do you agree with the following statements:
For each item, select one only**

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Don't know	Rather not say
My university / college practices and promotes good social and environmental skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My course / course leaders practice and promote good social and environmental skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**22. 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.
Please use each number only ONCE**

1 2 3 4 5 6 7 8

Understand people's relationship to nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyse using many subjects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Act as a responsible citizen locally & globally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan for the long term as well as the short term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use resources efficiently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Think of the whole system and the links when considering new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adapt to new situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consider the ethical issues of your subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**23. How likely, if at all, are you to take part in the following actions during your time in university?
For each item, select one only**

	Very likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Very unlikely	Don't know	Rather not say
Volunteer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Donate to charity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buy locally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Save energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Take part in an environmentally friendly scheme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduce the amount of air travel I take	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thanks for your answers so far, you can check your progress on the progress bar below.
Now for a couple of questions about yourself

**24. To what extent, if at all, do you think that you personally undertake the following skills?
For each item, select one only**

	All the time	Most of the time	Sometimes	Rarely	Never	Don't know	Rather not say
Understand people's relationship to nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyse using many subjects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Act as a responsible citizen locally & globally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan for the long term as well as the short term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use resources efficiently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Think of the whole system and the links when considering new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adapt to new situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consider the ethical implications of your subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**25. What other, if any, social or environmental skills do you think should be covered in your course in addition to those mentioned in this survey and why?
Please enter your answer into the box below**

And here are a few questions about the future

- 26. Thinking only of your own personal view, how relevant is it to you that the following skills are developed through your university education?
For each item, select only one**

	Extremely relevant	Somewhat relevant	Neither relevant or irrelevant	Somewhat irrelevant	Extremely irrelevant	Don't know	Rather not say
Understand people's relationship to nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyse using many subjects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Act as a responsible citizen locally & globally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan for the long term as well as the short term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use resources efficiently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Think of the whole system and the links when considering new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adapt to new situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consider the ethical implications of your subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 27. What, if anything, do you think that your university / college should be including in your experience in terms of environmental and social skills that are not currently being included, and why?
Please enter your answer into the box below**
-

- 28. How important do you think the following skills are to your future employers?
For each item, select one only**

	Very important	Somewhat important	Neither important nor unimportant	Somewhat unimportant	Very unimportant	Don't know	Rather not say
Understand people's relationship to nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyse using many subjects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Act as a responsible citizen locally & globally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan for the long term as well as the short term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use resources efficiently	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Think of the whole system and the links when considering new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adapt to new situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consider the ethical implications of your subject	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

We are interested in your prioritisation of social and environmental aspects into the future. For the following pairings, please select which option you think that you would choose in the future

- 29. Please select which option you think that you would choose
Select one only**
- An optional module which specifically teaches you skills for employability
- An optional module which furthers your knowledge of your chosen subject
-

- 30. Please select which option you think that you would choose**
Select one only
- The course you are studying at your **second choice** institution **which considers** the environmental and social aspects to the content you study
 - The course you are studying at your **preferred institution** that covers the core content **without specific consideration** of the environmental and social aspects to the content you study

- 31. Please select which option you think that you would choose**
Select one only
- Assuming all other factors are equal, would you choose a graduate position with a starting salary of **£1000 higher than average** (£20,000) in a company with a **poor** environmental and social record
 - Assuming all other factors are equal, would you choose a graduate position with a starting salary of **£1000 lower than average** (£20,000) in a company with a **strong** environmental and social record

- 32. Please select which option you think that you would choose**
Select one only
- Assuming all other factors are equal, would you choose a graduate position with a starting salary of **£3000 higher than average** (£20,000) in a company with a **poor** environmental and social record
 - Assuming all other factors are equal, would you choose a graduate position with a starting salary of **£3000 lower than average** (£20,000) in a company with a **strong** environmental and social record

- 33. 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?**
Select one only
- Strongly agree
 - Agree
 - Neither agree nor disagree
 - Disagree
 - Strongly disagree
 - Don't know
 - Rather not say

- 34. Thinking of your course only, if a policy were passed to include social and environmental skills within all university courses, how relevant, if at all are the following methods of including social and environmental skills within your own course?**
For each item, select one only

	Extremely relevant	Somewhat relevant	Neither relevant or irrelevant	Somewhat irrelevant	Extremely irrelevant	Don't know	Rather not say
Add environmental and social material to the full course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add a specific environmental and social skills module	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intertwine environmental and social skills with the existing content in the full course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allow the facility to specialise in environmental and social skills within your academic department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Finally, a couple of questions covering your understanding of Sustainable Development

- 35. What do you understand the term 'sustainable development' to mean?**
Please write your answer into the box below

36. Taking the definition of sustainable development to mean:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

to what extent, if at all, would you say that you personally agree with the following statements:

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>	<i>Don't know</i>	<i>Rather not say</i>
Sustainable development is something which universities should actively incorporate and promote	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sustainable development is something which university courses should actively incorporate and promote	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sustainable development is something which I would like to learn more about	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for your participation!

To be entered into the free prize draw, please enter your first name, last name and e-mail address into the boxes below so that we can contact you if you win.

Your e-mail address will not be used for any other purposes than to notify you if you are a winner. The prize draw will take place on the 30th October

37.

First Name: _____
Last Name: _____
E-mail address: _____

38.

The NUS are hoping to run this research into the future. Please tick the box below if you are **not** happy to be contacted about future research into curriculum and skills for employment with cash prize draws.

Please click submit below when you have finished

39.

I'm sorry that you do not make the entry criteria for this survey, however we will be running more surveys with great prizes in the future so please keep an eye out for these on www.nus.org.uk

Appendix 4: Promotional materials

HTML email (35,000 students)



First years! Win £500 in our short online survey!

n u s

Dear Student

Take part in our confidential online survey about your thoughts on university and employment to be in with a chance of winning a much needed £500 or one of ten £50 second prizes!

The survey will take less than 10 minutes to complete. so [click here](#) to take part in the survey!

Take part in the survey now!

Student Force for Sustainability

A photograph of a crowd of people with their hands raised in the air, set against a bright, hazy background.

Promotional card (22 universities)



n u s national union of students

FIRST YEARS!

Win £500 in our short online survey!

Take part in our confidential online survey about your thoughts on university and employment to be in with a chance of winning a much needed **£500** or one of ten **£50** second prizes!

To take part in the survey please go to: www.nus.org.uk/uni-skills

A photograph of a young woman with dark hair sitting at a desk, looking at a laptop screen.

Appendix 5: Breakdown of empirical research sample

Summary of sample

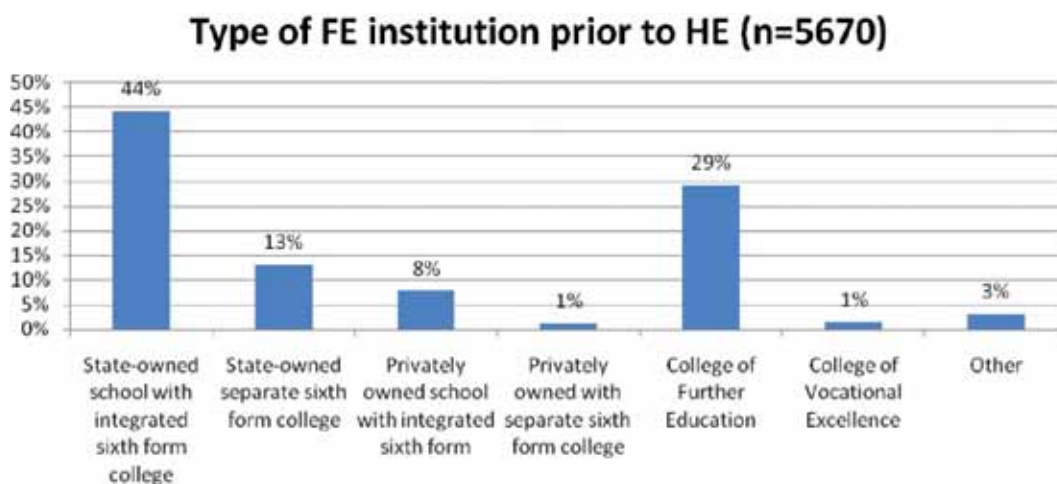
A total of 5,763 first-year students were sampled, across all four member nations. All respondents were taking their first degree and had not taken more than one year away from education.

In keeping with much social research and the evidence that there are more females in higher education than males, 66% of the sample are female. Over four-fifths (82%) were 18-20 years old (only 13% are over 20 years old), 93% are UK citizens and 94% are full-time students. Representation of all the subject types was achieved, with a focus on STEM subjects.

Sample detail

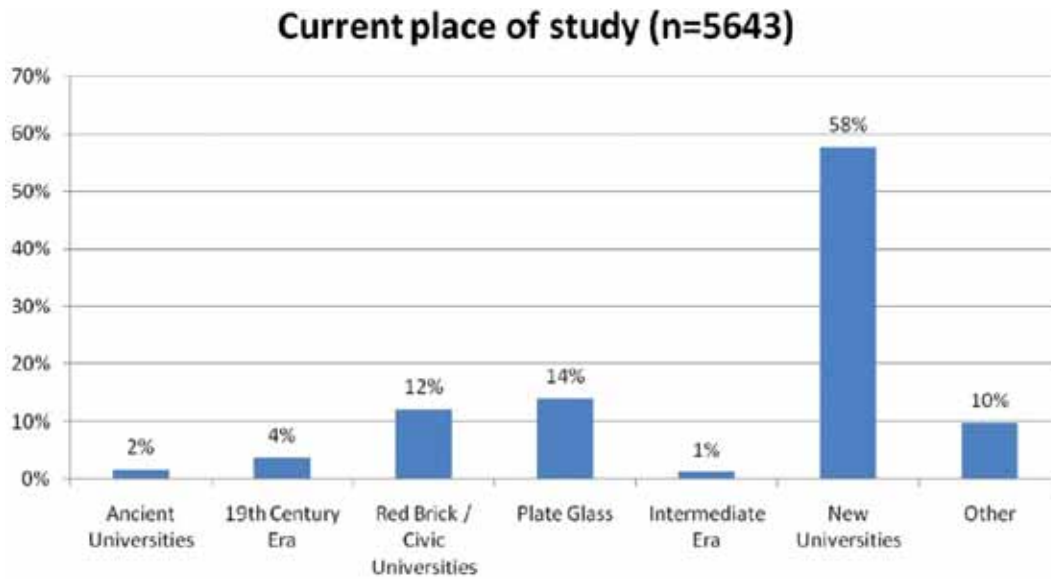
The majority of respondents represented state-funded institutions:

Figure 23: Q2. Thinking about your education before university, which of the following best describes the last place that you studied?



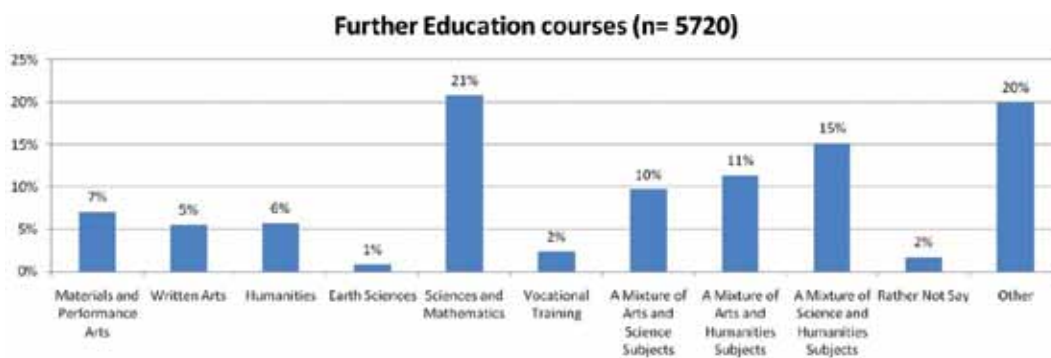
A representative sample of university types was collected across the sample:

Figure 24: Q5. Which university/college do you currently study at?



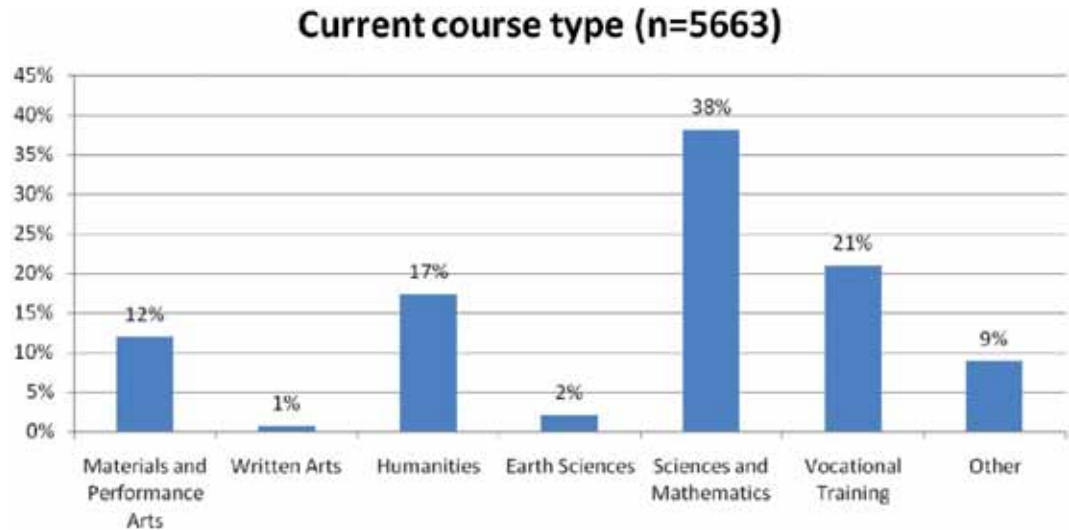
Over one third of respondents took a mixture of subjects in further education and one fifth were purely STEM:

Figure 25: Q10. Which one subject best describes the subject(s) you took at the last place that you studied before your current university/college?



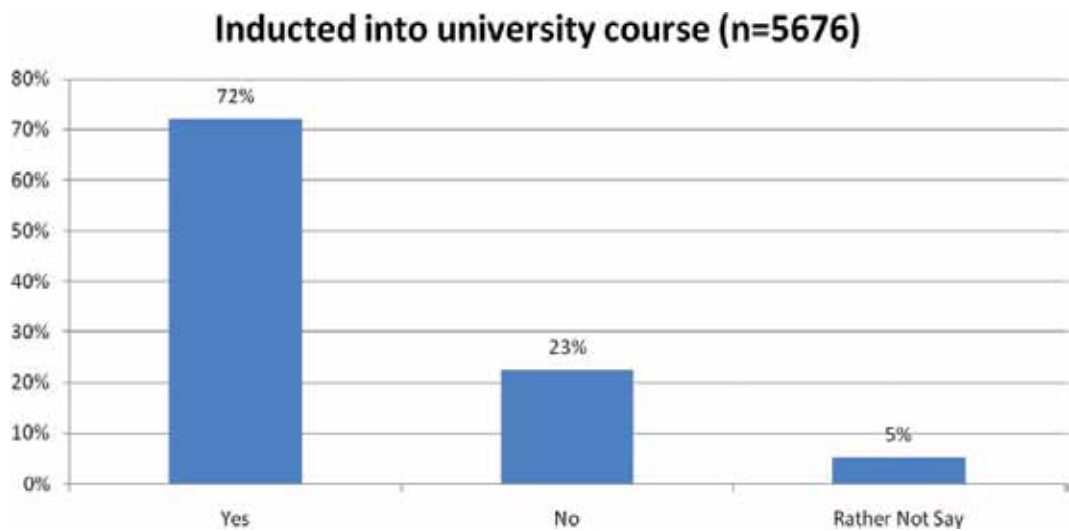
Nearly two-fifths of respondents study STEM subjects:

Figure 26: Q9. Which one subject best describes your course or degree?



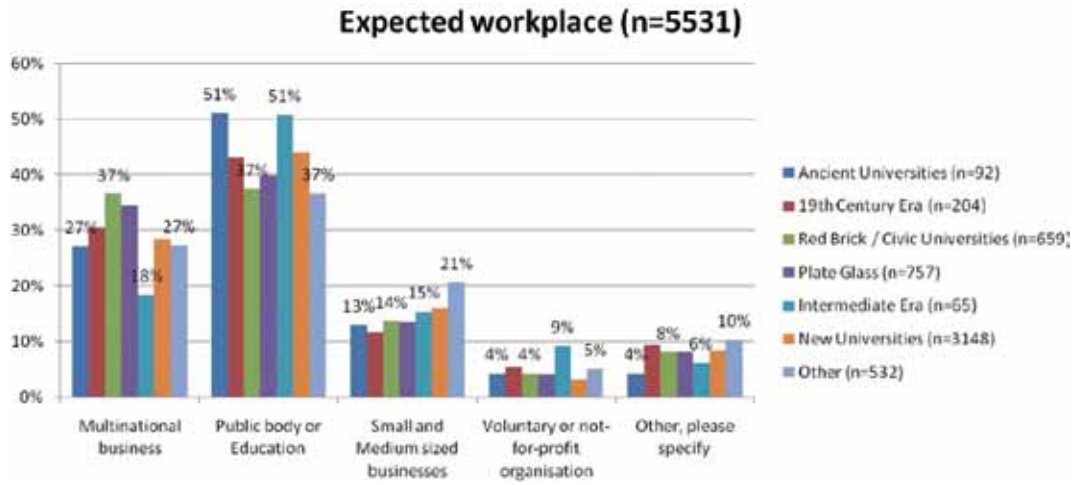
The majority of respondents are aware of their course entailments:

Figure 27: Q13. Have you had your university/college course induction since beginning university?



The majority of respondents anticipate working within large corporations or within the public sector:

Figure 28: Q18. In which, if any, of the following sectors do you anticipate a career?

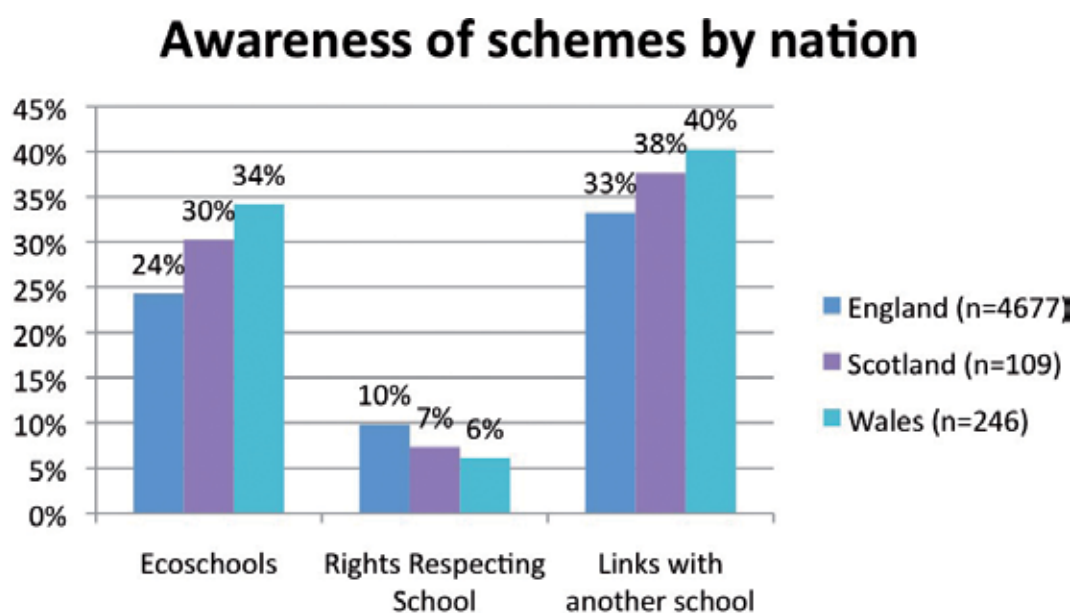


Appendix 6: The nations

Variation between nations was slight, however notable points are demonstrated below. Please note that Scotland and Wales may suffer as a result of relatively small sample sizes, Northern Ireland has been excluded due to small sample sizes and The Open University has been excluded from the following analyses due to an inability to identify the geographic location of these individuals at present.

Those in Scotland and Wales are more likely to recall schemes linked with sustainable development than those in England:

Figure 29: Q11. Were you aware of the following, if any, at the last place you studied before your current university/college?



However, there was very little difference between the nations in the attractiveness of environmental or global development initiatives in selecting an institution for higher education study:

Figure 30: Q17. How important were the following when choosing which university or college to apply to?

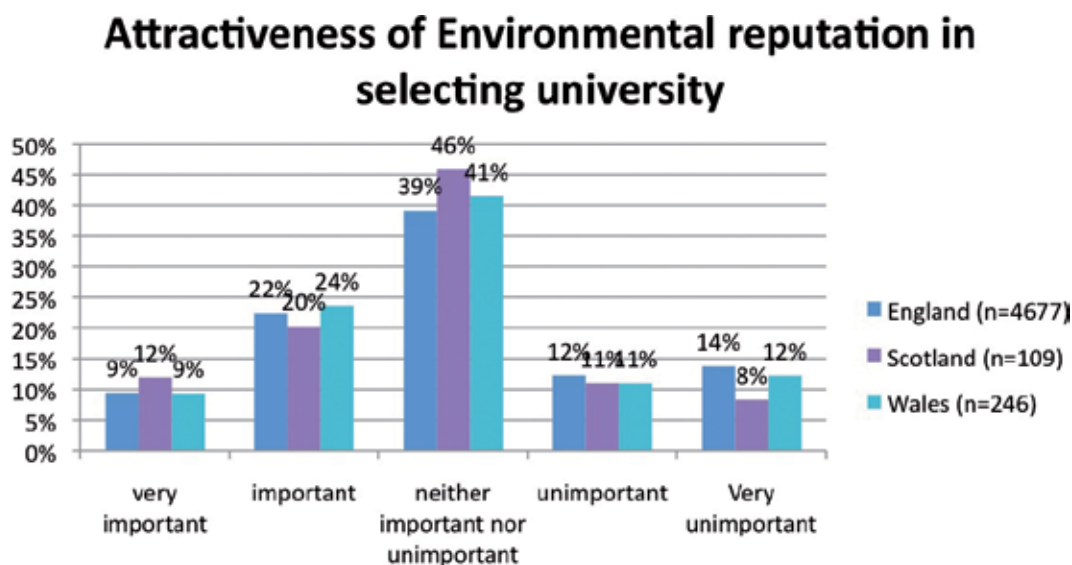
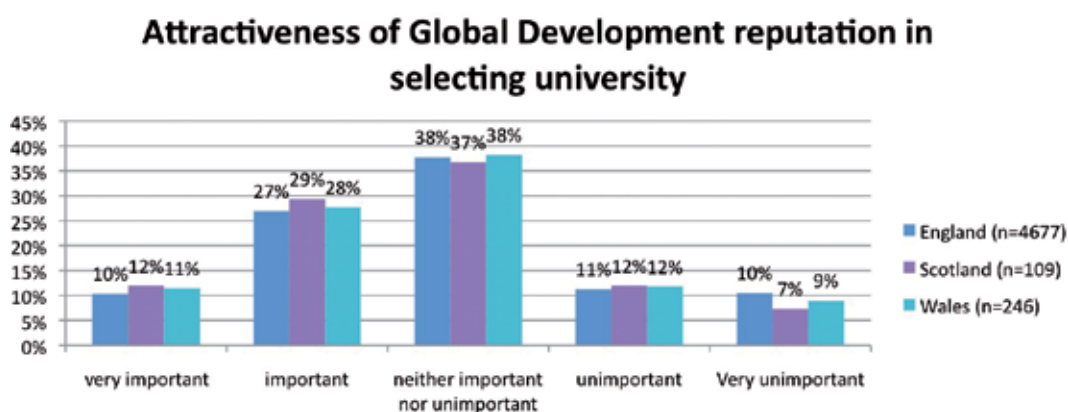


Figure 31: Q17. How important were the following when choosing which university or college to apply to?



Mirroring this, very little differentiation exists between the nations in relation to the expected roles of the university, course and student in preparing for a graduate job market:

Figure 32: Q19. To what extent, if at all, do you agree with the following statements?

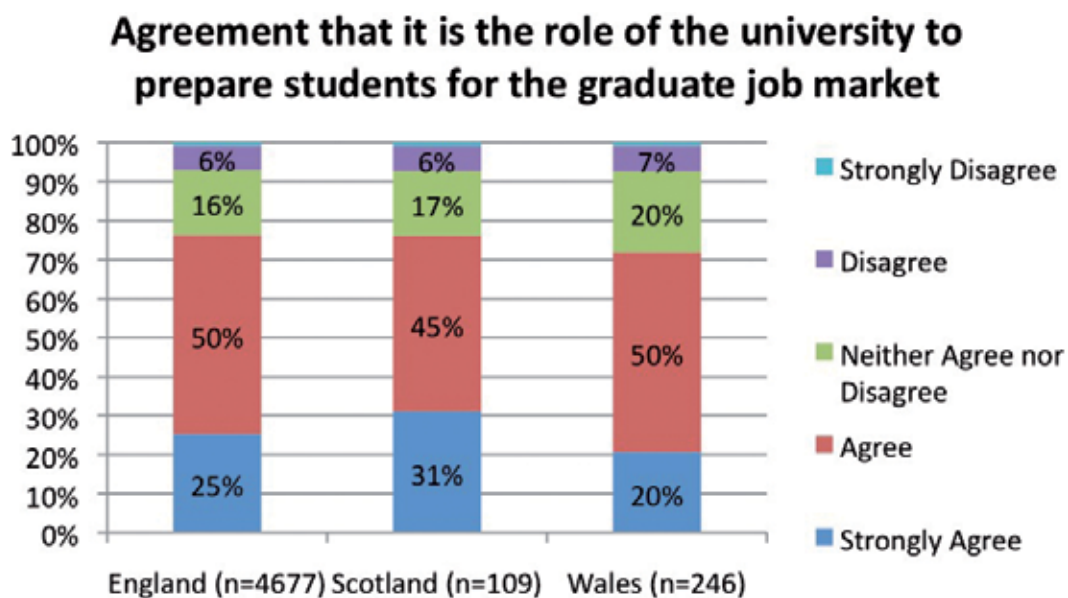


Figure 33: Q19. To what extent, if at all, do you agree with the following statements?

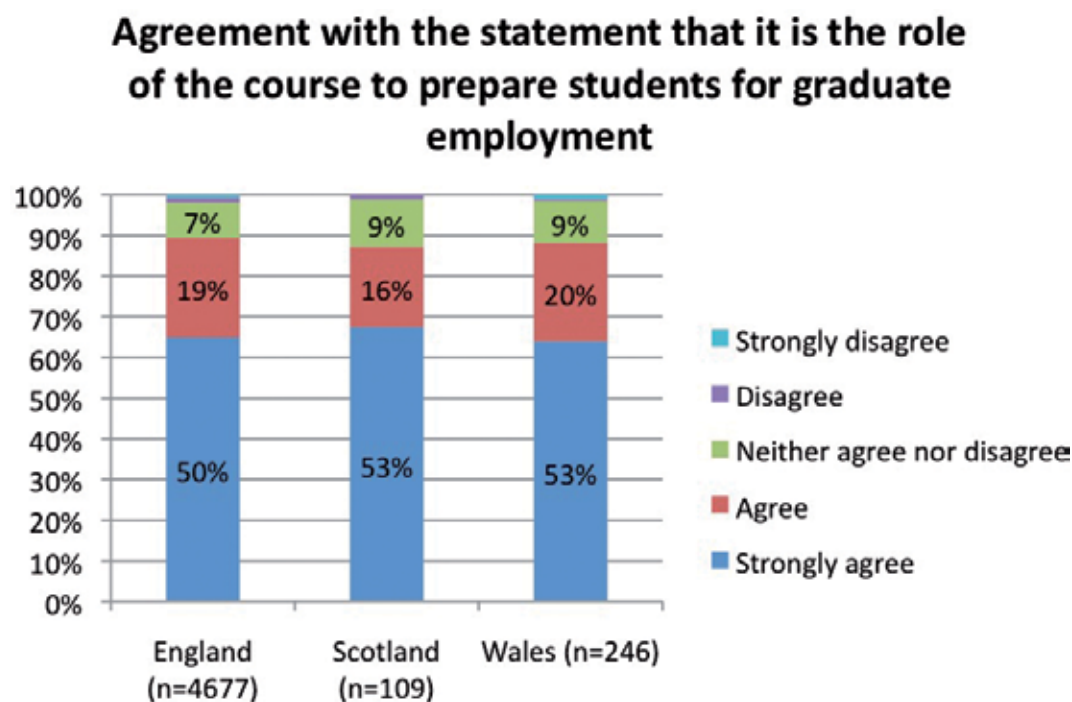
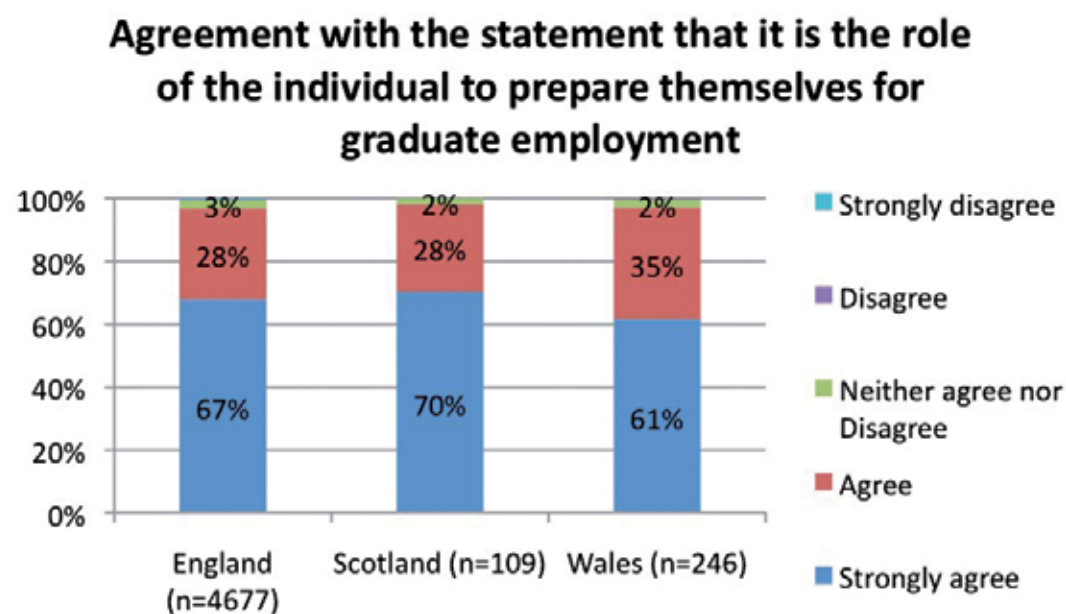


Figure 34: Q19. To what extent, if at all, do you agree with the following statements?



Minor differences do, however, exist between nations in terms of an understanding of the relevance of the component skills of sustainable development in relation to the relevance of learning these skills in university in order to equip the individual for later life:

Figure 35: Q26. Thinking of your own personal view, how relevant is it to you that the following skills are developed through your university education?

a. Understand people's relationship to nature

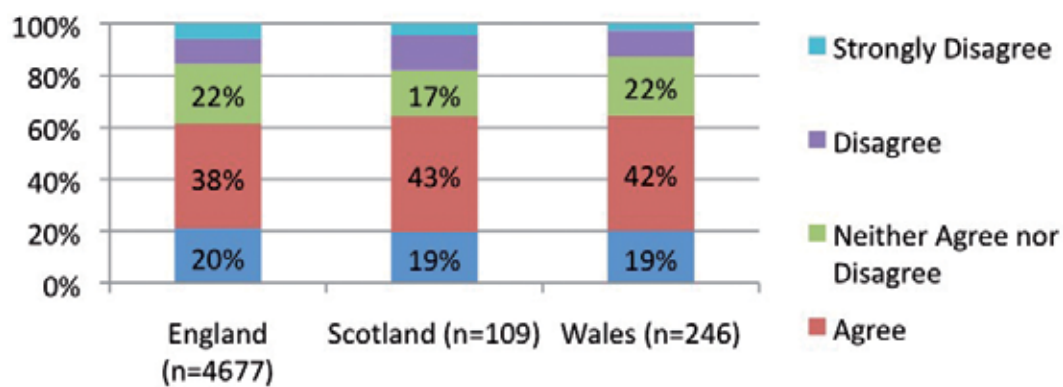


Figure 36: Q26. Thinking of your own personal view, how relevant is it to you that the following skills are developed through your university education?

b. Analyse using many subjects

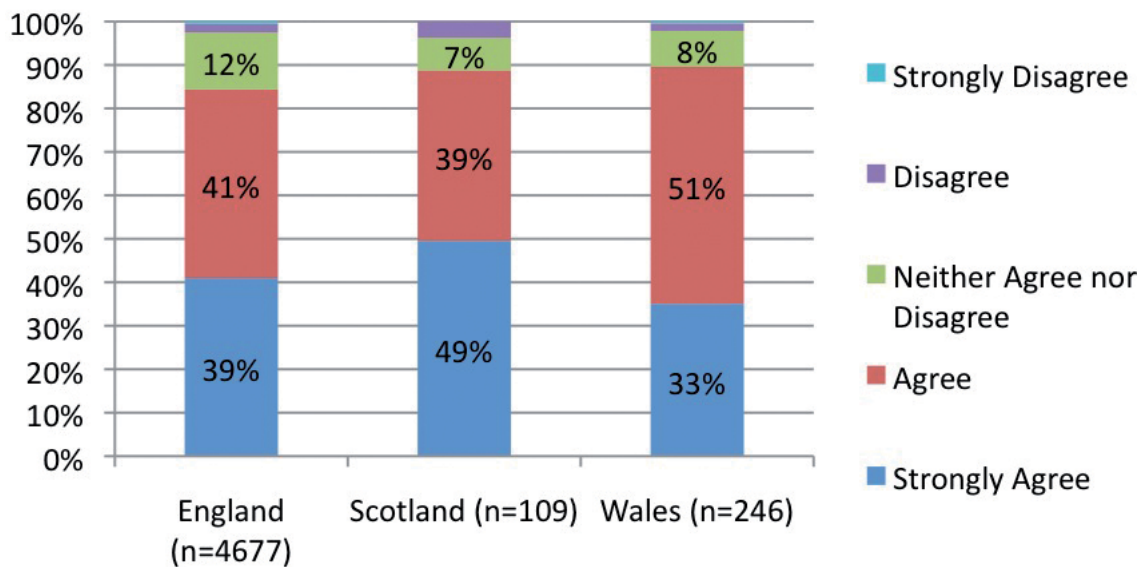


Figure 37: Q26. Thinking of your own personal view, how relevant is it to you that the following skills are developed through your university education?

c. Act as a responsible citizen locally and globally

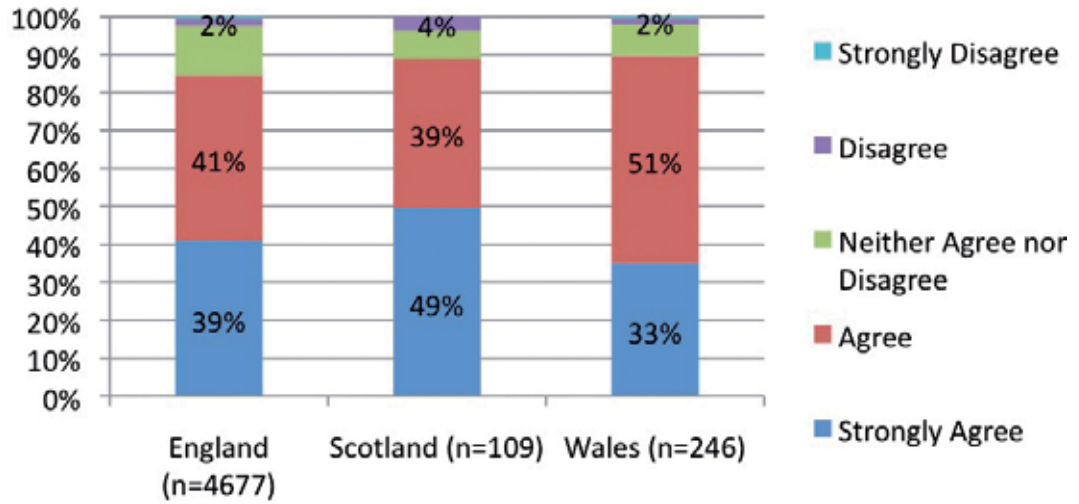


Figure 38: Q26. Thinking of your own personal view, how relevant is it to you that the following skills are developed through your university education?

d. Plan for the long term as well as the short term

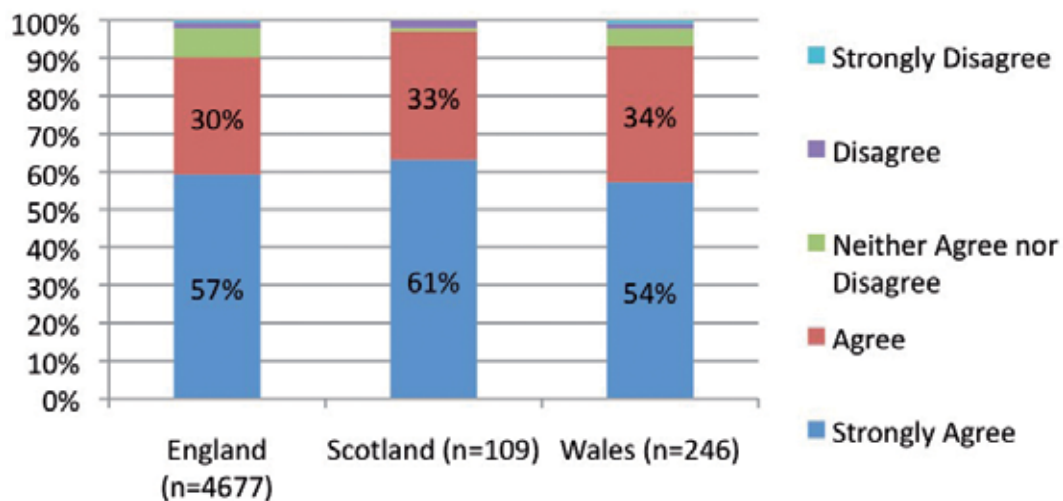


Figure 39: Q26. Thinking of your own personal view, how relevant is it to you that the following skills are developed through your university education?

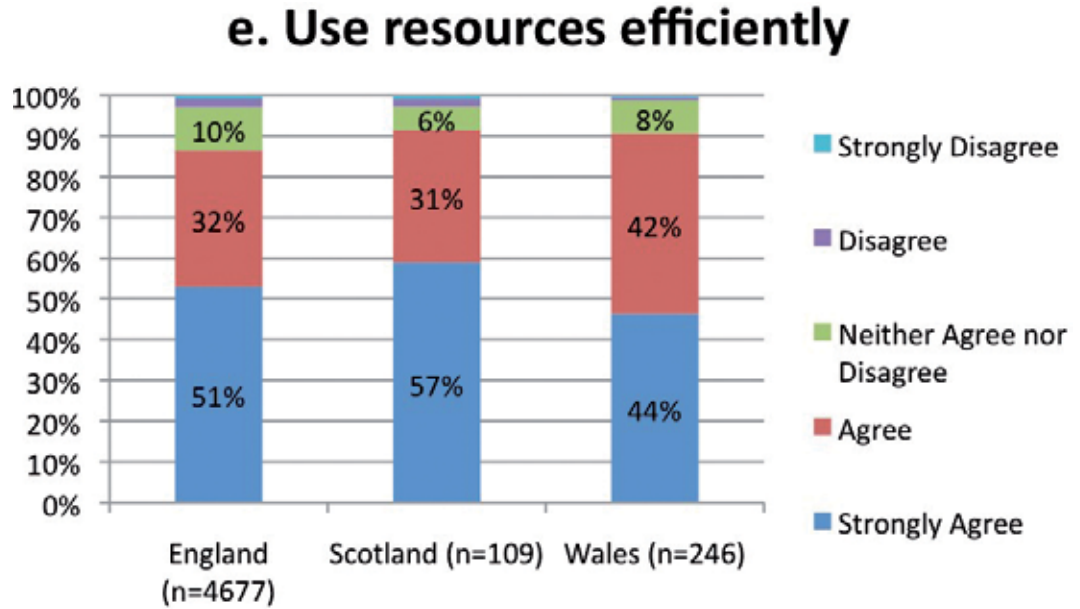


Figure 40: Q26. Thinking of your own personal view, how relevant is it to you that the following skills are developed through your university education?

f. Think of the whole system and the links when considering new ideas

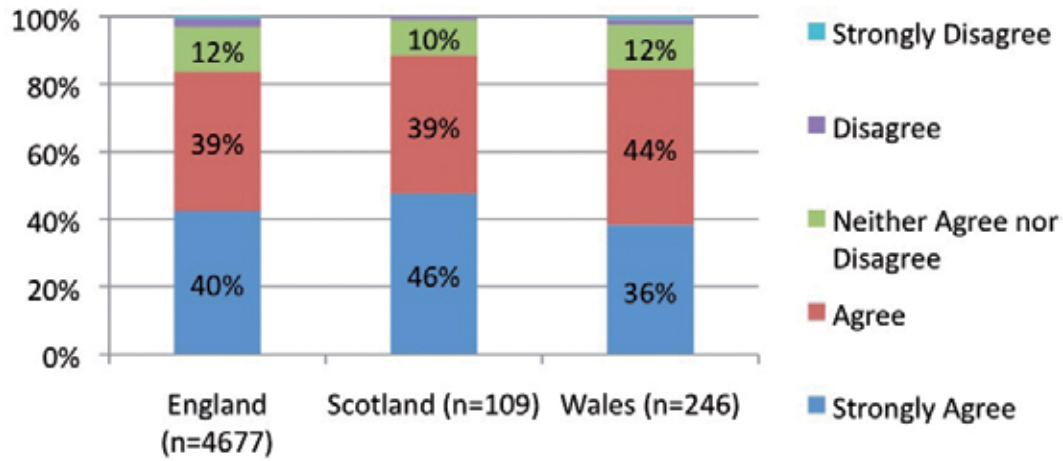


Figure 4I: Q26. Thinking of your own personal view, how relevant is it to you that the following skills are developed through your university education?

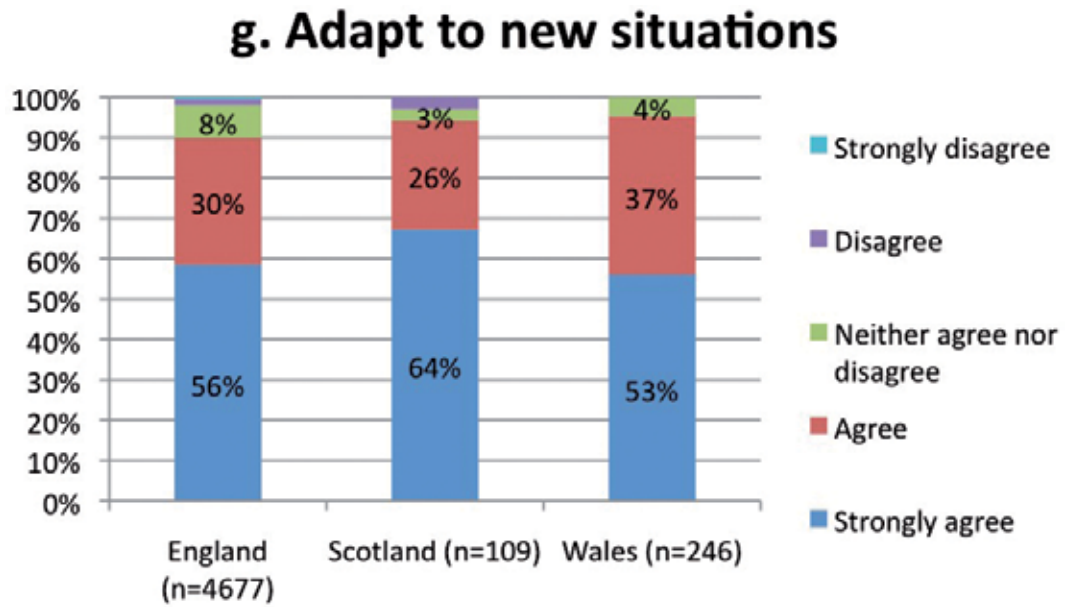
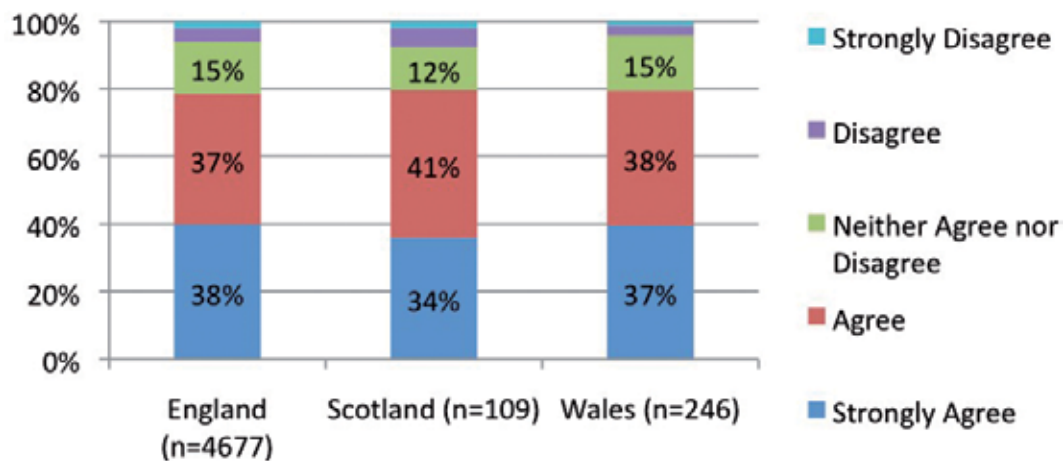


Figure 42: Q26. Thinking of your own personal view, how relevant is it to you that the following skills are developed through your university education?

h. Consider the ethical implications of your subject



A notable difference exists in willingness to trade off a higher salary in return for a more environmentally and socially conscious workplace; this is slightly higher in Scotland than in Wales and England:

Figure 43: Q31. Please select which option you think that you would choose: a) Assuming all other factors are equal, would you choose a graduate position with a starting salary of £1,000 higher than average (£20,000) in a company with a poor environmental and social record? b) Assuming all other factors are equal, would you choose a graduate position with a starting salary of £1,000 lower than average (£20,000) in a company with a strong environmental and social record?

Little national variation in trade off values

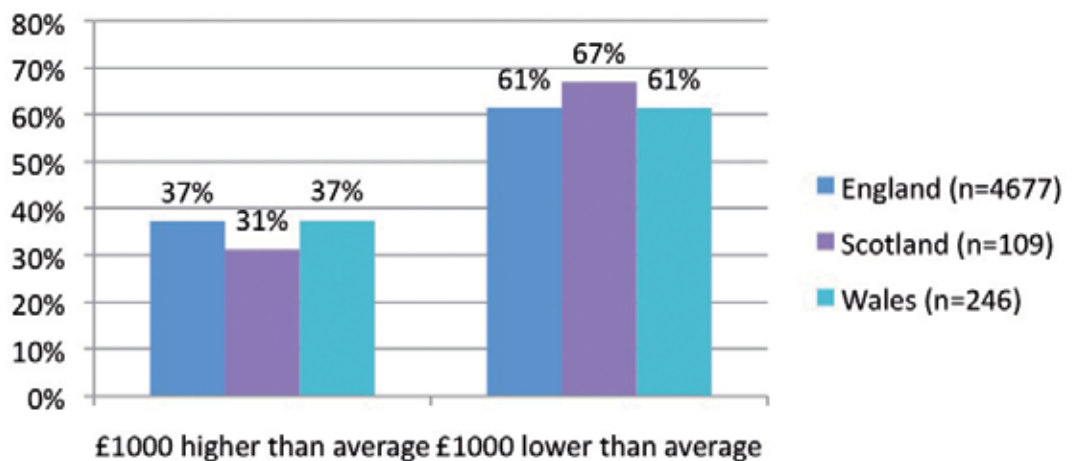


Figure 44: Q32. Please select which option you think that you would choose: a) Assuming all other factors are equal, would you choose a graduate position with a starting salary of £3,000 higher than average (£20,000) in a company with a poor environmental and social record? b) Assuming all other factors are equal, would you choose a graduate position with a starting salary of £3,000 lower than average (£20,000) in a company with a strong environmental and social record?

Little national variation in trade off values, some indication that Scottish respondents value social and environmental reputation more highly



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