



Education for Sustainability Curriculum Review – 2016/17

Summary

Embedded in Keele University's strategic aim 'to embed environmental sustainability in all that we do' is the requirement to 'Provide opportunities for all our students to learn about environmental sustainability and support University initiatives in this area'. Within the context of Education for Sustainability, 'environmental sustainability' inherently includes reference to wider issues of global citizenship, social justice, ethics and wellbeing, in line with the QAA's (2014) guidance on Education for Sustainable Development. This report outlines progress in identifying the educational opportunities within the formal curriculum.

A module audit, through a qualitative analysis of module content, assessments and intended learning outcomes, was carried out to determine the coverage of Education for Sustainability (EfS) in the formal curriculum across different Schools and Faculties, and to compare this with outcomes of audits over previous years. Education for Sustainability is embedded within core, optional and elective modules in all Faculties and Schools, and at all levels of study.

Results from the 2016-17 audit show:

- 19% of modules provide the opportunity to engage with EfS through the curriculum
- 46 modules had *strongly-embedded* EfS
- 269 modules had *an element of* embedded EfS
- 477 modules had *the potential* to embed EfS
- 867 had *no* embedded, and no obvious potential EfS

Therefore:

- A total of 315 modules embedded EfS
- A total of 1344 modules did not include EfS

- The Faculty of Natural Sciences has the highest number of modules where EfS is strongly embedded.
- The Faculty of Humanities and Social Sciences has the highest number of modules with an element of embedded EfS.
- The School of Geography, Geology and the Environment has the highest number of students experiencing 'strong' EfS.
- Modules with the potential to embed EfS could provide additional 17,165 learning opportunities (modules x number of students) to expose students to EfS through the curriculum.

The different structure and use of modules in programmes in the Faculty of Medicine and Health Sciences makes it difficult to compare data directly. However, within the Schools of this Faculty there are significant efforts to incorporate sustainability themes into the curriculum.

Methodology

The module audit was carried out on data provided by PAA on module titles, codes, Schools, route codes and student numbers. Module codes were used to search the online module catalogue to access descriptions of modules, and a qualitative analysis was carried out of module content,



assessments and intended learning outcomes to identify where Education for Sustainability elements existed in modules. A broad understanding of Education for Sustainability was used throughout this audit in line with the QAA's (2014) guidance on Education for Sustainable Development, covering global citizenship, environmental stewardship, and social justice, ethics and wellbeing. Such a qualitative analysis is inherently subjective, and also does not pick up sustainability elements 'hidden' from the module catalogue, in terms of details of lecture topics etc. This will be addressed in Phase 3 of this work, working directly with School Learning and Teaching Directors and programme leads to identify, areas of embedded sustainability which may have been missed by this audit, and working to address opportunities to embed further EfS.

Modules are classified based on the degree to which they engage with Education for Sustainability:

- *Strongly-embedded EfS* – where this is the core focus of the module content
- *Element of EfS* – where some themes in the module relate to sustainability
- *Potential to embed EfS* - where sustainability themes are not explicit but could be included as case studies or chosen by students as the focus of individual projects
- *No EfS* – limited obvious opportunity to embed EfS

Numbers of students are available for each module, and some students may take several modules which incorporate elements of EfS. Each time a student on a module encounters sustainability on a module, this is identified as a EfS learning opportunity, therefore the number of EfS learning opportunities is the number of students multiplied by the number of modules with embedded EfS.

The use of modules in the Faculty of Medicine and Health Sciences is different to the other two Faculties. In order to identify EfS learning opportunities in the Faculty of MHS, the EfS team are in consultation with School Learning and Teaching Directors.

Phase 2 of this work is to identify the coverage of EfS at a Programme level. This work has been delayed as there has been a two month delay in receiving the required data from IT.

Overall Embedding of EfS in the Curriculum

This report shows the number of modules which give students the opportunity to encounter EfS through the curriculum. The curriculum audit also identifies the number of modules that have the potential to embed EfS (mostly comprising dissertation or individual project modules where students could choose to explore sustainability themes through assessments).

Across the University, in the 2016-17 academic year, there were a total 1659 modules on which students were enrolled. Table 1 shows that 46 of these modules had strongly embedded EfS and 269 modules had an element of embedded EfS, giving a total 315 modules where students studied EfS themes through the curriculum. A further 477 modules had the potential to embed EfS, whilst 867 modules had no obvious or practical opportunities to embed EfS. In total, 1344 modules did not include EfS in 2016-17.

Table 1: Number and percentage of modules across the University in 2016-17 which include strongly embedded Education for Sustainability (EfS), an element of EfS, the potential to embed EfS, or no obvious or practical potential to embed EfS.

Strong		Element		Potential		None		Total
46	2.77%	269	16.21%	477	28.75%	867	52.26%	1659



Of the modules where EfS was strongly embedded, 3 modules were level 3; 10 modules were level 4; 9 modules were level 5; 10 modules were level 6; and 14 modules were level 7.

Of the modules where EfS is embedded as an element, 18 were level 3; 61 were level 4; 51 were level 5; 75 were level 6; and 45 were level 7. 19 modules were offered by the Language School and could be studied at levels 4-6.

Embedded EfS by Faculty

The number of modules with each level of embedded EfS can be broken down by Faculty. Table 2 shows that the Faculty of Natural Sciences has the highest number of modules where EfS is strongly embedded, at 27. The Faculty of Humanities and Social Sciences has 18 modules which strongly embed EfS, but with a total of 819 modules, this figure equates to 2% of the Faculty's modules, compared to 6 % of the Faculty of Natural Science's modules. The Faculty of Medicine and Health Sciences has no modules which strongly embed EfS. One Foundation Year Centre module strongly embeds sustainability, whilst the International Student Centre and Study Abroad modules (grouped as 'Other') have no modules which strongly embed sustainability.

The Faculty of Humanities and Social Sciences has the highest number of modules which have an element of embedded EfS, with 164 modules accounting for 20.02% of their modules. The Faculty of Natural Sciences has 78 modules with an element of EfS, accounting for 17% of modules, whilst the Faculty of Medicine and Health Sciences embed sustainability into 7 modules which equates to 3% of modules during 2016-17. Eleven Foundation Year Centre modules embed an element of EfS, accounting for 17% of their modules, whilst 9 'Other' modules do so, at 20%.

All Faculties have the potential to embed EfS into more modules than is currently practised. The Faculty of Humanities and Social Sciences have the greatest number of modules which could potentially embed EfS, at 291 and could see up to an additional 36% of the Faculty's modules embedding EfS. The Faculty of Natural Sciences has 81 potential modules which accounts for 17% of their modules. The Faculty of Medicine and Health Sciences could embed sustainability into 34% of their modules to increase their EfS total, however it is important to note that modules within this Faculty are not set up and delivered in the same manner as other Faculties. The Foundation Year Centre has 5 modules with the potential to embed EfS, whilst 'Other' modules could provide another 9 opportunities to expose students to EfS through the curriculum.

Of the modules where opportunities to embed EfS are not practical or obvious, The Faculty of Medicine and Health Sciences has the highest percentage of modules at 63%. The Faculty of Humanities and Social Sciences has the lowest percentage of modules within this category, at 42%, but the highest number of modules at 346. The Faculty of Natural Sciences has 281 modules in this category, accounting for 60% of the modules it delivers.

Table 2: Number and percentage of modules delivered in 2016-17 for each Education for Sustainability category broken down by Faculty. 'Other' includes study abroad modules and modules offered by the International Student Centre.

Faculty	Strong		Element		Potential		None		Total
Natural Sciences	27	5.78%	78	16.70%	81	17.34%	281	60.17%	467



Humanities and Social Sciences	18	2.20%	164	20.02%	291	35.53%	346	42.25%	819
Medicine and Health Sciences	0	0.00%	7	2.64%	91	34.34%	167	63.02%	265
Foundation Year Centre	1	1.56%	11	17.19%	5	7.81%	47	73.44%	64
Other	0	0.00%	9	20.45%	9	20.45%	26	59.09%	44

Embedded EfS by School

Figures 1-4 show the variation in the embedding of EfS across individual schools. The School of Geography, Geology and the Environment and School of Politics, Philosophy, International Relations and the Environment have the highest numbers of modules which strongly embed EfS (Figure 1). The School of Geography, Geology and the Environment, School of Humanities, and the Foundation Year Centre have increased the number of modules they offer where EfS is strongly embedded since 2014. Many Schools have maintained the number of modules available with strong EfS since 2014, although only 10 of the 17 Schools have modules within this category.

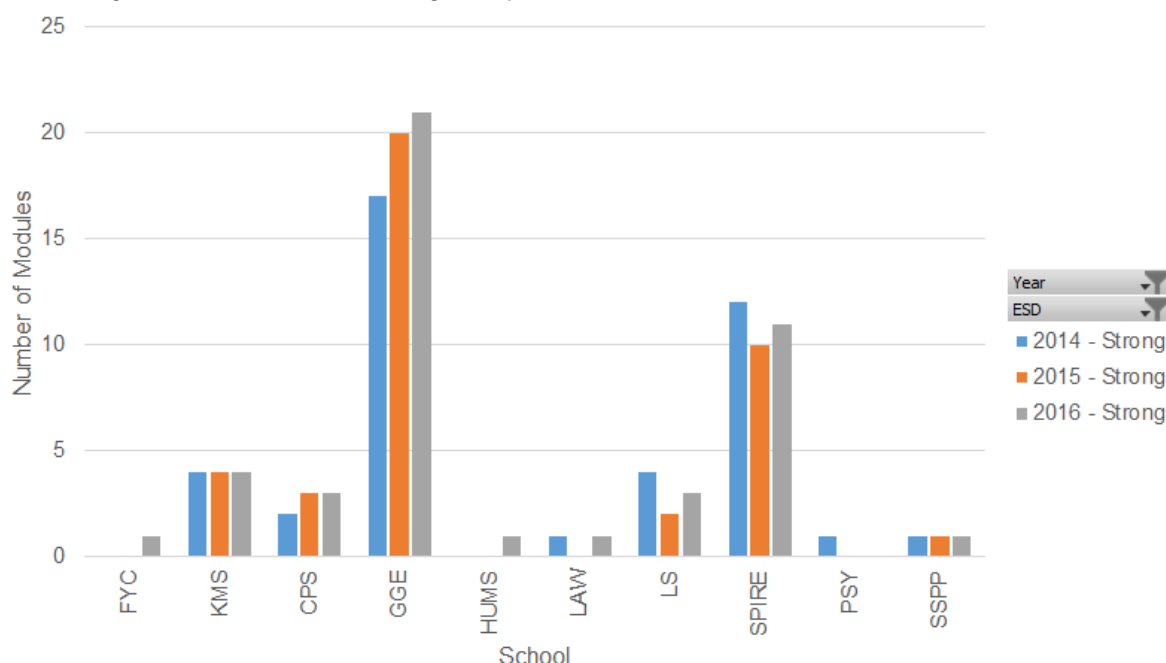


Figure 1: Number of modules from each school between 2014-15 and 2016-17 which have strong embedded Education for Sustainability (EfS).

Figure 2 shows that although a wider range of Schools embed an element of EfS into their modules, the number of modules varies considerably between Schools. In many cases, Schools have a higher number of modules that embed an element of EfS in 2016-17 than in 2014-15 or 2015-16.

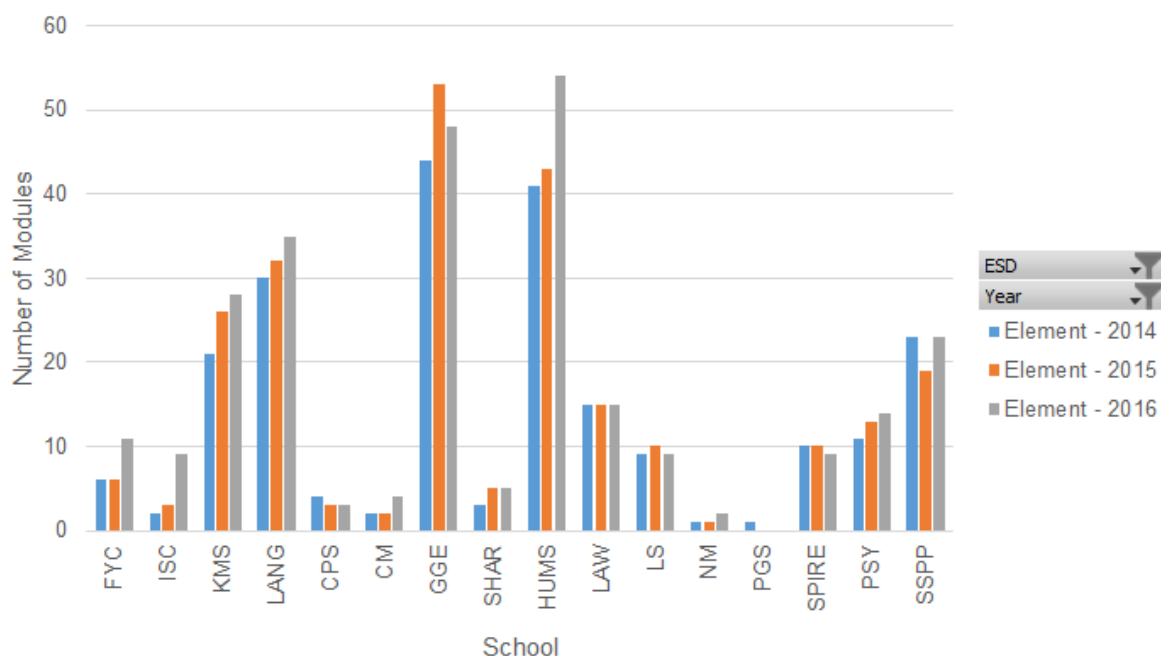


Figure 2: Number of modules from each school between 2014-15 and 2016-17 which have an element of embedded Education for Sustainability (Efs).

Figure 3 shows the 477 modules with the potential to embed EfS broken down by School. The graph shows that all schools have the potential to embed EfS into more modules, with the School of Humanities having the highest number of modules with this potential, and eight Schools having at least 25 modules which could increase their EfS offering.

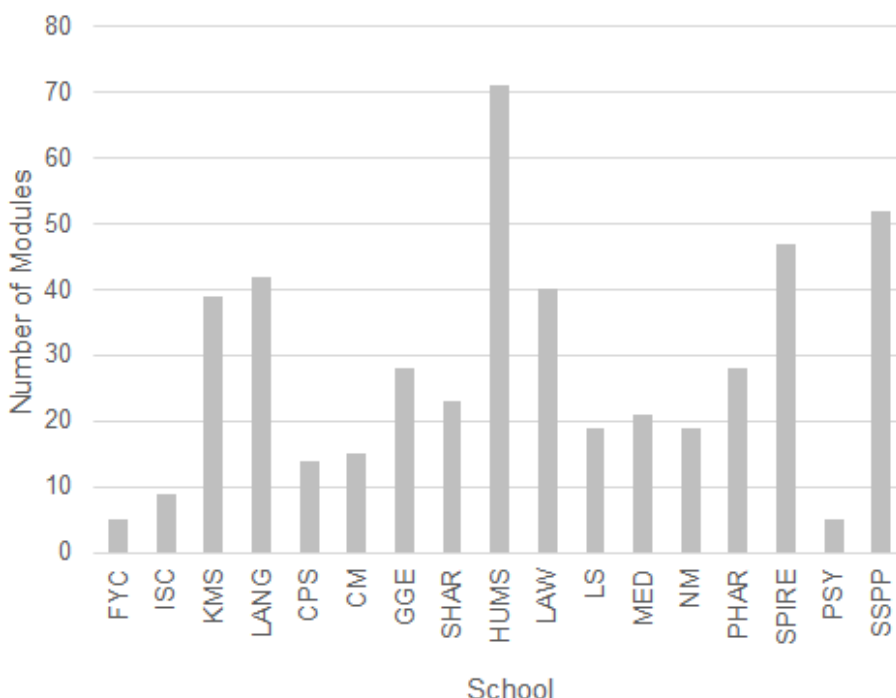


Figure 3: Number of modules from each school in 2016-17 which have the potential to embed Education for Sustainability (Efs).

Figure 4 shows the 867 modules that currently have no obvious or practical potential to embed EfS broken down by School. The School of Humanities has the highest number of modules with no EfS potential, whilst seven schools have 50 or more modules which have no embedded of potential EfS at present.

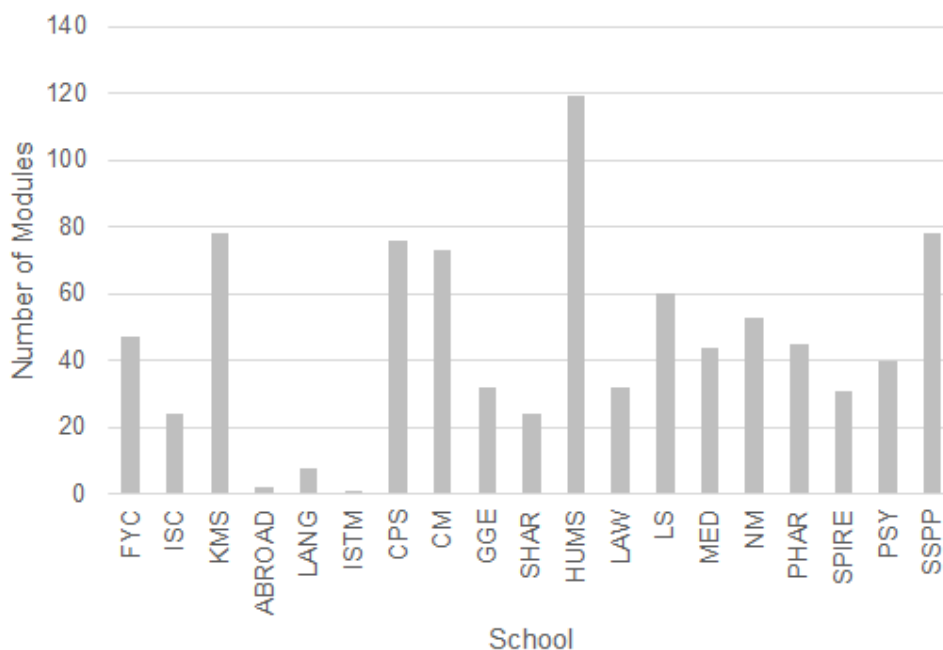


Figure 4: Number of modules from each school in 2016-17 which have no obvious potential to embed Education for Sustainability (EfS).

Figures 5-7 shows the breakdown of modules in each EfS category for each School over the past three years.

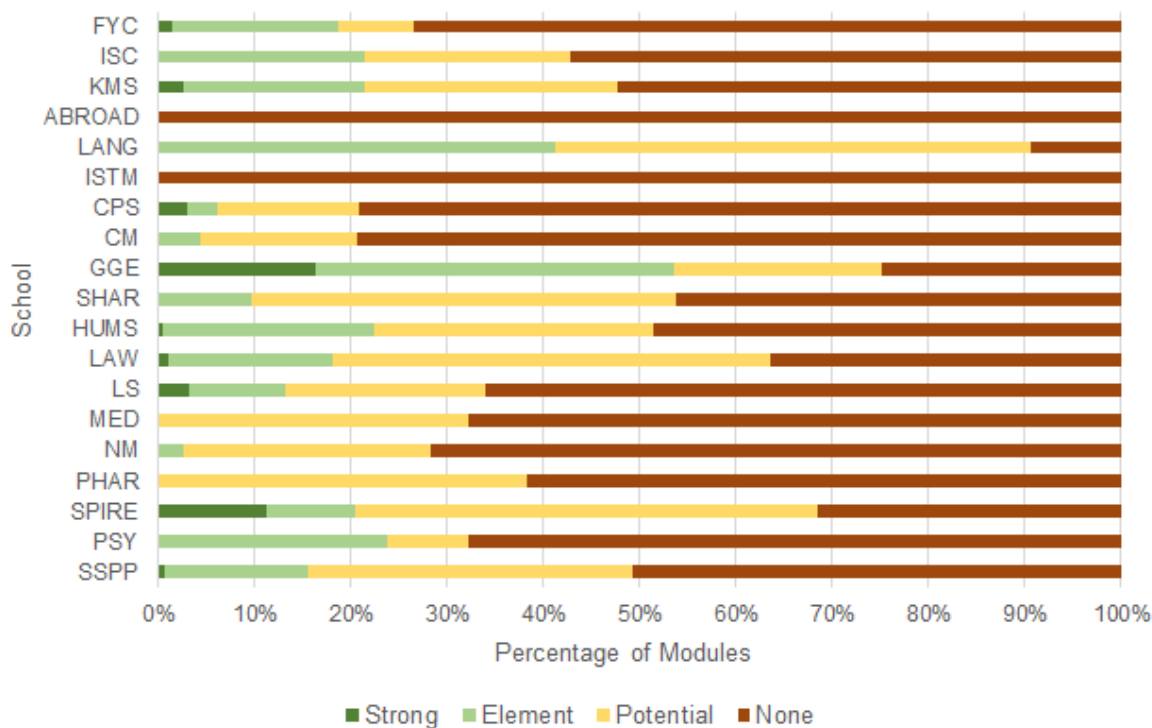


Figure 5: Percentage of modules from each school in 2016-17 which had strong embedding of Education for Sustainability (EfS), an element of EfS, the potential to embed EfS, or where the potential to embed EfS was not obvious/practical.

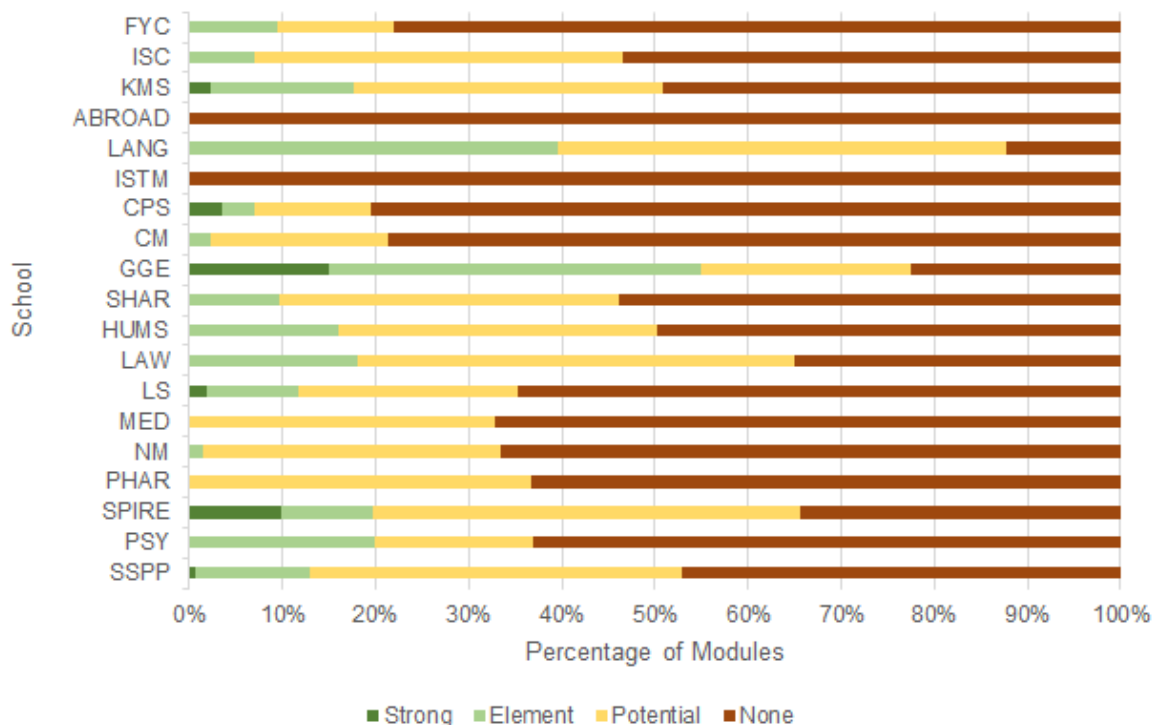


Figure 6: Percentage of modules from each school in 2015-16 which had strong embedding of Education for Sustainability (EfS), an element of EfS, the potential to embed EfS, or where the potential to embed EfS was not obvious/practical.

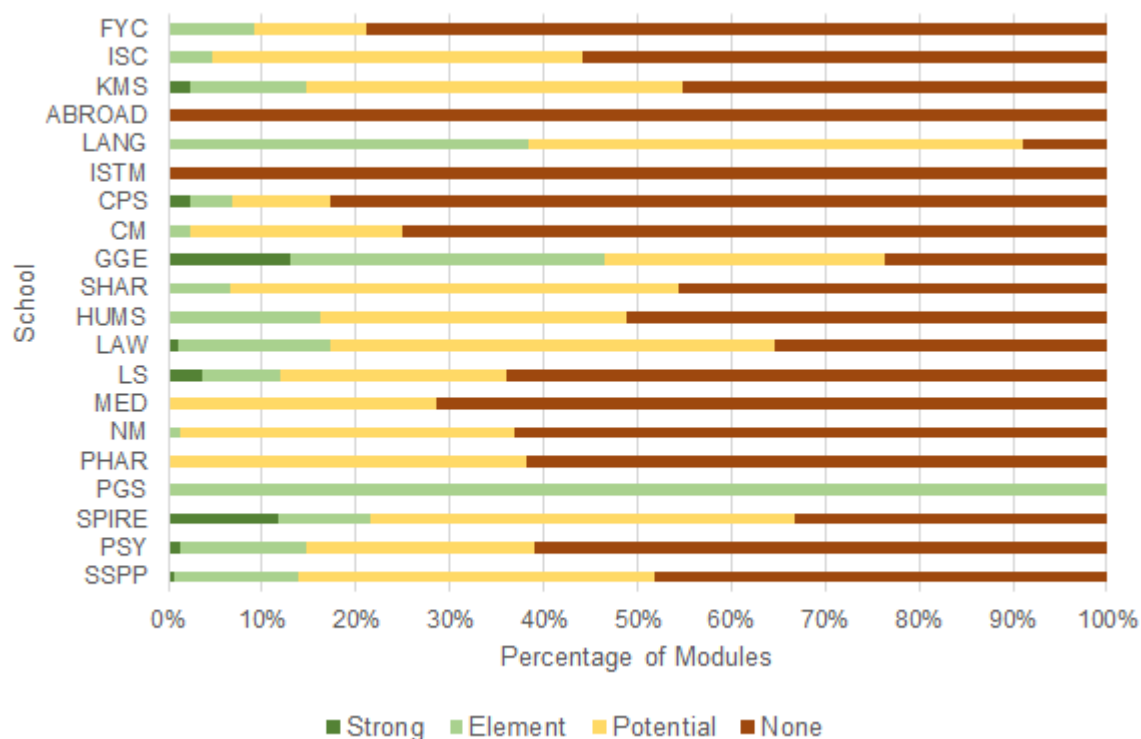


Figure 7: Percentage of modules from each school in 2014-15 which had strong embedding of Education for Sustainability (EfS), an element of EfS, the potential to embed EfS, or where the potential to embed EfS was not obvious/practical.



Student Numbers and EfS

Figure 8 shows the number of students who studied each School's modules, and the resulting level of EfS learning opportunities engaged with. The School of Geography, Geology and the Environment has the highest number students experiencing 'strong' EfS through their modules at 577, whilst Keele Management School has the highest number of students experiencing an element of EfS at 2104. Modules with the potential to embed EfS could have reached 3255 students in Keele Management School in 2016-17, 2469 students in the Law School, and over 1200 students in each of the School of Health and Rehabilitation, School of Politics, Philosophy, International Relations and the Environment, and School of Humanities. These figures support the need for further work to embed EfS in the curriculum where opportunities are available.

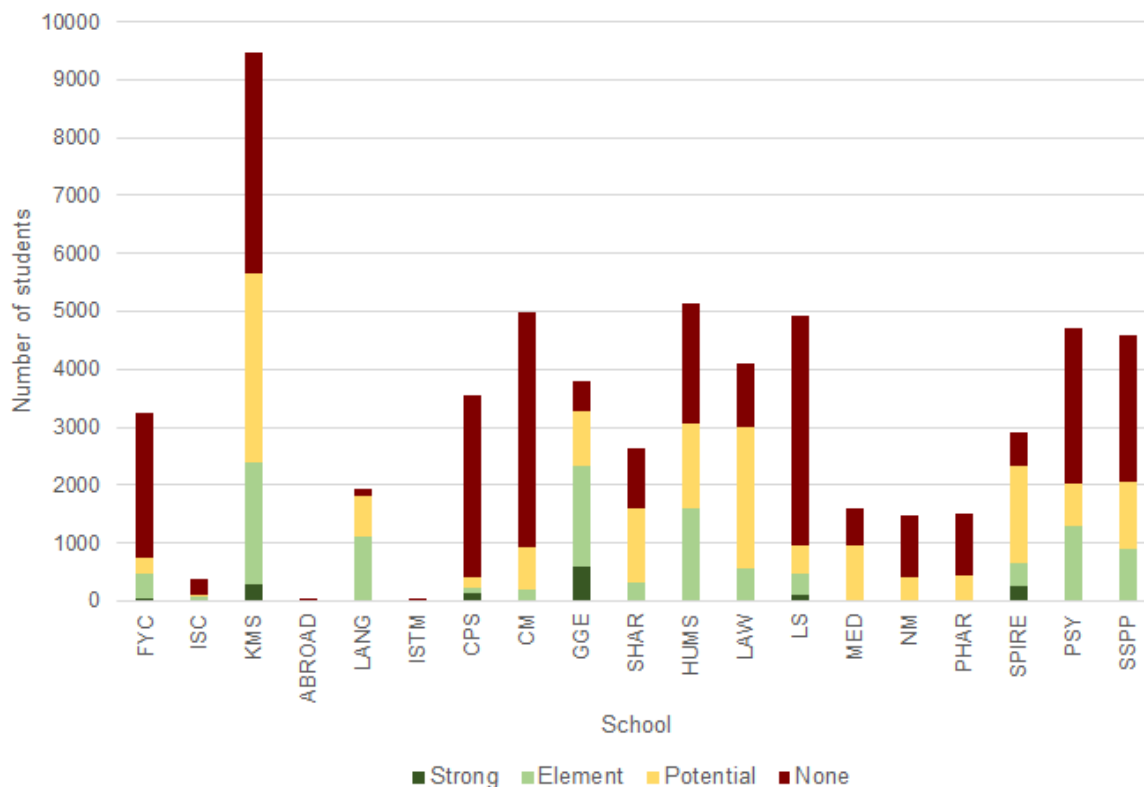


Figure 8: Total number of students (cumulative) studying modules in each school with each level of embedded Education for Sustainability (EfS) - strong EfS, an element of EfS, the potential to embed EfS, or no obvious or practical potential for embedding EfS in academic year 2016-17. The source data includes all modules students were enrolled on in 2016-17, therefore individual students appear multiple times within the dataset.

Conclusion and next steps

Across the University there are modules that include strongly embedded sustainability themes and engage students with EfS. There are a larger number of modules across all Faculties that incorporate an element of EfS, offering students the opportunity to explore sustainability themes through the curriculum. These modules are available at all levels, and include electives as well as compulsory modules and option modules. There is considerable scope however to increase the number of modules that have an element of embedded EfS, as the pool of identified 'potential' modules shows. Furthermore, the modules where the potential to embed EfS is not obvious or



practical should continue to be reviewed to ensure opportunities to reduce the number of modules in this category are not missed.

The overall aim in the Education for Sustainability strategy is for all *programmes* to embed EfS ensuring that students engage with sustainability throughout their curriculum. Therefore, it is by no means desirable for all *modules* to embed EfS, but all *programmes* should. Phase 2 of this work is therefore to use this data and module diets for each programme to identify the degree of EfS engagement at programme level. Phase 3 of this work will be to discuss these reports through School Learning and Teaching Committees to identify areas of EfS practice that have been missed, and to work to identify opportunities to enhance EfS learning opportunities in programmes. The modelling of credits embedding EfS within programmes will also feed-in to work to establish a 'sustainability pathway' available to all students through the Portfolio Curriculum and Development project.

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