UK Engagement Survey 2014

The second pilot year

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Foreword from Professor Stephanie Marshall

This report presents the findings from the second pilot of the UK Engagement Survey (UKES), the only national survey in the UK focusing on students' engagement with their studies. Participation in the survey has increased from nine institutions in 2013 to 32 institutions in 2014, testament to the appetite in the sector for data that goes beyond students' perceptions of the quality of what they receive, to address how they themselves participate in their own learning. This second pilot of UKES has used a wider range of questions, again largely drawn from the National Survey of Student Engagement developed in the US. In addition to the questions used in 2013, this year we have used questions asking students about, among other things, their engagement with research, their reflection on their own and others' views, and on their development of a range of skills and abilities.

The importance of students' engagement with their learning has long been known to those working on the enhancement of learning and teaching, but it is only recently that awareness has reached more broadly and affected the public discourse around educational quality. The proposed inclusion of items on engagement in the UK's National Student Survey will only accelerate this trend. This is a positive step and the Higher Education Academy is proud to have led the way in shifting attention towards institutions' support and encouragement for student engagement, and away from an emphasis on more passive modes of learning. The UK is not alone in experiencing this shift, as is illustrated by the recent implementation of a national student engagement survey in Ireland. Promoting the value of students' participation in important educational activities not only has the benefit of focusing attention on aspects of learning and teaching that are closely related to the quality of students' learning outcomes; it also promises to help reconceptualise learning and teaching in higher education as being about challenging students to invest time and intellectual energy in their course, not passively receiving an education offered as a consumer experience.

Students themselves are already well aware of the value of engagement. The 2014 Student Academic Experience Survey, run jointly by the Higher Education Academy and the Higher Education Policy Institute, found that the number one reason students gave for their experience not matching their expectations was the sense that they had not put in enough effort themselves.[1] With students' active input to their studies being so crucial both to their perceptions of the value of their studies and to how well they learn and develop, it is incumbent upon the sector to continue to develop an understanding of students' engagement in learning activities. The UK Engagement Survey is a key part of that effort.

Following the successive pilots in 2013 and 2014, UKES will run in Spring/Summer 2015 as a fully fledged survey, building on the evidence collected so far about its reliability and validity. We hope that institutions continue to make use of the survey as a key tool for understanding and improving their students' participation in a range of important educational activities.

Professor Stephanie Marshall
Chief Executive
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[1] https://www.heacademy.ac.uk/hepi-hea-student-academic-experience-survey-2014

Foreword from Professor Alexander McCormick

As the accessibility, productivity, and effectiveness of tertiary education have become increasingly vital to individuals and entire nations, assurance of quality in higher education has assumed a new urgency. League tables and global university rankings are proliferating, and many constituents – students, parents, and policy makers – are calling for new evidence of return on investment. Quality has taken centre stage.

In the United States, the National Survey of Student Engagement (NSSE) arose out of deep and longstanding frustration with the discourse about quality in America's colleges and universities. Since the early 1980s, the de facto arbiter of quality was a news magazine that ranked colleges and universities on such things as reputation, students' entrance examination scores, and faculty salaries. These rankings were designed to comport with the general public's belief that wealthy and highly selective institutions must be the best. But those truly concerned with quality in undergraduate education lamented the absence of teaching and learning from the quality discourse.

NSSE was created to change the conversation about quality. It did something shockingly simple: ask undergraduates about their experiences, with a sharp focus on educationally purposeful activities. Built on a foundation of empirical findings linking those activities with desired educational outcomes, NSSE did not concern itself with input measures, institutional wealth and prestige, or student satisfaction. It focused on students' behaviour in and outside of class. It also emphasised what was actionable—aspects of the student experience amenable to intervention by institutional leaders, deans, instructional staff, and others in a position to enhance educational effectiveness.

NSSE did not publish a new set of rankings. From the outset, the ground rules were that institutionally identifiable results would not be made public without prior approval. Instead of naming winners and losers, NSSE's focus was on diagnosis and improvement. A simple thought experiment reveals the wisdom of this approach: Had the results been made public, institutional reputations and the value of graduates' degrees would be on the line. Knowing that their survey responses could affect their future prospects, students might prioritise their self-interest above the need for honest and candid answers, and the trustworthiness of the results would be compromised.

The ideas behind NSSE have since caught on internationally. Undergraduates now report on their exposure to and participation in effective educational practices in Australia, Canada, China, Ireland, New Zealand, and South Africa, with exploratory efforts underway in several other countries. The United Kingdom is now poised to join this growing international movement to shift the quality discourse and promote evidence-informed improvement. The findings reported in these pages offer keen insights into the student experience at a range of institutions, and as the UK Engagement Survey goes to full administration in 2015 we'll learn even more about strengths and opportunities for improvement.

When NSSE was first getting started, the project's advisory board cautioned against thinking of the project as a data collection enterprise. They insisted that what NSSE really represented was an ambitious agenda for change, and change would not be achieved by merely collecting survey data year after year. The real work lay in converting survey data to useful information, then using that information to inform improvement efforts.

I commend Alex Buckley and his colleagues at the Higher Education Academy for the careful and thorough work documented in this report. I also credit the visionary leaders whose institutions contributed to the two successful pilot projects. This work represents important first steps in a larger and more important agenda for higher education, in the UK and around the world.

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Quick facts about the survey

This was the second pilot of the UK Engagement Survey (UKES). UKES has been developed to help higher education institutions understand and improve their students' engagement with their studies. It is now widely accepted that students' engagement with their course – the amount and quality of effort they invest in a range of important educational activities – is a key determinant of how much and how well they learn. Engagement surveys are becoming key tools for quality enhancement around the world, and UKES is the UK's national survey focused on this important dimension of learning and teaching.

The majority of UKES is derived from the National Survey of Student Engagement (NSSE), which is widely used in North America and around the English-speaking world. The UKES questionnaire includes 50 items, 39 drawn from NSSE and 11 unique to UKES. Thirty-two institutions participated and 25,500 responses were collected. This marks a substantial increase from the first pilot in 2013 when nine institutions took part and 8,500 responses were collected.

What does the questionnaire look like?
The 50 questions are grouped into the following areas:

Higher-order learning
- Five questions ask about the emphasis students' coursework has placed on a range of mental activities, such as analysing ideas and applying facts and theories.

Collaborative learning
- Four questions explore the frequency with which students have interacted with each other in a range of educationally important ways.

Academic integration
- Six questions ask students about their interaction with academic staff.

Course challenge
- Two questions focus on students' preparation for class, and their sense of being challenged by the course.

Reflective and integrative learning
- Six questions ask about the frequency with which students have combined ideas from different parts of their course, connected what they have learnt to their prior experiences, and reflected on their own and others' views.

Engagement with research
- Four questions focus on the emphasis in the course on students learning about the methods and results of research.

Formulating and exploring questions
- Four questions explore the course emphasis on students formulating and exploring open-ended lines of enquiry.

Skills development
- Twelve questions ask about students' development of a range of important skills and abilities.

Time spent on activities
- Seven questions collect information about the number of hours that students spend on different activities.

Who participated in the survey?
25,533 responses were gathered from students attending the 32 participating institutions, with an overall response rate of approximately 13% (down from 17% in 2013). The demographic characteristics of respondents are similar to those in 2013: 62% of the respondents were female and 38% male; 92% were full-time and 8% were part-time; 85% were from the UK, 7% from the rest of the EU, and 8% from outside the EU; 95% were in undergraduate education and 5% were taught postgraduates.

What other information is available?
In addition to this publication, a full report of the cognitive testing of the questions is also available on the HEA website, along with the report from the 2013 survey and a set of case studies describing how institutions have used student engagement data to improve learning and teaching.

What is happening next year?
2014 marked the second and last pilot administration of UKES. The survey will run in Spring/Summer 2015 as a full survey, using a robustly tested questionnaire and a rigorous delivery mechanism. For further information about UKES 2015, and to express an interest in taking part, please visit www.heacademy.ac.uk/surveys

Summary of findings

Structure of the questionnaire

Factor analysis and scale reliability testing found that the questionnaire effectively measures a range of distinct but related dimensions of students' engagement with their studies. Those dimensions emerge from the questionnaire largely as expected, with the exception of the following:

- The items asking about the extent to which students' experiences have contributed to their development of skills and abilities form two distinct groups. Three of the items, focusing on numerical analysis, work-related skills and addressing practical problems constitute one dimension, with the rest of the items (on thinking skills, writing skills, etc) constituting another dimension.
- The questionnaire does not explicitly address in a satisfactory manner the challenge that students perceive. Two items on students' arriving at timetabled sessions prepared, and on their sense of being challenged, do form a dimension of their engagement but not a reliable scale.

Cognitive testing

Cognitive interviewing was undertaken in order to explore students' interpretations of the survey items. The research found that, overall, students were clear about what the questions were asking, and that they were positive about the survey. More specific findings included the following:

- The items on the amount of time students spend on a range of activities were found to be particularly helpful to students as a reflective tool.
- Students felt that engagement surveys focused on aspects of their experience that were particularly important to them, in contrast to satisfaction surveys (such as the National Student Survey), which they felt were more useful for institutions.
- Substantial further work is required on the items on students formulating and exploring questions, which were used for the first time in 2014.
- The items on engagement with research may also require further attention.
- New items on staff–student partnership were developed and successfully tested with students, for possible inclusion in the 2015 survey.

Differences between student characteristics

As in 2013, the most substantial differences between student groups related to discipline of study, but other differences were also found:

- Predictably large differences were found between disciplines regarding the development of skills in numerical analysis: for example 64% of students in European languages and literature reported very little development, compared to only 3% of Engineering students.
- Other disciplinary differences mirrored the results from 2013: 26% of students in Maths and Computer Sciences, and 20% of students in Physical Sciences, felt there was very little emphasis in the course on the evaluation of points of view and information sources, compared to 2% of History and Philosophy students and 3% of Social Studies students.
- There are predictably large differences between the hours that full- and part-time students estimated working for pay (particularly off campus).
- However, students did not report a similarly large difference in the amount of time they spent preparing for taught sessions; the averages for full-time and part-time students differ by less than half an hour. However, only a relatively small number of part-time students were included in the survey.
- The UKES 2014 questionnaire included a group of items on the extent to which students have developed a range of skills and abilities. As the items focus on students' development, we would expect to see an increase in results as they progress through their degrees. The mean score for the Skills Development scale does show statistically significant increases from the first to the second year, and the second to the third year, for full-time undergraduates. There is no significant increase from the third to the fourth year.
- Of the twelve individual items on the development of skills, ten show significant differences between year groups, and of those, there are five items with substantively important differences, including those on the development of skills in critical and analytical thinking, clear and effective speaking, and the analysis of numerical information.

Differences between institutional characteristics

A number of differences were found between students when grouped by the types of institution they attend:

- Students at Million Plus and University Alliance institutions reported more frequently making changes to work based on feedback than those at Russell Group or unaffiliated institutions.
- Students attending Million Plus and University Alliance institutions also reported engaging in collaboration with other students more frequently.
- The largest difference between pre-1992 and post-1992 institutions was for the item on students' active participation in creating knowledge: 23% of students at pre-1992 institutions felt there was very little emphasis on that activity in their course, compared to only 10% of students at post-1992 institutions.
- In another surprising finding, students at post-1992 institutions felt there was greater emphasis in the course on learning about the results and methods of research.
- Students at very large institutions reported the least frequent collaboration with fellow students, and those at medium-sized institutions reported the most frequent. A similar difference is also seen for the item on the development of the ability to work with others; 29% of students at very large institutions reported that they had developed very much in that area, compared to 43% of students at medium-sized institutions.

International comparisons

The similarity between UKES and the National Survey of Student Engagement means that international comparisons are available for a number of the items, however the very different contexts and cultures should be borne in mind when interpreting these results:

- Students in the UK reported spending markedly less time preparing for taught sessions than their counterparts in North America and Ireland (the available comparators); an average of 7 hours per week for UK students and 15 hours per week for North American students. However, at least some of this difference is likely to be due to differences in how students in the different countries understand the nature of preparing for class; the cognitive testing indicates that UK students interpret the concept particularly narrowly.
- There are also pronounced differences in the frequency that students reported interacting with staff. For most of those items, students in the UK fall between those in North America and Ireland. The exception is the item on discussing academic performance with staff, for which UK students reported the greatest frequency of interaction.

1. Introduction

In 2014 the Higher Education Academy (HEA) ran the second pilot of the UK Engagement Survey, following on from the first pilot in 2013 (reported in Buckley 2013). The 2014 survey was a greatly expanded project, with 32 institutions engaged and around 25,500 responses; an increase from nine institutions and 8,500 responses in 2013. The second pilot was carried out in order to test a broader range of items, with a larger population and a wider range of institutions.

Interest in surveys of student engagement is continuing to grow, both internationally and in the UK. There is an increasing sense of an international engagement 'movement' (Coates and McCormick 2014) inspired by, and founded on, the National Survey of Student Engagement (NSSE) developed in the US. The UK Engagement Survey is largely a UK adaptation of NSSE, but with additional elements specific to the UK (see section 2.2).

In the UK, the growing interest in engagement surveys is demonstrated most clearly by the increase in participation in UKES itself. This is inspired by two main factors. Firstly, there is a general interest in the connected concepts of student engagement, the student voice, and staff–student partnerships. Inspired by desires to improve educational outcomes, temper emerging consumerist tendencies, move beyond an emphasis on satisfaction and build on effective teaching practices, those working in higher education in the UK have found the concept of engagement to be a useful focus. Secondly, there has been interest in engagement in the context of the review of the influential National Student Survey; the authors of the research into the purposes and suitability of the NSS have recommended the inclusion of a small number of new items that explore issues related to engagement (Callender *et al.* 2014).

The purpose of this report is to present the results from the 2014 UK Engagement Survey. As the report of a survey pilot, this document reports a range of fairly complex statistical analyses, alongside the findings of the cognitive testing and more basic descriptive analyses of how the results differ by student and institutional characteristics. Aside from providing technical information about the performance of the survey, the report is also designed to support participating institutions in interpreting and using their own results, and to prompt thinking at sector level about students' engagement with their studies. The primary purpose of UKES is to allow institutions to explore how their own students engage with a range of important activities, and to benchmark themselves within the UK context and internationally. No institutional results are made public, and UKES data do not contribute to any league tables. The focus is firmly on the responsible use of student feedback to understand and improve learning and teaching processes and practices within institutions, departments and courses.

Finally, the report is also intended to inform anyone interested in participating in UKES 2015. Next year will see the first non-pilot year of the survey, and the greater formalisation and consistency of delivery will ensure that the findings are as robust as possible.[2]

The structure of the report is as follows. Section three provides some brief background to the survey and describes the changes from 2013. Section three describes the profile of respondents, and section four gives an overview of the aggregated results. Section five explores the structure of the survey, and describes findings relating to its validity and reliability. Sections six and seven provide breakdowns of the results by student and institutional characteristics respectively. Section eight presents comparisons between the engagement of students in the UK and elsewhere in the world. Section nine consists of a summary of the cognitive testing of the survey, and was contributed by the researchers from King's College London.

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[2] For more information about UKES 2015 please visit https://www.heacademy.ac.uk/consultancy-services/surveys/ukes

1.1 Statistical note

The results of statistical significance tests have been reported at various points in this report. This is a standard test of confidence that a given result (such as female students reporting a greater frequency of connecting their learning to social issues) is not due to chance. However, statistical significance is sensitive to the number of respondents, and with over 25,000 responses to UKES 2014, very small differences that are of no real practical interest can easily be statistically significant. Therefore, 'effect size' has also been reported. Effect size is a method of determining whether a difference is not only reliable (not due to chance), but also big enough to be of practical or substantive importance. Of course, this will often be down to the interests of the reader, but effect size can be a useful guide as to which findings may be of value. Unless stated otherwise, the statistic used to measure effect size is Cramer's V. Effect sizes are reported as small (0.1–0.3), medium (0.3–0.5) and large (over 0.5); but even small effect sizes indicate the presence of differences that are not only reliable but also substantial enough to be of interest.

Testing for both statistical significance and effect sizes are methods developed for random samples: they relate to the confidence with which results can be extrapolated from the sample to the whole population. UKES is not answered by a random sample of students, but like virtually all large-scale student surveys is a census survey and the respondents are self-selecting. For that reason, significance and effect size levels should be taken as indicative. It is also the case that the participating institutions have not been randomly selected, and the findings should therefore not be taken to be completely representative of student engagement in UK higher education (HE) as a whole.

Finally, a caveat about the use of averages. The response options for the items in the survey are not equally placed: the difference from 'never' to 'sometimes' isn't necessarily (and in fact is unlikely to be) the same as the difference from 'often' to 'very often'. For this reason, as far as possible all categories are used when results are presented. However, for some analyses – such as the creation of scale scores, factor analyses, correlation analyses and scale reliability tests – the item responses have by necessity been averaged, to arrive at a mean value (between 1 and 4 where there are four response options).

1.2 Acknowledgements

1.3 About the author

Dr Alex Buckley is Surveys Manager at the Higher Education Academy and oversees all three of the HEA student surveys: UKES; the Postgraduate Taught Experience Survey; and the Postgraduate Research Experience Survey. He has co-ordinated UKES since its inception and authored the report on the 2013

survey. In 2012 he published *Making it count: Reflecting on the NSS in the process of enhancement*. Before joining the HEA in 2010, Alex taught applied and professional ethics at the University of Leeds after gaining a PhD in philosophy at the same institution in 2008.

2. Background to the project[3]

The UK Engagement Survey was first piloted in 2013 with nine institutions, with a questionnaire consisting of 14 items all drawn from the National Survey of Student Engagement. NSSE was first implemented in the US in 2000 and has since spread across the English-speaking world and beyond (Coates and McCormick 2014). The original intention behind NSSE was to raise the profile of student learning in considerations of educational quality, and counteract the overwhelming focus on factors like research prowess, reputation, size and wealth. By drawing on decades of research into effective student learning which highlighted the crucial importance of the amount and quality of effort students invest in various educational activities, NSSE focused on a range of aspects of student engagement (McCormick *et al.* 2013b).

In the UK, the term 'student engagement' has developed a slightly parallel meaning, and encompasses not only how students individually invest effort in their courses, but also how students collectively influence the decisions that affect them ('student voice'). The UK Engagement Survey focuses on the former aspect of engagement.

The process for UKES 2014 was similar to that for 2013. Administration was devolved to the participating institutions, who were able either to use the Bristol Online Surveys (BOS) platform or a system of their choosing. Institutions were able to add their own items to the questionnaire, or add the UKES items to their existing surveys. They also had the freedom to administer the survey to any group of students they chose, at any point between 1 February and 31 June 2014. Most institutions administered the survey online, though some also used paper questionnaires. Data was either collected directly by the HEA through BOS, or was passed to the HEA by the institution. Data was then aggregated and coded by the HEA. The extensive flexibility available to institutions was intentional, to facilitate institutional participation in the second pilot year. UKES will run again in 2015, not as a pilot but as a full formal survey process; some of the flexibility on item selection and delivery method will therefore be curtailed in order to ensure greater consistency and that the data are as robust as possible.

Seventeen of the 2014 survey items were compulsory for all participating institutions; these were largely the items used in 2013. There were 36 further items that institutions were free to use if they wished. Take-up of these extra items was varied. Six institutions used only the compulsory items and 11 institutions used all 50; the mean item take-up was 37.

The items drawn from NSSE were used under licence from Indiana University.

2.1 Participating institutions

The 32 participating institutions are listed below. However, please note that not all of these participated on an institution-wide basis. In some cases institutions piloted the survey in a range of selected programmes, and in three cases the survey was administered within a single school or course.

UKES 2014 participants

Abertay University	Liverpool School of Tropical Medicine
University of Bath	Nottingham Trent University
Birmingham City University	Open University
Birmingham University	Oxford Brookes University
Bournemouth University	Queen Mary, University of London
Bradford University	Queens University Belfast
Cardiff University	Sheffield Hallam University

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[3] The background presented here builds on that provided in Buckley (2013), which contains more information about the history and research behind the core items.

Cardiff Metropolitan University	Southampton University
Cumbria University	Strathclyde University
Greenwich University	University of the West of Scotland
Heythrop College	Warwick University
University of Hull	University of West London
Lancaster University	University of Winchester
Leeds University	Worcester University
Leicester University	York University
Liverpool John Moores University	York St John University

2.2 Changes from 2013[4]

Modification of core scales

In response to the results of the 2013 survey and a programme of cognitive testing, minor changes were made to the items used in 2013, which then formed the compulsory 'core' of the questionnaire for institutions participating in 2014.[5]

- Minor changes were made to the four Critical Thinking items used in 2013, and a further NSSE item was added on memorising course material.
- An item in the Course Challenge scale on exceeding the expectations of teaching staff was removed; the 2013 cognitive testing found that it was unclear for students. An item was added on the frequency of making changes to work based on feedback. This is not drawn from NSSE but was developed for UKES (see the 2013 cognitive testing for more information).
- An item included in both the Collaborative Learning and Academic Integration scale, on discussing ideas from the course with other students and family members, was removed due to issues found by the cognitive testing, and replaced by two further items drawn from NSSE, on asking another student to help with understanding, and on preparing for exams with other students. This has the added benefit of aligning the scale with the Collaborative Learning indicator in NSSE, and facilitating international comparisons.
- An extra NSSE item was added to the Academic Integration scale, on working with teaching staff on activities other than coursework, as an important area not already covered.

Additional scales

Beyond the compulsory items, 33 new items were added to the survey, for institutions to use if they wished.

- Six items on integrative and reflective learning (connecting ideas with prior experience and social issues, combining ideas from different modules, and reflecting on one's own and other peoples' views) were added to the survey. These items are all drawn from the Reflective and Integrative Learning indicator in NSSE. [6] The three items about reflecting on one's own and others' ideas, and on learning something that changed understanding, were added to NSSE in 2005 to supplement existing items (which included a version of the item on combining ideas from different modules) (Nelson Laird *et al.* 2006, 2008). Two further items on connecting learning to prior experiences and to social issues were added when the survey was revised in 2013, in order to create the indicator (McCormick *et al.* 2013a). These extra items were included in order to investigate aspects of deep learning that go beyond higher-order activities such as analysing and evaluation information (and already included in the survey) to include questions that explored "combining a variety of resources, discussion of ideas with others, reflecting on how individual pieces of information relate to larger constructs or patterns, and applying knowledge in real world situations… integrating and synthesizing information with prior learning in ways that become part of one's

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[4] The full list of items and scales used in 2013 is available at:
https://www.heacademy.ac.uk/resources/detail/nss/engagement_for_enhancement
[5] Findings relating to the validity and reliability of the 2013 questionnaire are reported in Buckley (2013), and the cognitive testing is reported in Kandiko and Matos (2013).
[6] The NSSE indicator also includes an item on including diverse perspectives in assignments, that was not used for UKES.

thinking and approaching new phenomena and efforts to see things from different perspectives" (Nelson Laird *et al.* 2008, p,470).

- Seven items asking students to estimate the number of hours spent on a range of activities was also added, drawn from NSSE. Unlike most of the other scales, these items are not designed to explore a particular educational activity, but to provide contextual information on students' experiences.

- Outcomes measures were added to the survey, in the form of twelve items on the extent to which students' experiences had contributed to the development of their knowledge and skills. Ten of those items were drawn from NSSE, with two (on becoming an independent learner, and being innovative and creative) being developed specifically for UKES. These items are intended to cover a range of important outcomes of higher education, but do not attempt to include all key skills and abilities for all disciplines.

One of the ongoing features of UKES will be the careful introduction of new questions that address areas of particular interest in the UK. For 2014 two new scales were piloted that explored students' engagement in, and with, research. There is good evidence that involving students in research has important benefits. The increase in active learning and staff–student contact that such involvement brings has advantages (Pascarella and Terenzini 2005), but more fundamentally it encapsulates the characteristic value of higher education:

> Research shows that, while for many academics the distinguishing feature of higher education should be the interconnection between teaching and discipline-based research, this is often not readily revealed in practice and…is not easily identifiable in the student experience of the curriculum. (Healey and Jenkins 2009, p.113)

> It is hard to imagine a richer educational setting for student-faculty interaction than working side by side with a faculty member on a research project. (Kuh *et al.* 2010, p.214)

In collaboration with national experts on undergraduate research, and using frameworks drawn from the literature, two groups of questions were developed for piloting. The first group of four questions focuses on research-led learning and teaching, understood as incorporating the findings and methods of research into the curricula (Griffiths 2004). The four questions ask students about the emphasis the course places on their learning about the results of research, the methods of research, how knowledge is created in the subject, and generally exploring the subject knowledge base. This scale is intended to explore the extent to which students are exposed to, and encouraged to engage with, the practice and products of research in their discipline.

The second set of questions focuses on students' active participation in the process of inquiry. Closely based on Levy and Petrulis' (2012) framework, the four questions ask students about the extent to which the course emphasises formulating their own lines of inquiry, exploring those self-formulated lines of enquiry, exploring lines of enquiry formulated by staff, and actively participating in the creation of knowledge. This scale is designed to evaluate the extent to which students are participating in the process of research and inquiry.

3. Profile of respondents

3.1 Response rates

There was a wide variation between the response rates achieved by the 32 participating institutions, and the average institutional response rate was 17%. Overall, 25,533 responses were collected from an approximate total population of 203,000; an estimated overall response rate of **13%**. As a new survey and as a pilot, in many institutions administered with little or no promotion, the somewhat low response rate is to be expected, but should be borne in mind when interpreting the results. Resource will be invested to ensure a higher response rate in 2015.

3.2 Student characteristics

The tables in this section describe the profile of the student respondents. The flexible nature of the pilot means that demographic information is not available for all students from all institutions; the tables therefore provide information about the number of institutions who have contributed data for each category.

Table 1, Gender				
	Count	Percentage	Valid percentage[7]	Contributing institutions
Female	14443	56.6	61.7	31
Male	8964	35.1	38.3	31
Other/blank/prefer not to say	993	3.9	N/A	20
No contributed information	1133	4.4	N/A	1

Female students are disproportionately represented in the survey population.

Table 2, Level				
	Count	Percentage	Valid percentage	Contributing institutions
Undergraduate	20192	79.6	95.3	27
Taught postgraduate	1004	4.0	4.7	12
No contributed information	4162	16.4	N/A	4

Table 3, Undergraduate year of study				
	Count	Percentage	Valid percentage	Contributing institutions
1	8347	41.3	43.4	23
2	7533	37.3	39.2	22
3	2510	12.4	13.1	18
4	797	3.9	4.1	13
5	23	0.1	0.1	12
6	6	0.0	0.0	9
No contributed information	976	4.8	N/A	1

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[7] The 'valid percentage' is calculated for the population limited to those students for whom the relevant demographic information (e.g. level of study) is available.

Table 4, Taught postgraduate year of study	Count	Percentage	Valid percentage	Contributing institutions
1	492	49.0	68.7	9
2	94	9.4	13.1	8
3	38	3.8	5.3	6
4	19	1.9	2.7	6
5	70	7.0	9.8	3
6	3	0.3	0.4	1
No contributed information	288	28.7	N/A	1

As part of the piloting process, institutions had a high degree of flexibility about which students to invite to complete the survey. Table 2 shows that 12 institutions included taught postgraduate students in the survey population, leading to around 1,000 responses. Tables 3 and 4 show that most institutions limited survey invitations to first-year and second-year students (overwhelmingly undergraduates); in many cases this was to avoid impacting on responses to the National Student Survey. However, a substantial number of responses were received from students in a full range of years.

Table 5, Mode	Count	Percentage	Valid percentage	Contributing institutions
Full-time	22424	88.4	91.9	30
Part-time	1974	7.8	8.1	25
No contributed information	973	3.8	N/A	1

Part-time students are underrepresented in the survey population.

Table 6, Discipline	Count	Percentage	Valid percentage	Contributing institutions
Medicine and Dentistry	742	3.3	3.1	18
Subjects allied to Medicine	2125	9.6	9.9	23
Biological Sciences	2264	10.2	9.7	26
Veterinary sciences, Agriculture and related subjects	146	0.7	0.6	15
Physical Sciences	1313	5.9	7.6	24
Mathematical and Computer Sciences	1343	6.0	7.9	24
Engineering	1849	8.3	7.9	20
Technologies	241	1.1	1.1	14
Architecture, Building and Planning	337	1.5	1.5	10
Social Studies	2033	9.1	9.1	26
Law	627	2.8	2.6	20
Business and Administrative Studies	2484	11.2	11.0	26
Mass Communication and	181	0.8	0.8	17

	Count	Percentage	Valid percentage	Contributing institutions
Documentation				
Linguistics, Classics and related subjects	468	2.1	2.3	19
European Language, Literature and related subjects	394	1.8	1.7	18
Eastern, Asiatic, African, American and Australasian languages	69	0.3	0.3	10
Historical and Philosophical Studies	741	3.3	3.7	22
Creative Arts and Design	1344	6.0	5.7	25
Education	1406	6.3	6.6	22
Combined	1644	7.4	6.8	21
No contributed information	483	2.2	N/A	1

The Discipline categorisation that has been used is the Joint Academic Coding System (JACS) top-level subject groups. JACS version 2.0 has been used; this differs from the latest 3.0 version in combining mathematical sciences and computer sciences into a single category.

Table 7, Discipline cluster				
	Count	Percentage	Valid percentage	Contributing institutions
Health sciences	3217	12.8	13.0	25
STEM	8975	35.6	36.3	30
Arts and humanities	3391	13.5	13.7	26
Social sciences	7450	29.6	30.2	28
Combined	1674	6.6	6.8	21
No contributed information	483	1.9	N/A	1

Table 8, Age group				
	Count	Percentage	Valid percentage	Contributing institutions
17 and under	16	0.1	0.1	8
18–25	16735	68.0	79.8	24
26–35	1851	7.5	8.8	24
36–45	1129	4.6	5.4	24
46–55	754	3.1	3.6	22
56–65	340	1.4	1.6	18
66 and over	152	0.6	0.7	14
No contributed information	3641	14.8	N/A	8

Table 9, Domicile				
	Count	Percentage	Valid percentage	Contributing institutions
UK	19953	80.8	85.4	30
Other EU	1534	6.2	6.6	30
Non-EU	1879	7.6	8	29
No contributed information	1237	5.4	N/A	2

3.3 Institutional characteristics

Table 10, Institution size			
	Count	Percentage	Contributing institutions
Small	4284	16.8	8
Medium	5932	23.2	9
Large	9654	37.8	9
Very large	5648	22.1	5

Institutions have been grouped using the Higher Education Statistics Agency figures for total undergraduate population for 2012/13. Small: under 10,000. Medium: 10,000 – 14,999. Large: 15,000 – 20,000. Very large: over 20,000.

Table 11, Institution type			
	Count	Percentage	Contributing institutions
Post-1992	10811	42.3	15
Pre-1992	14663	57.4	15
Small and specialist	59	0.2	2

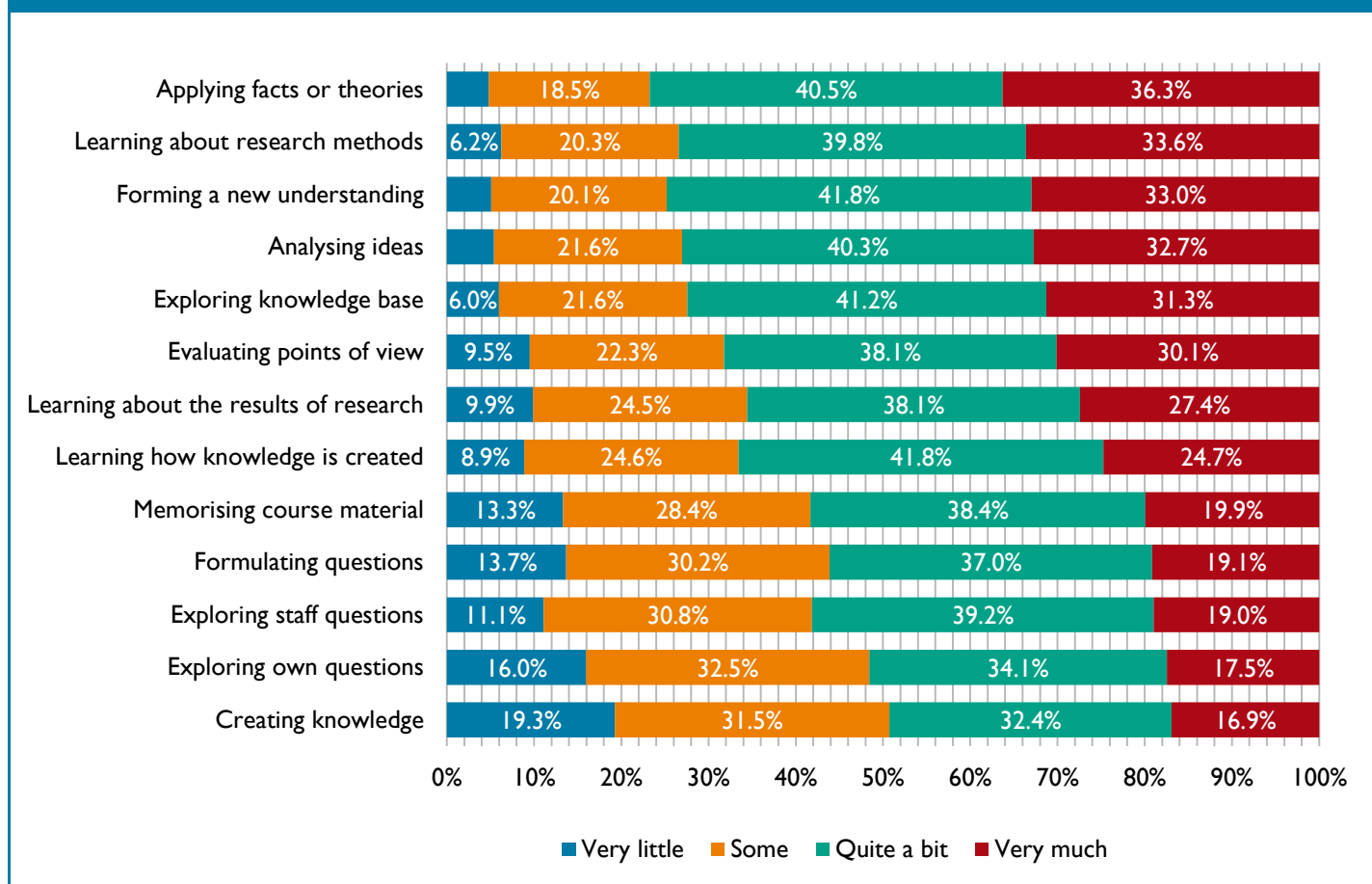| Table 12, Mission group			
	Count	Percentage	Contributing institutions
Million Plus	4798	18.8	6
Guild HE	1919	7.5	3
Russell Group	8209	32.2	8
University Alliance	4365	17.1	7
Unaffiliated	6242	24.4	8

4. Item results

The numerical results for all items are available in the Data Annex (available at on the HEA website at http://www.heacademy.ac.uk/consultancy-services/surveys/ukes/ukes-final-reports), but charts have been provided here to facilitate comparisons.

Please note that the scores for different questions should only be compared with caution; the different concepts in operation may lead to different 'appropriate' responses. Item results are affected by student and institutional characteristics, and these are discussed in sections 6 and 7.

Chart 1 shows the results for the 26 items asking about the emphasis placed in coursework on a range of various important educational activities. The chart shows that, overall, students perceived their coursework as placing the greatest emphasis on the application of facts, theories and methods, and on learning about methods of research. Students felt the least emphasis was placed on exploring their own questions, and on their active participation in creating knowledge; for the latter item, nearly 20% of students felt there was very little emphasis in the coursework.

Chart 1, Course emphasis questions: "During the current academic year, how much has your coursework emphasized the following activities?"

Activity	Very little	Some	Quite a bit	Very much
Applying facts or theories		18.5%	40.5%	36.3%
Learning about research methods	6.2%	20.3%	39.8%	33.6%
Forming a new understanding		20.1%	41.8%	33.0%
Analysing ideas		21.6%	40.3%	32.7%
Exploring knowledge base	6.0%	21.6%	41.2%	31.3%
Evaluating points of view	9.5%	22.3%	38.1%	30.1%
Learning about the results of research	9.9%	24.5%	38.1%	27.4%
Learning how knowledge is created	8.9%	24.6%	41.8%	24.7%
Memorising course material	13.3%	28.4%	38.4%	19.9%
Formulating questions	13.7%	30.2%	37.0%	19.1%
Exploring staff questions	11.1%	30.8%	39.2%	19.0%
Exploring own questions	16.0%	32.5%	34.1%	17.5%
Creating knowledge	19.3%	31.5%	32.4%	16.9%

N = 11979–24035

Chart 2 shows that 84% of students felt 'quite a bit' or 'very much' challenged by the course to do their best work.

Chart 2, Course challenge question: "During the current academic year, to what extent has your course challenged you to do your best work?"

| Challenged by course | 12.9% | 41.6% | 42.4% |

Very little ■ Some ■ Quite a bit ■ Very much
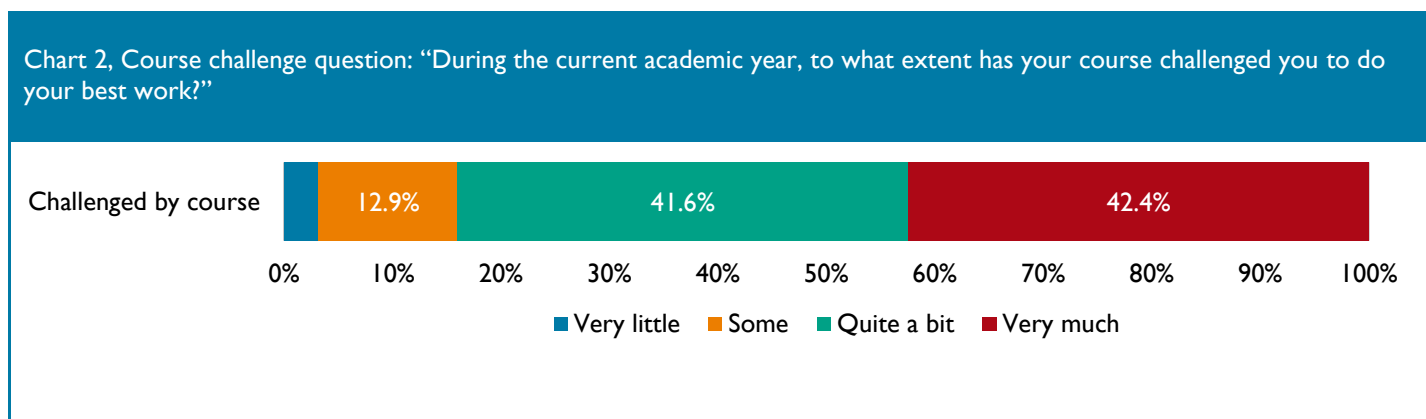
N = 22076

Chart 3 shows the overall results for the items asking students about their development of a range of skills and abilities. The chart shows that students felt their development to be greatest for becoming independent, and critical-thinking skills. The least development perceived was for being an informed citizen and solving real-world problems.

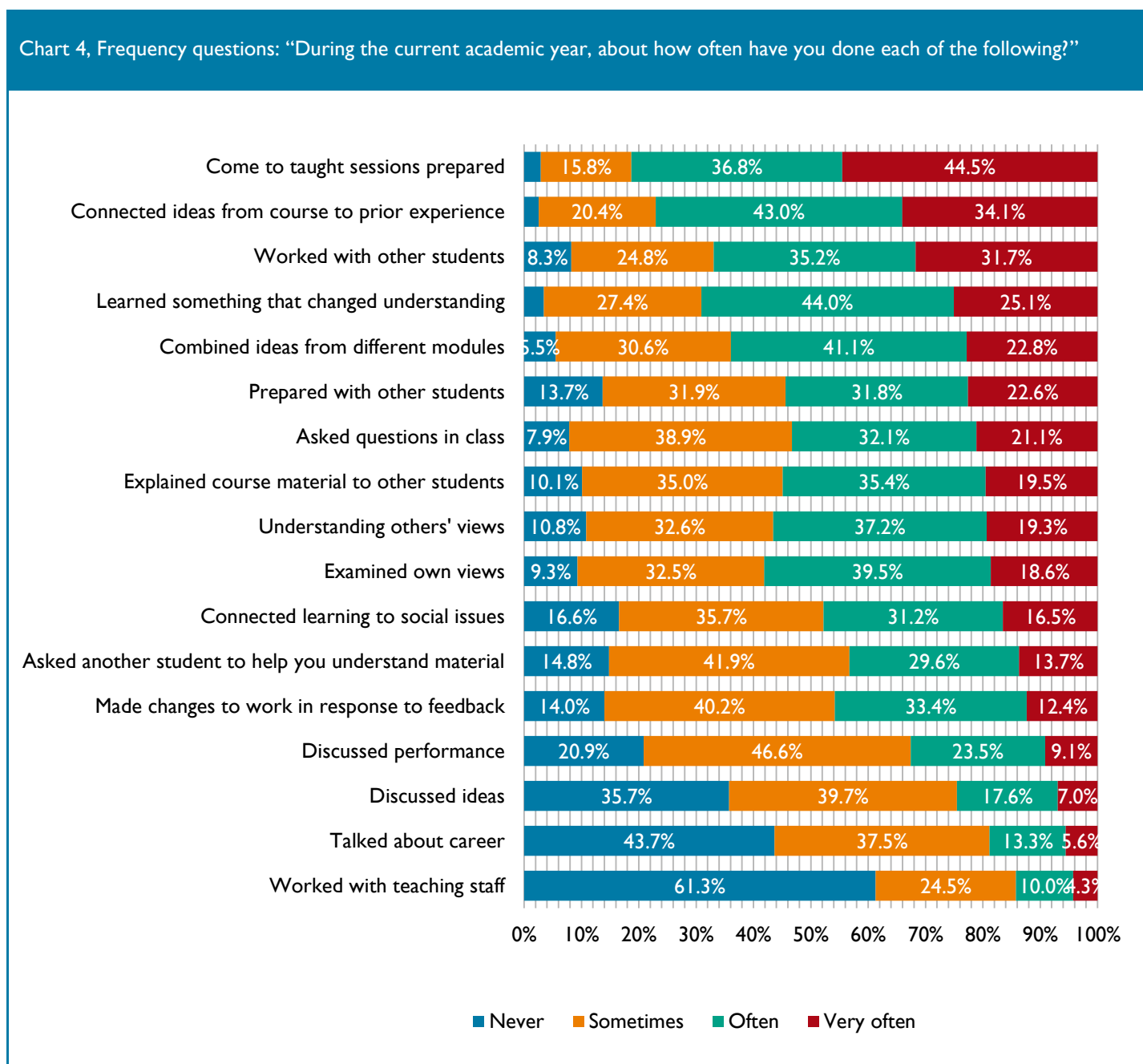Chart 3, Skills development questions: "How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?"

Area	Very little	Some	Quite a bit	Very much
Becoming independent		14.3%	36.3%	45.3%
Thinking critically		14.8%	40.4%	41.8%
Working with others	8.1%	20.3%	37.1%	34.5%
Writing	11.0%	21.5%	38.6%	28.9%
Understanding people of other backgrounds	15.4%	25.3%	31.8%	27.5%
Analysing numerical information	18.7%	25.0%	30.2%	26.1%
Speaking	12.8%	24.2%	37.1%	25.8%
Being creative	11.8%	28.0%	34.7%	25.6%
Work-related skills	14.7%	28.0%	32.2%	25.1%
Personal values	14.3%	26.8%	34.8%	24.1%
Solving real-world problems	16.6%	29.7%	32.9%	20.8%
Being an informed citizen	15.1%	30.6%	34.3%	19.9%

Very little ■ Some ■ Quite a bit ■ Very much

N = 15277–17101

Chart 4 shows the overall results for the items about the frequency with which students have participated in various educational activities. By far the least common activity reported is working with teaching staff on activities other than coursework; all of the items directly referring to interactions with teaching staff are reported as having relatively low frequencies. The activities reported as having the highest frequency are

coming to taught sessions prepared, and connecting ideas from the course to prior knowledge and experience.

Chart 4, Frequency questions: "During the current academic year, about how often have you done each of the following?"

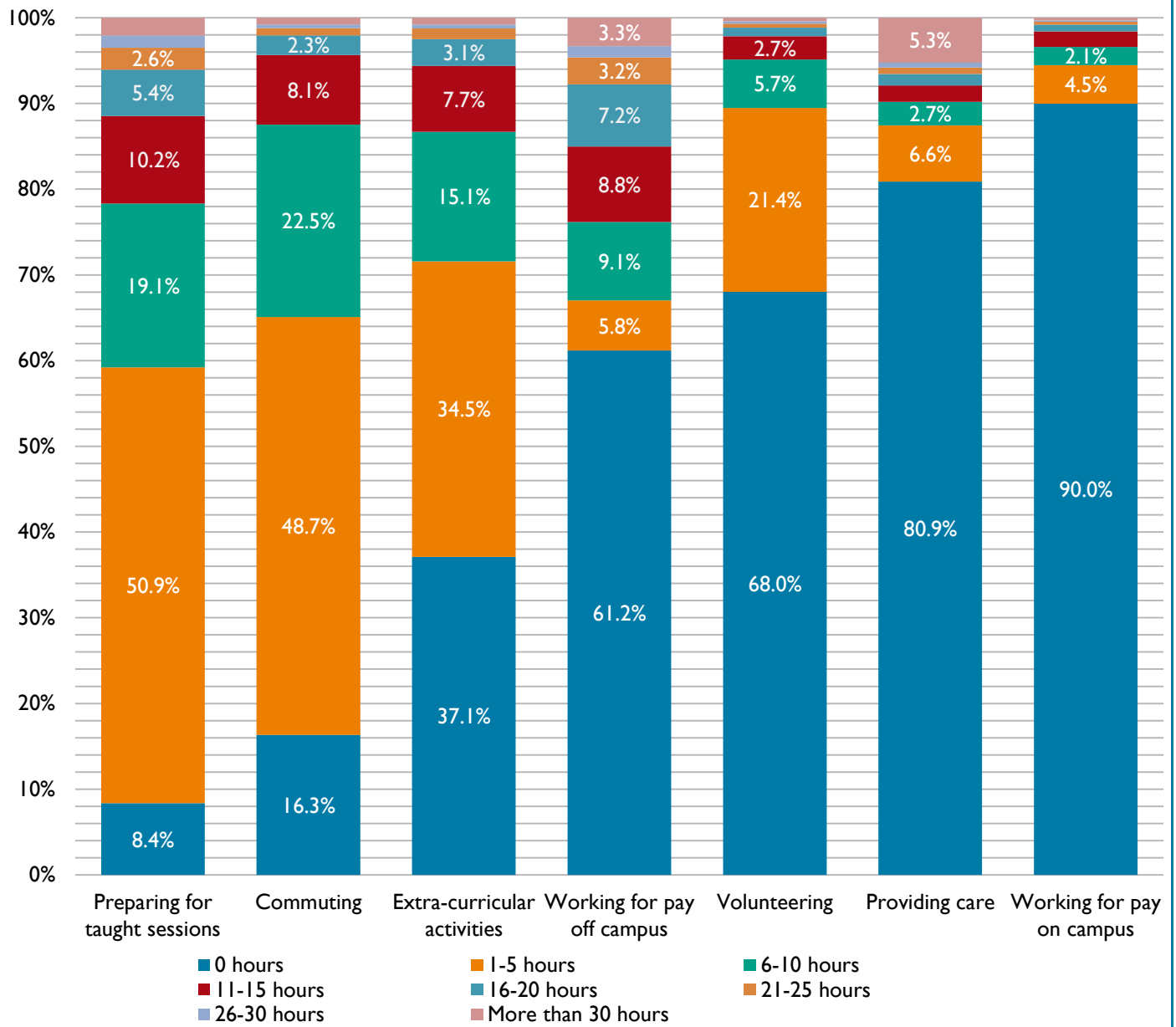| Activity	Never	Sometimes	Often	Very often
Come to taught sessions prepared		15.8%	36.8%	44.5%
Connected ideas from course to prior experience		20.4%	43.0%	34.1%
Worked with other students	8.3%	24.8%	35.2%	31.7%
Learned something that changed understanding		27.4%	44.0%	25.1%
Combined ideas from different modules	5.5%	30.6%	41.1%	22.8%
Prepared with other students	13.7%	31.9%	31.8%	22.6%
Asked questions in class	7.9%	38.9%	32.1%	21.1%
Explained course material to other students	10.1%	35.0%	35.4%	19.5%
Understanding others' views	10.8%	32.6%	37.2%	19.3%
Examined own views	9.3%	32.5%	39.5%	18.6%
Connected learning to social issues	16.6%	35.7%	31.2%	16.5%
Asked another student to help you understand material	14.8%	41.9%	29.6%	13.7%
Made changes to work in response to feedback	14.0%	40.2%	33.4%	12.4%
Discussed performance	20.9%	46.6%	23.5%	9.1%
Discussed ideas	35.7%	39.7%	17.6%	7.0%
Talked about career	43.7%	37.5%	13.3%	5.6%
Worked with teaching staff	61.3%	24.5%	10.0%	4.3%

N = 13556–25190

Chart 5 shows the results for the seven items exploring the number of hours that students reported spending on a range of activities. Of these activities, students reported spending the highest amount of time preparing for taught sessions, and the least amount of time working for pay on campus. The amount of time that students reported spending on preparing for taught sessions is perhaps low, with 59% of students reporting that they spend between 0 and 5 hours. However, the cognitive testing found that students have a relatively narrow understanding of preparing for taught sessions (see section 9). This is supported by comparisons between UKES results and other data collected by the Higher Education Academy; the 2014 Student Experience Survey (jointly run with the Higher Education Policy Institute) found that full-time undergraduate students report spending an average of 18.5 hours on independent study more generally; the average that the equivalent group of students in UKES report spending just on preparing for taught sessions is 6.8 hours.[8]

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[8] For more information about the HEA–HEPI student experience survey, including the results from 2014, please visit https://www.heacademy.ac.uk/hepi-hea-student-academic-experience-survey-2014.

Chart 5, Time spent questions: "About how many hours do you spend in a typical 7-day week during term-time doing the following?"

Category	0 hours	1-5 hours	6-10 hours	11-15 hours	16-20 hours	21-25 hours	26-30 hours	More than 30 hours
Preparing for taught sessions	8.4%	50.9%	19.1%	10.2%	5.4%	2.6%		
Commuting	16.3%	48.7%	22.5%	8.1%	2.3%			
Extra-curricular activities	37.1%	34.5%	15.1%	7.7%	3.1%			
Working for pay off campus	61.2%	5.8%	9.1%	8.8%	7.2%	3.2%		3.3%
Volunteering	68.0%	21.4%	5.7%	2.7%				
Providing care	80.9%	6.6%	2.7%					5.3%
Working for pay on campus	90.0%	4.5%	2.1%					

N = 13556–25190

5. Relationships between the items and scales

An important part of the pilot process is to investigate the relationship between the items in the scales. This is in order to ensure that the questionnaire is valid, reliable, and is working as expected. In particular, it is important to ensure that there is no duplication between the items, and that the items can be grouped into a set of robust scales that explore distinct but related dimensions of engagement.

5.1 Correlations between the items

The correlation levels between all the items are included in the Data Annex. As can be seen, the correlation levels range from very small (-0.00 for the relationship between time spent providing care and the course emphasis on memorising information) to very large (0.80 for the relationship between the course emphasis on students formulating their own questions and exploring their own questions).

A number of features are clear from the correlation table. Firstly, there is in general a reasonable relationship between the items, with quite a high proportion of relationships of 0.3 or above (classified as a medium-sized relationship), suggesting that the items address broadly similar issues. Secondly, clear groupings can be seen, which suggests factor analysis will reveal that the questionnaire explores a range of distinct dimensions (see below). Thirdly, there are few correlations around 0.80, which would indicate there was unnecessary duplication within the survey; in fact there is only one correlation of 0.80, between students formulating and exploring their own questions (the only correlation above 0.7), suggesting that the acts of formulating and exploring lines of enquiry may not be sufficiently distinct for respondents to warrant two distinct items, and consideration should be given to combining them into one.

Finally, it can clearly be seen from the table that the items addressing the amount of time spent on various activities stand somewhat apart from the rest of the questionnaire. The largest correlation between an item in that group and any other is a correlation of 0.18, between the amount of time spent on volunteering, and the frequency of working with teaching staff outside coursework. Given the nature of the time spent items, it is unsurprising that there is only a weak relationship with the rest of the questionnaire. They use very different response options, and do not address a specific concept or activity but a very wide range of activities. For this reason, the seven items on time spent on activities have been excluded from the factor analysis below.

5.2 Factor analysis

The purpose of factor analysis is to explore any distinct dimensions of the phenomena under investigation, by revealing the elements lying behind the correlations between the items. By looking at patterns in the correlations between the items, factor analysis groups the items together into a range of factors or components that explain the scores for the individual items. This provides evidence about the constructs measured by the questionnaire; its 'construct validity'.[9]

Factor analysis found nine components with eigenvalues over 1, a standard cut-off point relating to the amount of total variance in the survey explained by that component. Together those nine components explain **60%** of the total variation in the results for the 43 items used in the analysis.

Table 13 shows the results of the factor analysis. The values in the table indicate the influence the results for each item have on each of the nine components. The colour-coding indicates the strength of the influence. Values of 0.3 and above are standardly taken to indicate that an item defines a dimension of the phenomenon under investigation; in this case, students' engagement with their course.

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[9] Only data from institutions using all items were used for this analysis, consisting of 10,470 responses. Principal Components Analysis was used, with Direct Oblimin rotation. Direct Oblimin is an oblique rotation, which allows for correlation between the components. The pattern matrix shows the unique contribution of each component to the variance in the items, and excludes any variance due to correlation between the components. The Kaiser-Meyer-Olkin value was 0.95, and Bartlett's Test of Sphericity was statistically significant; both of these indicate the suitability of factor analysis.

Table 13, Pattern matrix									
Item	1	2	3	4	5	6	7	8	9
Speaking	.705	.081	.103	.095	-.054	.026	.021	-.097	.061
Writing	.638	-.068	.075	.224	-.061	.128	.069	-.135	.115
Understanding people of other backgrounds	.637	.032	.035	-.002	.229	-.041	-.042	.237	.011
Personal values	.632	.032	.056	.008	.241	-.047	-.117	.150	.046
Being an informed citizen	.563	-.016	.093	.038	.220	-.020	-.101	.193	-.141
Working with others	.524	.415	-.068	-.014	-.027	-.073	-.157	-.110	-.157
Becoming independent	.522	-.035	-.056	.045	-.013	.148	-.042	-.225	-.192
Being creative	.509	.064	.065	-.038	.008	.013	-.298	-.138	-.094
Thinking	.472	-.039	-.021	.114	.008	.262	.001	-.222	-.188
Prepared with other students	.008	.791	-.010	.017	.023	.053	-.026	.035	.040
Asked another student	.003	.767	.014	.030	-.052	.039	.039	.166	.071
Worked with other students	.043	.683	-.044	-.068	.034	-.079	-.097	-.195	-.080
Explained course material	-.107	.575	.147	-.062	.147	-.021	-.059	-.179	-.064
Talked about career	.012	-.036	.810	-.009	-.010	.000	.029	.048	-.095
Discussed ideas	-.016	-.016	.771	-.007	-.024	.012	-.062	-.009	-.004
Worked with teaching staff	-.049	.034	.759	.006	-.021	-.037	-.038	.120	-.084
Discussed performance	.004	-.023	.758	.012	-.012	-.010	-.015	-.131	.047
Changes to work	.118	.114	.420	.129	.059	.097	.029	-.109	.152
Asked questions	.044	.046	.384	-.109	.201	.048	-.065	-.296	.199
Research methods	-.007	-.030	-.003	.802	.054	-.030	-.109	-.070	-.048
Results of research	.003	-.037	.022	.750	.090	-.050	-.178	-.010	-.029
Subject knowledge	.054	-.003	.050	.691	.097	-.019	-.134	-.023	.012
Exploring knowledge base	.050	-.091	.009	.517	.143	.037	-.291	-.138	-.018
Memorising	.031	.251	.052	.332	-.052	.162	.258	.239	-.038
Connected ideas	-.087	-.010	-.044	.059	.719	.029	.003	-.182	-.159
Connected learning	.066	-.031	.095	-.001	.681	.046	-.027	.127	.097
Changed understanding	.060	.006	-.038	.093	.665	.078	.014	-.063	-.081
Understanding others' views	.108	.099	-.005	.026	.663	.030	-.017	.130	.188
Examined views	.097	.016	.082	.056	.616	.064	-.060	.070	.173
Combined ideas	-.093	.087	.086	.084	.551	.049	.001	-.132	-.143
Analysing	-.015	-.017	.031	-.005	.024	.812	-.063	-.001	.022
Applying	-.144	.075	.019	-.034	.067	.678	-.020	-.008	-.368
Forming	.061	.009	.001	.001	.122	.613	-.174	-.017	.148
Evaluating	.162	-.052	.033	.002	.162	.583	-.140	.068	.373
Exploring own questions	-.019	.036	.072	.088	-.014	.079	-.825	.059	.028
Formulating questions	-.002	.040	.030	.104	-.011	.089	-.809	.061	.044
Exploring staff questions	-.021	.038	.033	.139	-.001	.116	-.662	.021	-.068
Creating knowledge	.068	.083	.093	.162	.001	.014	-.658	.009	.042

Prepared for sessions	.032	.101	.092	.097	.086	.003	.057	-.635	.096
Challenged by course	.199	.018	.030	.117	-.038	.271	-.015	-.364	-.152
Analysing numerical information	.050	.111	.046	.216	-.071	.070	.078	.086	-.663
Solving real-world problems	.358	.015	.096	-.039	.212	.032	-.162	.188	-.442
Work-related skills	.315	.019	.173	-.028	.103	.019	-.083	-.012	-.439

0.60 - 1.0
0.50 - 0.59
0.40 - 0.49
0.30 - 0.39
0.20 - 0.29

- The first component is defined by nine of the 12 items asking about the development of a range of skills and abilities. The item loading most strongly is that relating to speaking skills. Note the strong loading of the item about skills in working with others on the second component, discussed below.

- The second component consists of the four frequency items exploring students' interaction with each other. The item about the development of skills in working with others loads sufficiently strongly on this component for its inclusion in the scale to be justified.

- The third component is defined by six items asking about the frequency of various kinds of interaction with academic staff. The item loading most strongly addresses the frequency of discussions about careers. The item loading most weakly focuses on the frequency of asking questions in class; this item also loads moderately onto components five (focused on integrative and reflective learning) and eight (addressing course challenge). Note the strong loading on this component of the item about the frequency with which students have made changes to their work on the basis of feedback; this strong loading indicates the extent to which using feedback to make changes can be considered an aspect of staff–student interaction.

- The fourth component consists of four items about the emphasis placed in the course on students' engagement with the methods and results of research. The item asking students about the emphasis placed in the course on the memorisation of information loads moderately onto a range of factors. Its strongest loading is on this factor, but its appropriate placement will be explored in the next section, looking at scale reliabilities.

- The fifth component is defined by six items asking about the frequency with which students have engaged in various kinds of reflection on learning and integration of learning. The item loading most strongly is about the connection of ideas from the course to prior experience.

- The sixth component consists of four items asking about the emphasis placed in the course on a range of critical thinking and higher-order learning activities. The item asking about the analysis of ideas and theories loads particularly strongly. Note also the strong loading on component nine of the two items on the application of facts, theories or methods and the evaluation of points of view; the latter loads positively, in the reverse direction to the others, indicating a reverse relationship to the component. Note the moderate loading on this component of the item asking about the extent to which the course has been challenging.

- The seventh component is defined by four items asking about the emphasis placed in the course on students formulating and exploring open-ended lines of enquiry. Note also the moderate loadings on this component of the items on the development of skills in being creative, and on the emphasis placed in the course on exploring the disciplinary knowledge base and on memorising information. The last item has a reverse relationship with the component.

- The eighth component consists of just two items, the strongest-loading being the item asking how often students came to taught sessions prepared; the item loading more weakly asks about the extent to which the course has challenged the student to do their best work. Note the moderate loading on this component of the item on asking questions in course discussions, and the moderate but reversed loadings of the items on understanding people of other backgrounds and memorising course material.

- Finally, the ninth component is defined by three items asking about the development of numerical, practical and work-related skills and abilities. Note the strong loading on this component of two items asking about the emphasis placed in the course on the application of facts and theories and also the evaluation of points of view, which has a reverse relationship with the component.

5.3 Scale reliabilities

The purpose of this section is to explore the extent to which the components identified by the factor analysis can be taken to be scales that reliably measure specific dimensions of engagement. This is done using Cronbach's alpha, which is a measure of internal consistency, understood as the average correlation among the items that make up the scale. Levels of 0.7 or higher are normally taken to be acceptable, but this is sensitive to the number of items in the scale. For short scales a lower value is acceptable, conversely for longer scales. The grouping of items into scales both illuminates the underlying constructs at work in a questionnaire, and facilitates the process of comparison and exploration by reducing the questionnaire to a small number of elements.

Skills development 1

The Cronbach's alpha for the scale consisting of nine of the 12 items asking about the development of knowledge and skills is **0.89**, indicating a high level of reliability.

Collaborative learning

The alpha for the scale consisting of four items asking about the frequency with which students have interacted with other students in a range of ways is **0.77**, indicating reliability. With the addition of the item about the development of the ability to work effectively with others, the value increases to **0.79**.

The value for the scale in 2013, which was identical except that in 2013 it did not include the item on preparing with other students, was 0.58.

Academic integration

For the scale consisting of six items about the frequency of interactions with academic staff (including making changes to work based on feedback), the alpha value is **0.80**, indicating that the scale is reliable.

The Cronbach's alpha value for the similar scale in 2013 (consisting of four of the six items) was 0.667.

Engagement with research

For the scale consisting of five items asking about the emphasis in the course on students' engagement with the methods and results of research, and the memorising of information, the Cronbach's alpha is **0.77**, above the acceptable level.

The item on the course emphasis on memorising information may be expected to align with the other questions on higher-order learning (discussed below) rather than the items on engagement with research. If that item is removed from this scale, the alpha value would increase to **0.85**. This indicates that the item reduces the ability of the scale to reliably measure a dimension of engagement, and that it should be removed.

Reflective and integrative learning

For the scale consisting of six items on the frequency with which students have engaged in reflection on their own and others' view, and in integrating ideas from different aspects of the course and beyond, the Cronbach's alpha is **0.83**, indicating reliability.

Higher-order learning

The Cronbach's alpha for the scale consisting of four items on the emphasis on critical thinking and higher-order activities is **0.80**, which is above the acceptable level. The value found for the same scale in 2013 was 0.77.

As discussed above, consideration can be given to including the item about the memorising of information in this scale. To do so would reduce the alpha value to **0.74**, which is still acceptable, but indicates that the item reduces the reliability of the scale as a measure of that dimension of engagement.

Formulating and exploring questions

The Cronbach's alpha for the scale consisting of four items asking about the emphasis placed in the course on formulating and exploring questions is **0.87**, well above the satisfactory level.

Course challenge

For the scale consisting of just two items, on the frequency with which students have prepared for taught sessions and the extent to which the course has challenged them, the Cronbach's alpha is **0.37**, below the acceptable level. Cronbach's alpha is sensitive to the number of items in a scale, and low alpha values are often found for particularly short scales such as this. However, the correlation between these two items is only 0.24 and they can be employed as a scale only with particular caution. The UKES questionnaire cannot be taken to *explicitly* measure course challenge reliably. It is measured *implicitly* by the survey as a whole, as the majority of the items focus on the amount and quality of effort that students have invested in the course.

Skills development 2

The Cronbach's alpha for the three items on the growth of skills and abilities around the world of work, numerical analysis and addressing real-world problems is **0.66**, slightly below the acceptable level, but satisfactory for a short scale consisting of only three items.

The factor analysis suggested that it may be appropriate to include in this scale the items on the course emphasis on the application of facts and theories and the evaluation of points of view. With both items included the alpha value improves slightly to **0.67**. With just the item on evaluating, the alpha value is **0.68**.

Time spent

As discussed, the seven items on the amount of time that students spend on a wide range of activities is not expected to form a scale exploring a particular dimension of engagement, and was not included in the factor analysis. The Cronbach's alpha for those seven items is **0.37**, justifying this view.

5.4 Scale findings

The scales that we suggest as appropriate, based on the factor analysis and scale reliability analysis, are described in Appendix 1, and the following findings relate to those suggested scales. However, the findings described above should be borne in mind, and different scales can be appropriately constructed given particular interests.

Factor analysis was re-run on the scales, rather than the items. This provides evidence about the extent to which the scales contribute to any higher-order factors. Factor analysis revealed one higher-order component with an eigenvalue over 1, explaining **48%** of the total variance. Table 14 includes the loadings of the scales onto that higher-order component.

Table 14, Scale results					
Scale	N	Mean	Std Deviation	Cronbach's alpha	Loading
Formulating and exploring questions	11906	2.57	0.81	0.87	0.76
Academic integration	22436	2.12	0.62	0.80	0.68
Collaborative learning	23413	2.68	0.70	0.77	0.47
Reflective and integrative learning	13162	2.77	0.64	0.83	0.75
Higher-order learning	23650	3.00	0.70	0.80	0.69
Engagement with research	14445	2.91	0.75	0.77	0.75
Skills development 1	14077	2.90	0.67	0.89	0.82
Skills development 2	16734	2.63	0.79	0.66	0.68
Course challenge	21006	3.24	0.63	0.37	0.56
Time spent	11269	1.99	0.64	0.37	N/A[10]

Table 14 shows that the Course Challenge and Higher-Order Learning scales have the highest mean values, meaning that students gave the highest responses for the items in those scales, whether in terms of frequency or emphasis; the high mean value for the Course Challenge scale is partly due to the high reported frequency of coming to taught sessions prepared. The lowest scale mean is for Time Spent, due to the nature of the response options. Of the other scales, the Academic Integration scale has the lowest mean value, reflecting the lower frequency with which students report interacting with staff, relative to other activities (see chart 4 above). The largest standard deviations are for Skills Development 1 and Formulating and Exploring Questions, indicating quite a large spread within the results. The spreads for Academic Integration and Course Challenge are narrower. The final column shows that all scales load strongly onto the higher-order (overarching) student engagement construct, and that Skills Development 1 has the most influence. The Collaborative Learning scale has the least influence.

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[10] As above, the items on time spent on activities were excluded from the factor analysis.

	Formulating & exploring questions	Academic integration	Collaborative learning	Reflective & integrative learning	Higher order learning	Engagement with research	Skills dev. 1	Skills dev. 2	Course challenge	Time spent
Table 15, Scale correlations										
Formulating & exploring questions	1	0.46	0.23	0.52	0.51	0.59	0.56	0.42	0.31	0.15
Academic integration	0.46	1	0.36	0.49	0.38	0.39	0.45	0.32	0.35	0.23
Collaborative learning	0.23	0.36	1	0.31	0.15	0.21	0.33	0.34	0.24	0.08
Reflective & integrative learning	0.52	0.49	0.31	1	0.50	0.49	0.55	0.38	0.31	0.19
Higher order learning	0.51	0.38	0.15	0.50	1	0.49	0.48	0.35	0.34	0.12
Engagement with research	0.59	0.39	0.21	0.49	0.49	1	0.57	0.46	0.35	0.10
Skills dev. 1	0.56	0.45	0.33	0.55	0.48	0.57	1	0.63	0.41	0.14
Skills dev. 2	0.42	0.32	0.34	0.38	0.35	0.46	0.63	1	0.30	0.13
Course challenge	0.31	0.35	0.24	0.31	0.34	0.35	0.41	0.30	1	0.10
Time spent	0.15	0.23	0.08	0.19	0.12	0.10	0.14	0.13	0.10	1

- 0.50–0.99
- 0.30–0.49
- 0.10–0.29

Table 15 shows the correlations between the scales. Correlation levels range from 0.08 (between Time Spent and Course Challenge) to 0.63 (between the two Skills Development scales). All correlations are statistically significant at the 0.01 level. The absence of very high correlations (over 0.8) provides evidence that the scales measure distinct (but related) aspects of engagement. The lack of correlation between the Time Spent scale (which does not focus on a particular activity) and the other scales is particularly clear from the table. Also notable are the large correlations several scales have with the Formulating and Exploring Questions scale, and the Skills Development 1 scale.

6. Breakdowns by student characteristics

Sections six and seven present selected comparisons between groups of respondents. Only comparisons of particular interest are shown in this section but comprehensive tables are available in the Data Annex.

As described above (section 1.1) effect sizes have been used to identify substantive differences that could be of particular interest. Effect sizes go beyond measures of statistical significance to identify differences that not only are not due to chance, but are also large enough to potentially be of interest; where statistical significance measures the reliability of differences, effect sizes measure their magnitude. Effect sizes are classified as small, medium and large, but the presence of even small effect sizes indicates substantive differences over and above statistical significance. The Data Annex includes detailed effect sizes for the differences between student groups.

To ensure that results are as representative as possible of the wider student population, and to avoid any risk that any individual institutions' results are identifiable, differences are only displayed where the following three conditions are met by each of the student groups reported: at least five institutions contribute data; no institution contributes more than 50% of the respondents; and there are at least 100 responses. An important limitation of the analyses reported here is that they are univariate, meaning that they simply show the proportion of respondents falling into each group. This does not take into account relationships between the variables. For example, older students may spend more time caring for dependents, but this may be a product of older students being predominantly part-time. Multivariate analysis, where the relationships between the variables are taken into account, is planned for the future.[11]

6.1 Discipline

As shown in the Data Annex, discipline is the variable for which there is the largest number of small and medium effect sizes, and the powerful influence of discipline on students' experiences of their course is well known. In fact, there is at least a small effect size for all 50 items, and a medium effect size for nine items. The largest differences are for items on the course emphasis on the evaluation of points of view, the frequency with which students have connected their learning to social issues, and the development of numerical analysis skills.
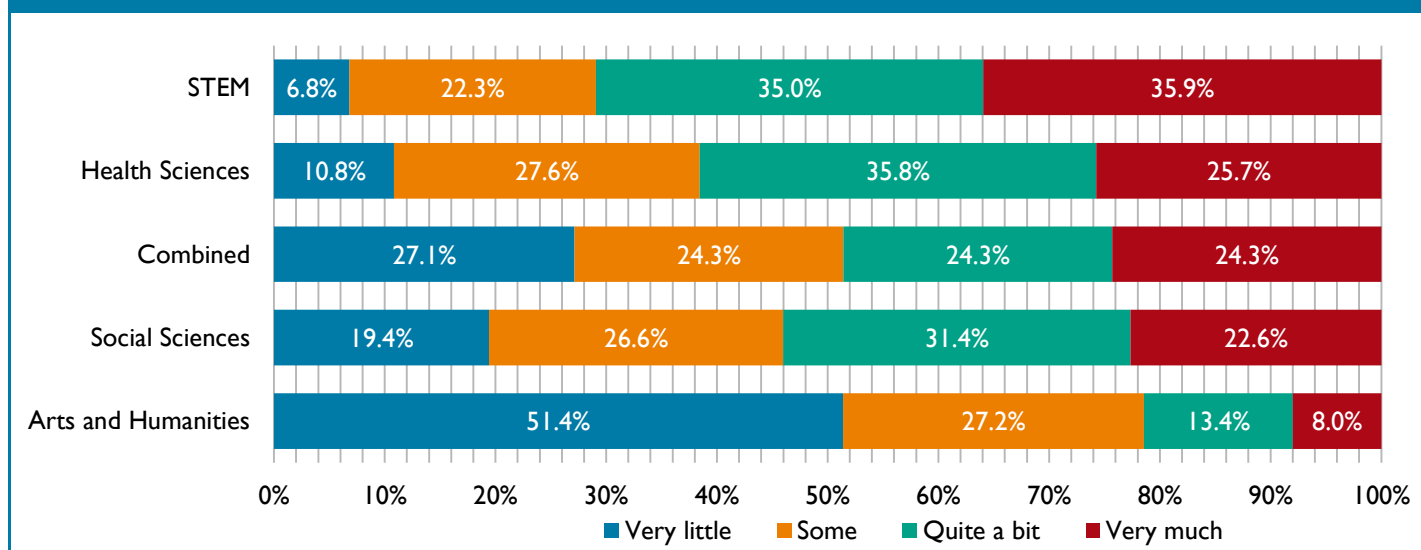

Chart 6, Skills development: "Analysing numerical information" for selected disciplines
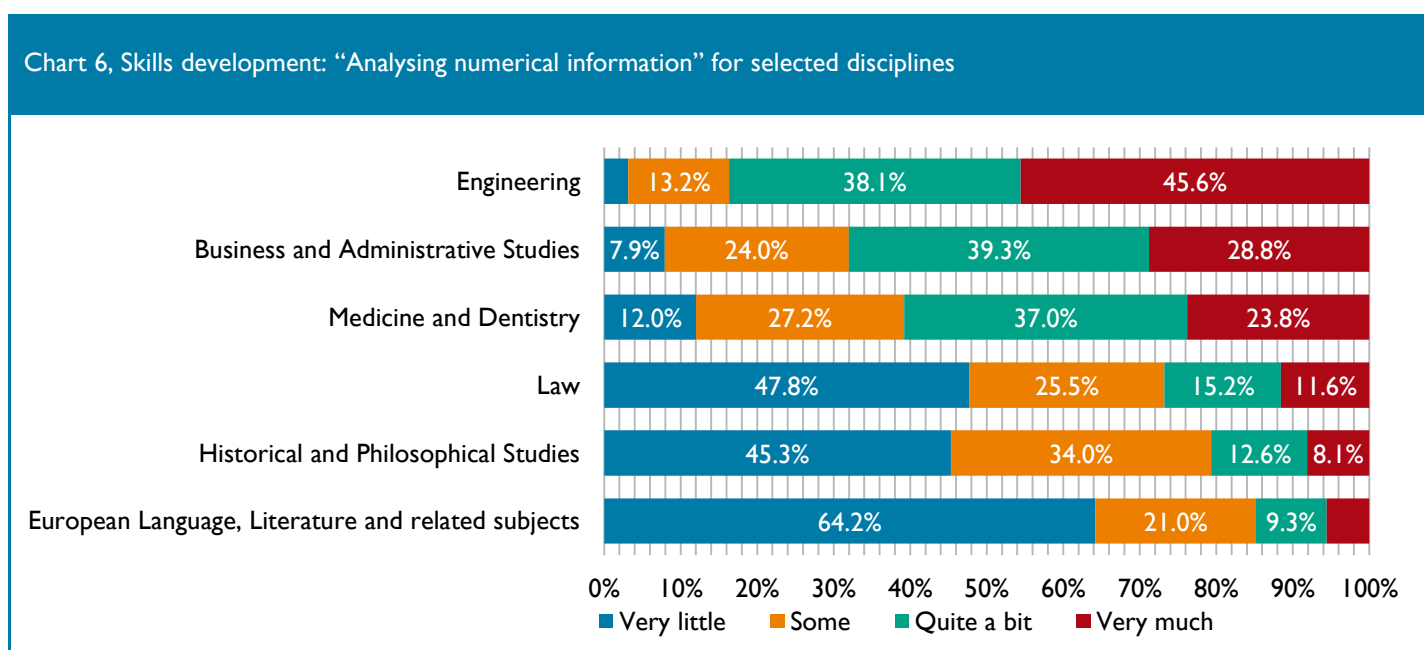
N = 324–1669

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[11] For a good recent example of the value of multivariate analysis of student survey data, exploring data from the NSS, see HEFCE (2014).

As is to be expected, there are pronounced differences between students' sense of their development of numerical analysis skills. While 46% of Engineering students thought that they have developed those skills very much, only 6% of European Languages and Literature students said the same.
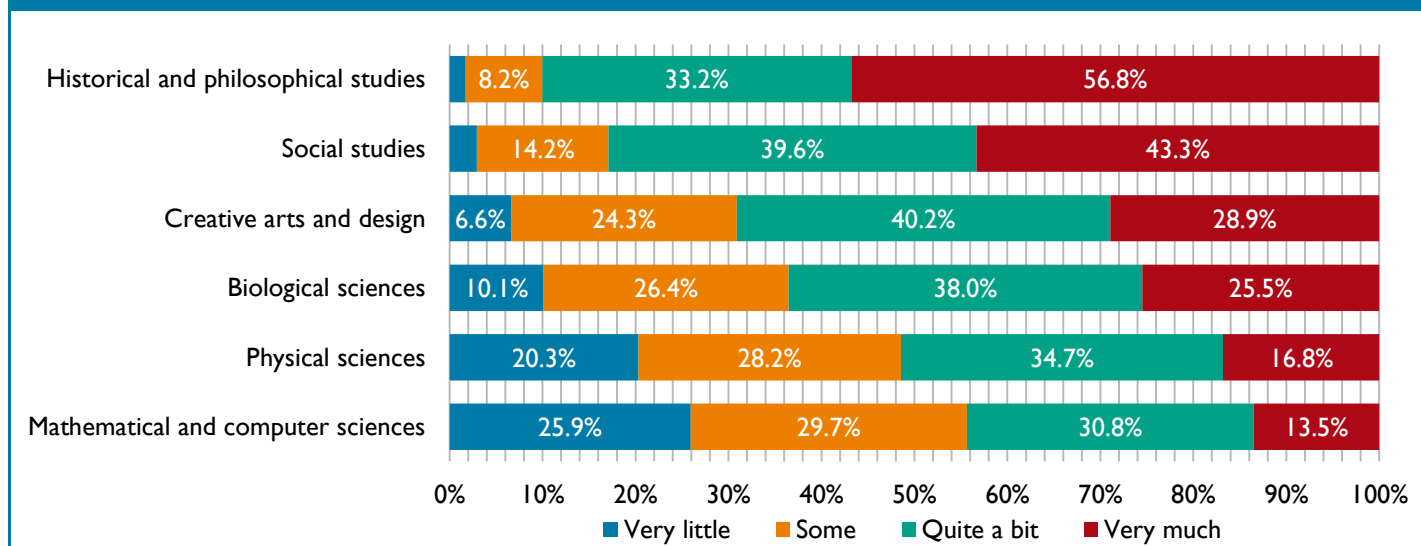
Chart 7, Skills development: "Analysing numerical information" for discipline clusters

Discipline	Very little	Some	Quite a bit	Very much
STEM	6.8%	22.3%	35.0%	35.9%
Health Sciences	10.8%	27.6%	35.8%	25.7%
Combined	27.1%	24.3%	24.3%	24.3%
Social Sciences	19.4%	26.6%	31.4%	22.6%
Arts and Humanities	51.4%	27.2%	13.4%	8.0%

N = 1087 – 6335

Chart 7 shows the same item but for the differences between discipline clusters. Again, the differences are seen between numerically based discipline others, with 51% of students in the Arts and Humanities reporting their development as very little, compared to only 7% of STEM students.

Chart 8, Course emphasis: "Evaluating or judging a point of view, decision, or information source" for selected disciplines

Discipline	Very little	Some	Quite a bit	Very much
Historical and philosophical studies		8.2%	33.2%	56.8%
Social studies		14.2%	39.6%	43.3%
Creative arts and design	6.6%	24.3%	40.2%	28.9%
Biological sciences	10.1%	26.4%	38.0%	25.5%
Physical sciences	20.3%	28.2%	34.7%	16.8%
Mathematical and computer sciences	25.9%	29.7%	30.8%	13.5%

N = 861–2248

Chart 8 shows the differences in how students in different disciplines perceived the course emphasis on the evaluation of points of view, decisions or information sources. 26% of students in Mathematical and Computer Sciences saw very little emphasis on such evaluation, compared to 2% of History and Philosophy students. This result reinforces the findings of UKES 2013.

Chart 9, Course emphasis: "Evaluating or judging a point of view, decision, or information source" for discipline clusters

Discipline	Very little	Some	Quite a bit	Very much
Arts and Humanities		16.9%	37.5%	41.4%
Social Sciences		17.9%	41.6%	36.9%
Combined	8.4%	20.3%	38.2%	33.1%
Health Sciences	6.0%	21.7%	39.3%	33.0%
STEM	18.0%	28.4%	35.0%	18.7%
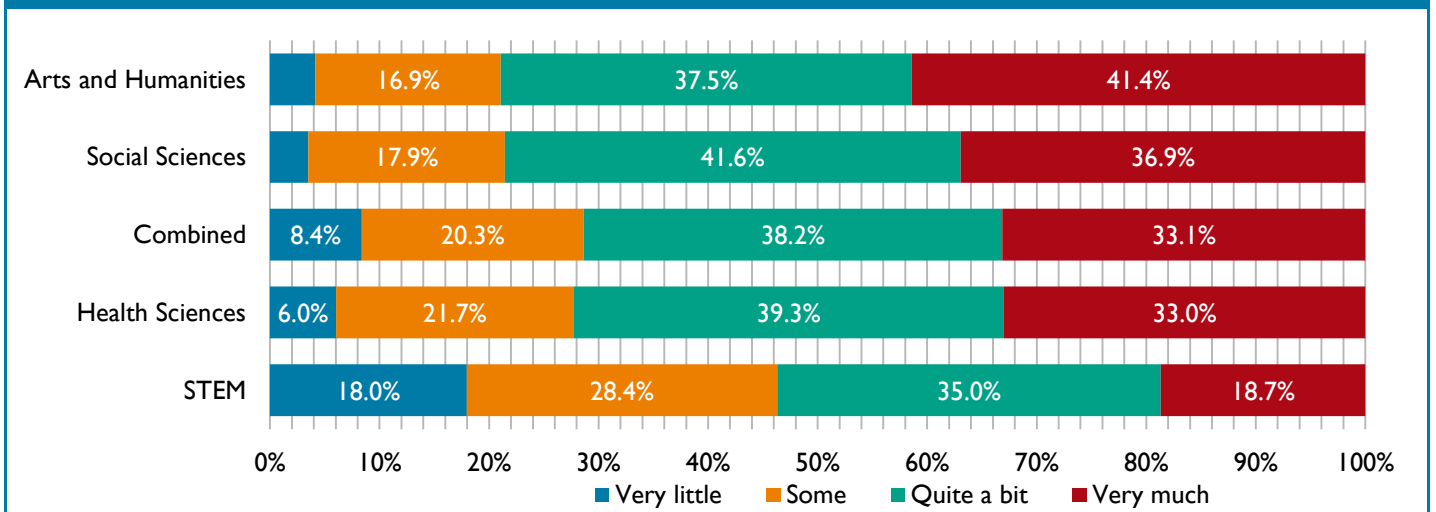
N = 1554–8530

Chart 9 shows the same item but for discipline cluster. As perceived by students, there was greatest emphasis on evaluation in Arts and Humanities, and the weakest in STEM disciplines.

Chart 10, Frequency: "Connecting your learning to societal problems or issues" for selected disciplines

Discipline	Never	Sometimes	Often	Very often
Social studies		24.7%	39.8%	30.3%
Medicine and Dentistry	6.3%	27.9%	41.9%	23.9%
Business and Administrative Studies	9.6%	34.7%	38.0%	17.8%
Historical and Philosophical Studies	17.0%	39.6%	29.5%	14.0%
Engineering	23.7%	45.1%	23.9%	7.3%
Mathematical and Computer Sciences	34.9%	38.0%	20.5%	6.6%
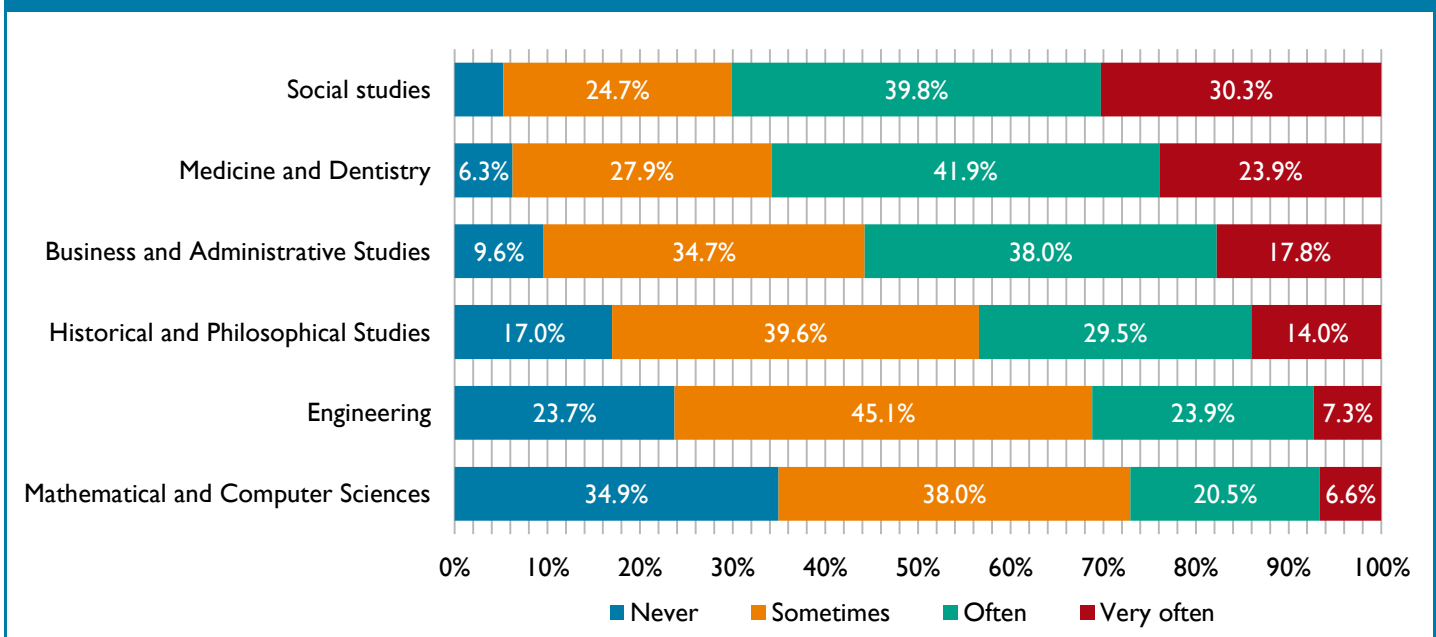
N = 262–1795

As may be expected, respondents from Social Studies reported a high frequency of connecting their learning to social issues. Students in Maths and Computer Sciences reported the lowest frequency, with 35% stating that they had never done so. The pronounced difference between students in Engineering and in Medicine and Dentistry is perhaps notable, given the relatively practical focus of both disciplines.

Chart 11, Frequency: "Connecting your learning to societal problems or issues" for discipline clusters

Cluster	Never	Sometimes	Often	Very often
Social sciences	7.7%	30.4%	38.2%	23.7%
Health sciences	7.9%	31.0%	37.9%	23.2%
Combined	16.5%	36.4%	30.2%	16.9%
Arts and humanities	14.5%	39.4%	29.7%	16.4%
STEM	26.6%	39.7%	24.4%	9.2%
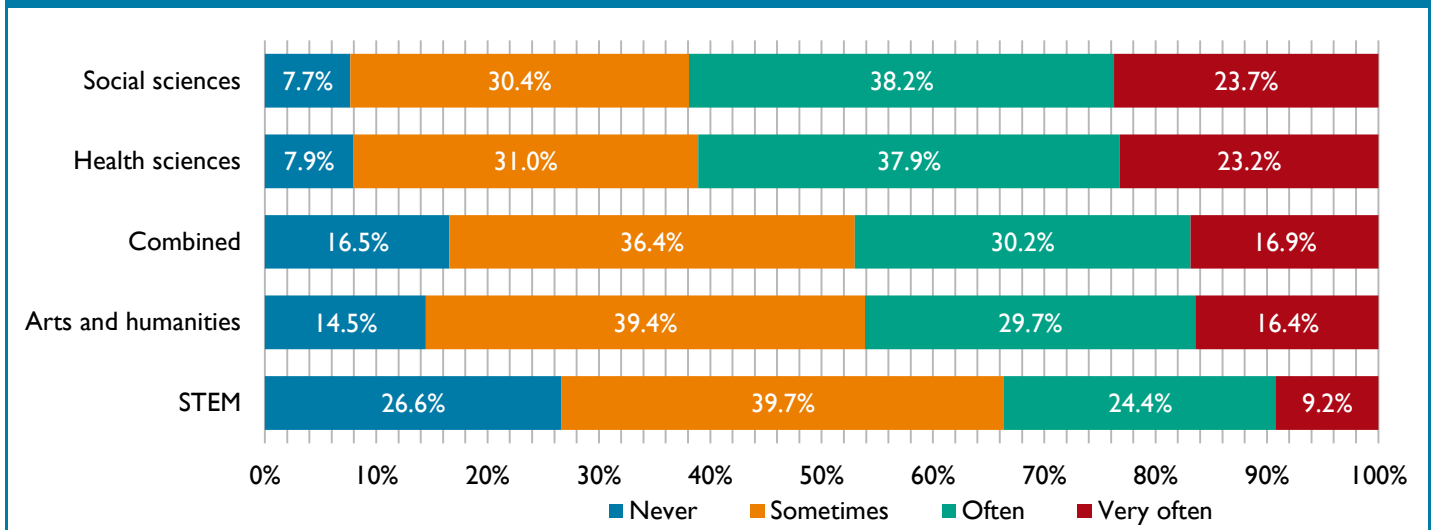
N = 925–5449

Students in the STEM cluster reported the lowest frequency of connecting their learning to social issues. Students in social and health sciences reported the highest frequency; the former is to be expected, the latter may be more notable.

Chart 12 below shows the average amount of hours that students in different disciplines estimated they spent preparing for taught sessions (restricted to full-time undergraduate students). These differences will be at least partly due to the differing amount of timetabled sessions in each discipline, which isn't currently collected by UKES. Error bars have been included to show the range in which the true value is likely to sit, with a confidence level of 95%.
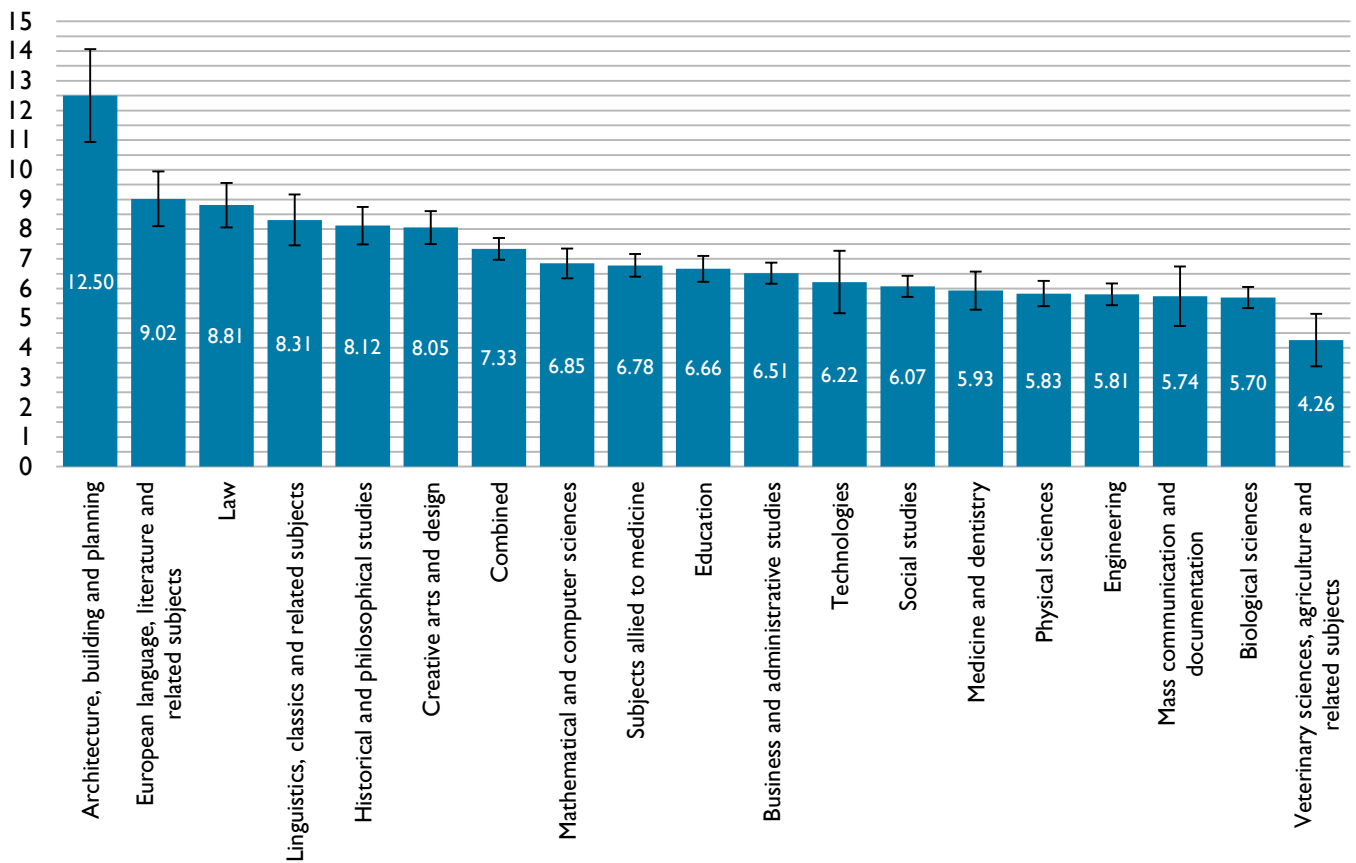
N = 103–1133

6.2 Gender

For characteristics other than discipline of study, there are far fewer important differences between student groups. For gender, there are only nine items that display substantive differences by gender, and the effect sizes for those items are only small. The largest two of those are shown below.

Chart 13, Time spent: "Participating in extra-curricular or co-curricular activities" for gender
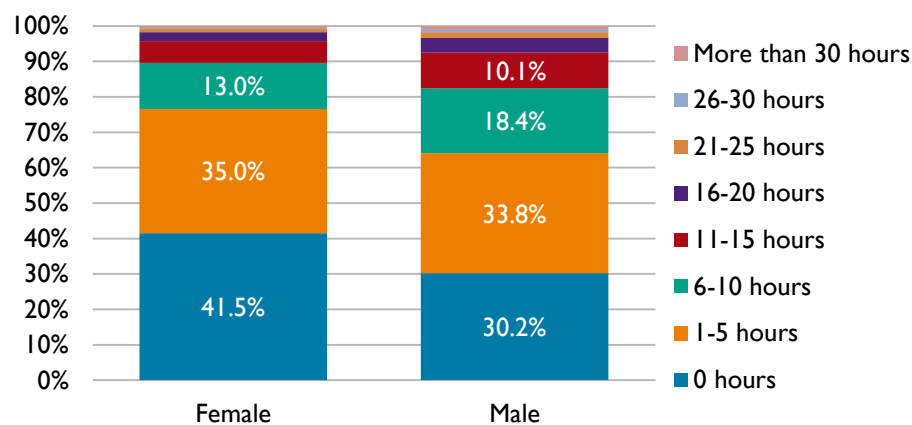
Chart 13 shows that 42% of female students reported engaging in no extra- or co-curricular activities, compared to only 30% of male students.

Chart 14 shows that female students reported a greater development of personal values; 28% of females reported the institution contributing very much, compared to 20% of males.[13]

N = 5854–8843

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[12] Results for respondents studying Eastern, Asiatic, African, American and Australasian languages have been excluded from this chart as they do not meet the publication threshold.

[13] Further analysis revealed a similar difference across virtually all subjects.

Chart 14, Skills development: "Developing or clarifying personal values or ethics" for gender

Gender	Very little	Some	Quite a bit	Very much
Male	18.2%	28.8%	33.2%	19.7%
Female	11.3%	24.8%	36.1%	27.8%

Legend: ■ Very little ■ Some ■ Quite a bit ■ Very much
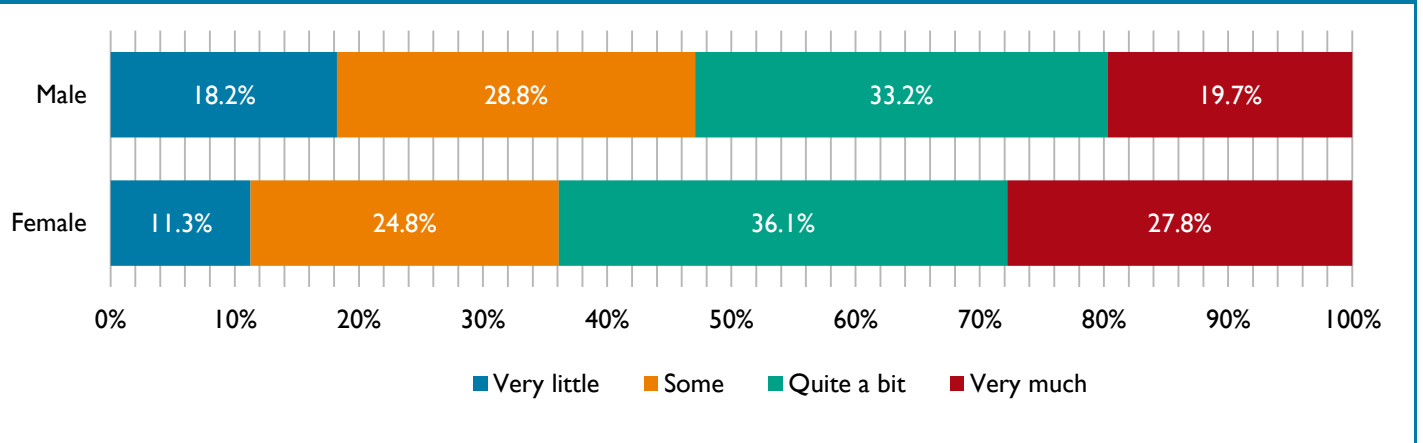
N = 6512–9669

6.3 Domicile

There are few important differences between UK, EU and non-EU students. Differences are only statistically significant for 40 of the 50 items. There are 40 items for which the differences are statistically significant, and six for which the differences are substantive (with small effect sizes), one of which is shown below.

Chart 15, Time spent: "Preparing for taught sessions" for domicile

Hours	UK	EU	non-EU
0 hours	8.6%	6.7%	7.2%
1-5 hours	52.9%	41.9%	37.7%
6-10 hours	19.1%	19.2%	20.1%
11-15 hours	9.7%	14.3%	12.4%
16-20 hours			

Legend: ■ 0 hours ■ 1-5 hours ■ 6-10 hours ■ 11-15 hours ■ 16-20 hours ■ 21-25 hours ■ 26-30 hours ■ More than 30 hours
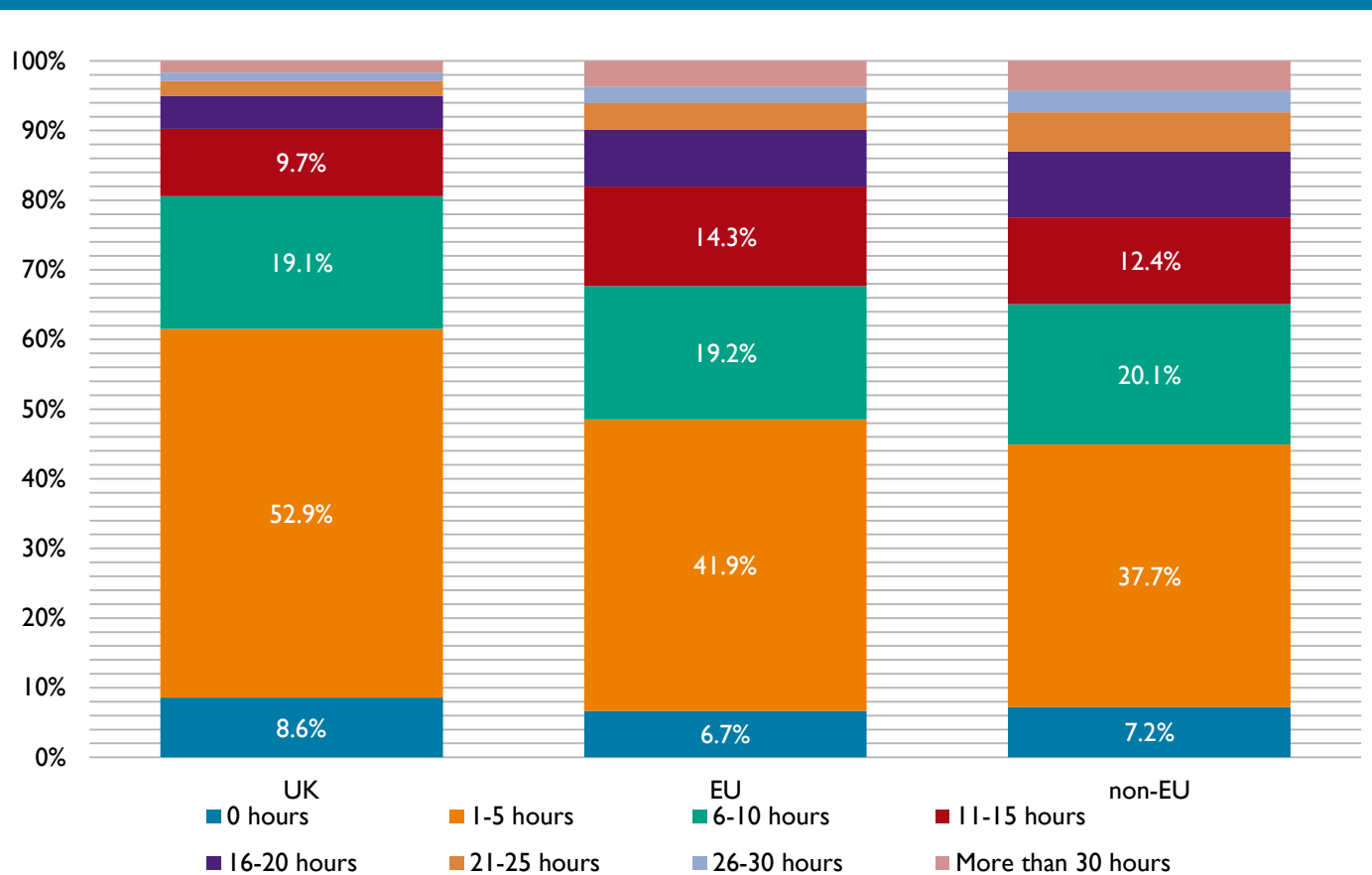
N = 1080–12553

Students from outside the EU reported spending the highest number of hours preparing for taught sessions; an average of 9.6 hours compared to 8.8 hours for EU students, and only 6.6 hours for UK students.[14] As reported in Section 9, these differences may be partly due to differences in interpretations of the question wording.

6.4 Mode

The differences between full-time and part-time students were significant for 38 of the 50 items. The differences for 12 of the items had a small effect size, three of the items showed a medium effect size, and one item, on working for pay off campus, had a large effect size (shown in Chart 16).

Chart 16, Time spent: "Working for pay off campus" for mode

Legend:
- 0 hours
- 1-5 hours
- 6-10 hours
- 11-15 hours
- 16-20 hours
- 21-25 hours
- 26-30 hours
- More than 30 hours
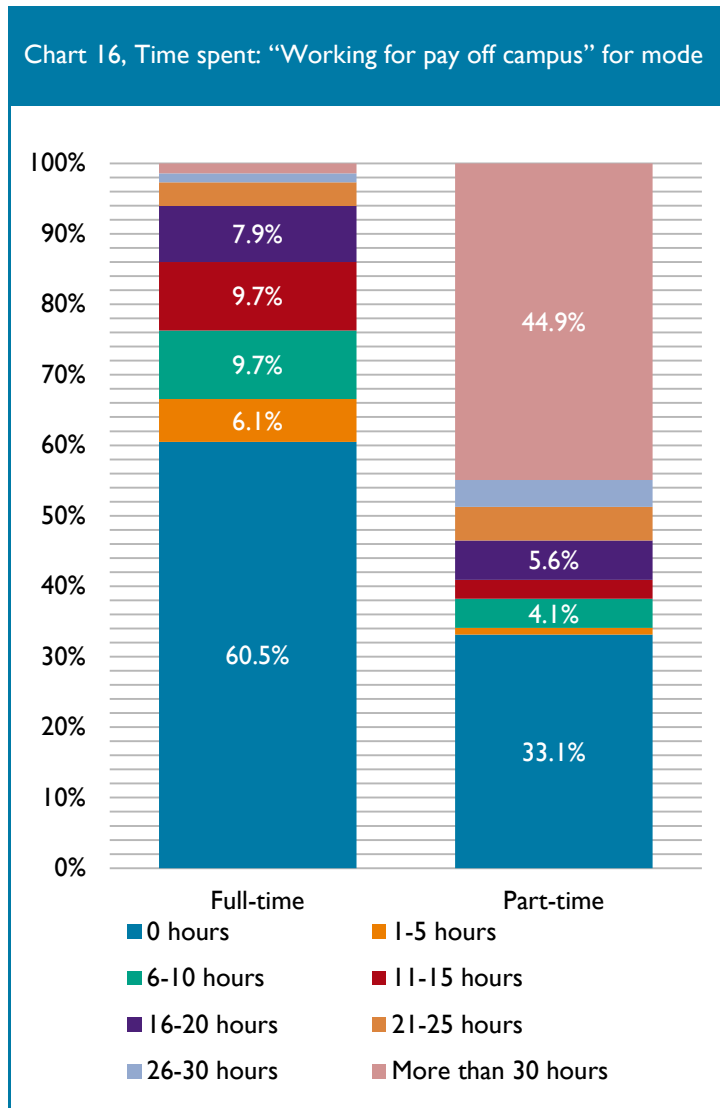
N = 674–14277

Unsurprisingly, part-time students reported a much greater amount of time spent working for pay off campus. Full-time students reported working for pay an average of 5.0 hours per week off campus, compared to 18.1 hours for part-time students. However, there is no similarly large difference between full-time and part-time students in terms of the number of hours they reported spending preparing for taught sessions. There is a difference here between undergraduates and taught postgraduates. The data for these two different groups are shown in Chart 17. At undergraduate level, the difference in the preparation time reported by full-time and part-time students is small; the averages differ by less than half an hour. For taught postgraduate students, the difference is much larger; the averages differ by nearly four hours. Please note that there was a relatively low number of part-time respondents to UKES, and these findings merely suggest interesting areas for further investigation.[15] The findings of the cognitive testing reported in section 9 are also important to bear in mind; students' interpretations of 'preparing for class' are quite narrow, and only encompass a subset of study activities.

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[14] Averages for the number of hours spent on activities have been created by taking the mid-point of each category, and 32 for the "More than 30 hours" category.

[15] For respondents to this question, there are 323 part-time undergraduate respondents from 17 institutions and 293 part-time postgraduate respondents from nine institutions.

Chart 17, Time spent: "Preparing for taught sessions" for mode, by level
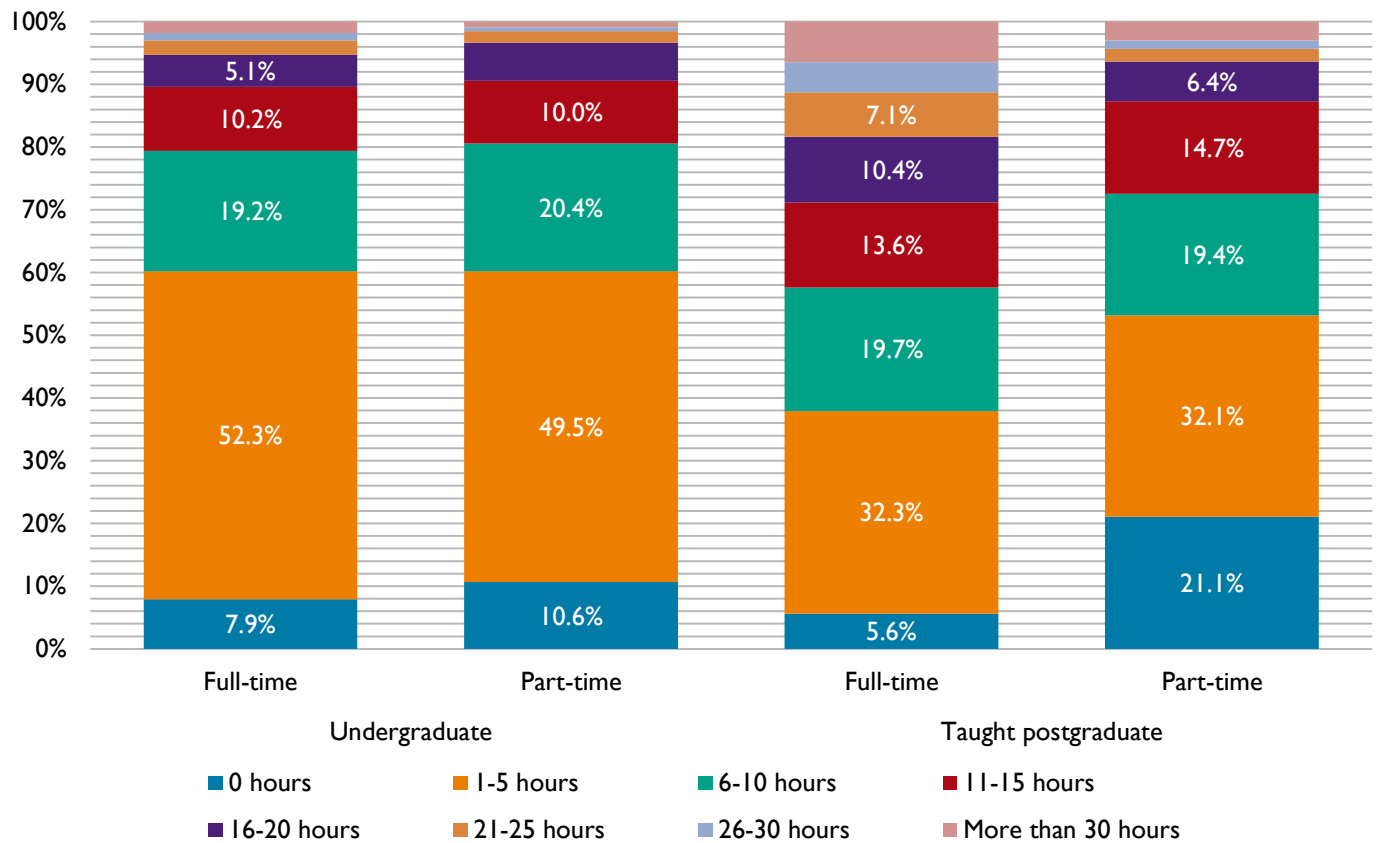
N = 299–11991

Of the UKES respondents recorded as studying part-time, 48% are also recorded as learning at a distance. In order to investigate the differences between full-time and part-time students not studying at a distance, the analysis was re-run without the distance learners. When that was done, the differences between full-time and part-time students were significant for only 31 items. There were small effect sizes for seven items, and a large effect size for the item on working for pay off campus, as above.[16]

6.5 Level

There are 34 items for which the differences between undergraduate and taught postgraduate students are significant. Of those, six items show substantive differences, with small effect sizes. The largest of those is for 'Working for pay off campus', which is due to the particularly large proportion of part-time students among the taught postgraduate respondents (28% as opposed to 4% for undergraduate respondents). There is also a substantive but small effect size for 'Preparing for taught sessions', as shown below, again at least partly due to the higher proportion of part-time students.

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[16] Unfortunately we are not able to report the data for distance learners, as the data do not meet the publication threshold.

Chart 18, Time spent: "Preparing for taught sessions" for level

Legend:
- 0 hours
- 1-5 hours
- 6-10 hours
- 11-15 hours
- 16-20 hours
- 21-25 hours
- 26-30 hours
- More than 30 hours

N = 911–12354
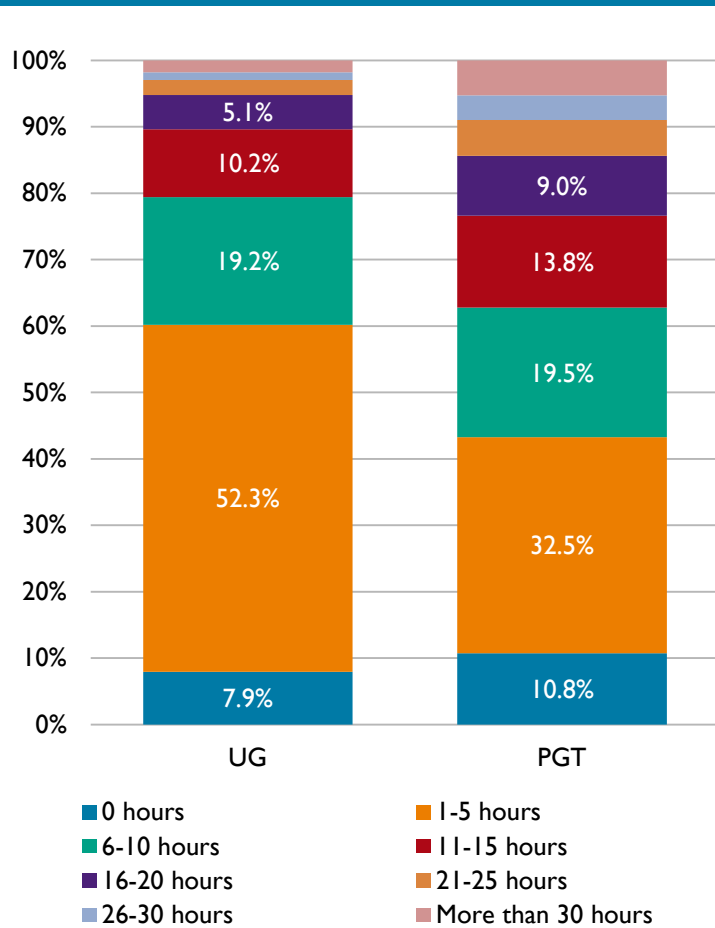
37% of taught postgraduate students reported spending more than 10 hours preparing for taught sessions, compared to 21% of undergraduate students. The averages differ by 3.1 hours. The effect on these results of modes of study can be seen above in chart 18.

6.6 Age group

All but one of the 50 items show significant differences between age groups. There are 27 items with small effect sizes, three with medium effect sizes and one with a large effect size. Some of these differences are affected by the large proportion of older students recorded as being distance learners (nearly half of the students aged between 46 and 55 are recorded as learning at a distance). The item with a large effect size is 'Providing care for dependents' and the results are shown below in chart 19. Only 1% of students aged 18 to 25 reported spending more than 30 hours caring for dependents, compared to 45% of students aged 36 to 45.[17]

Chart 19, Time spent: "Providing care for dependents" for age groups

Legend:
- 0 hours
- 1-5 hours
- 6-10 hours
- 11-15 hours
- 16-20 hours
- 21-25 hours
- 26-30 hours
- More than 30 hours
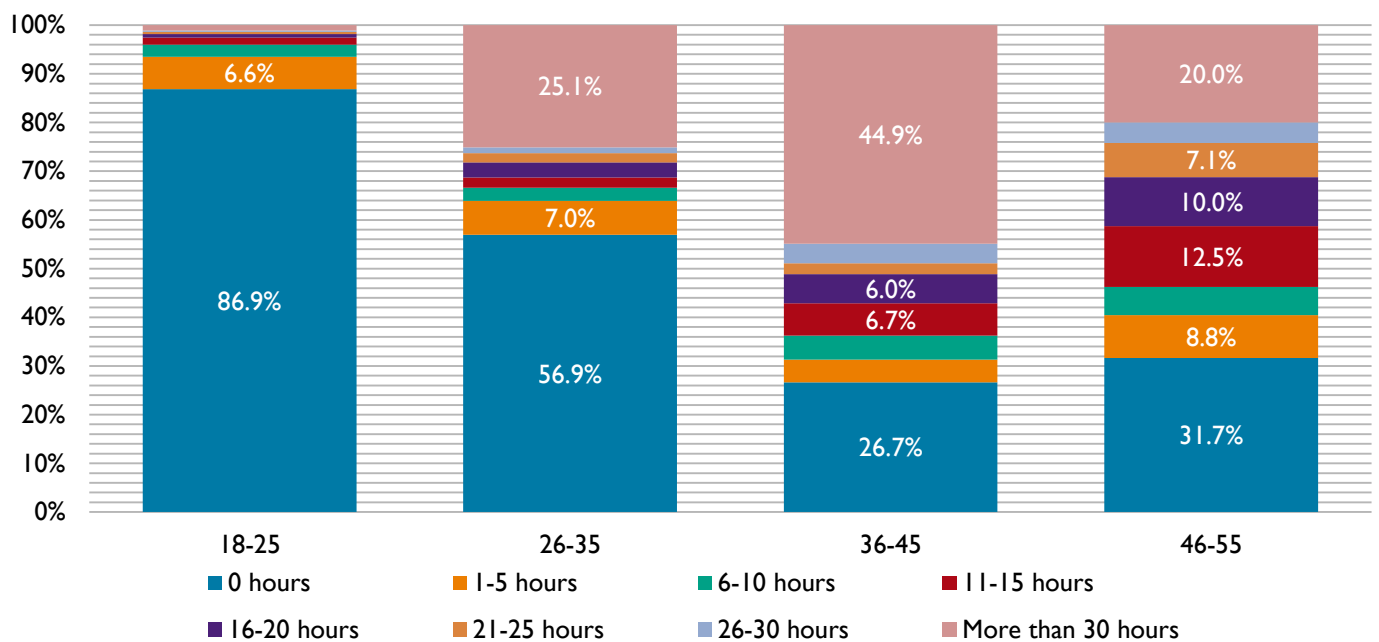
N = 240–9475

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[17] Respondents younger than 18 and older than 55 have been excluded as those age groups do not meet the publication threshold described above.

6.7 Year of study

The analysis for this section has been restricted to full-time undergraduate students, in order to gain a more accurate sense of how engagement changes as students progress through their course. There are statistically significant differences between students in different years of study for 35 of the 50 items, with 11 of those items showing substantive, small effect sizes. Of particular interest are the items relating to the development of skills and abilities. As self-reported measures of educational outcomes, one would expect to see students reporting greater levels of development as they progress through their course.

Of the 12 items that ask about skills development, there are substantive differences for five items focusing on writing, critical thinking, speaking, numerical analysis and work-related skills. For the areas that are less likely to receive direct attention in most courses, there are statistically significant but not substantive differences: becoming an independent learner; being creative; working with others; addressing real-world problems; and being an informed citizen. For two items that are particularly personal in focus, the differences are not even statistically significant; developing personal values and understanding people of other backgrounds (ethnic, religious, etc). Chart 20 shows the differences for the item on developing the ability to think critically and analytically, which shows substantive differences. The proportion of students who reported that their experience has contributed very much to their ability to think critically rises from 38% of first years to 53% of fourth years.

Chart 20, Skills development: "Thinking critically and analytically" for year of study (restricted to full-time undergraduates)

Year	Very little	Some	Quite a bit	Very much
First		16.9%	41.7%	38.2%
Second		13.7%	40.1%	43.5%
Third		11.9%	34.3%	51.9%
Fourth		7.2%	37.8%	52.6%
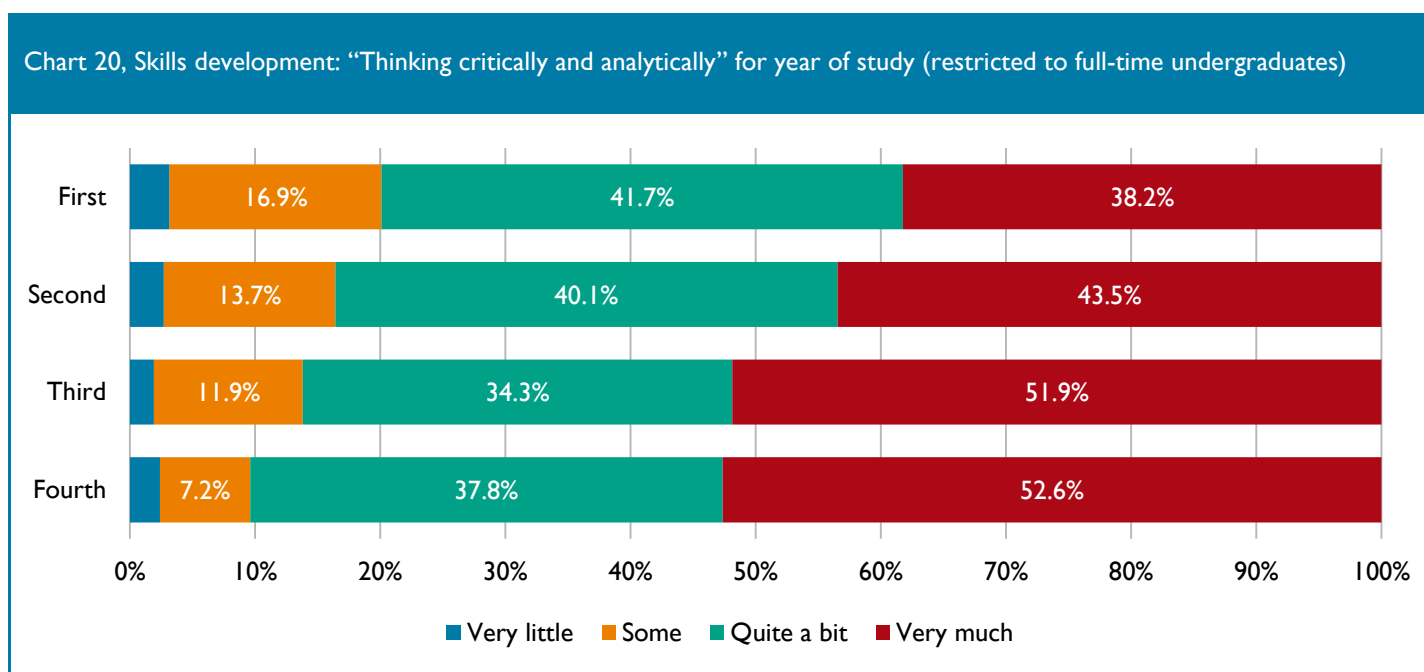
N = 625–4993

Chart 21 shows the differences between years (again, for full-time undergraduates) using the mean scale scores for the Skills Development scale. Error bars have been included, which show where the 'true' figure lies, with a confidence of 95%. The chart clearly shows a progression from the first to the third year, and the lack of a significant difference between the third and fourth years (note that the vertical axis only covers a portion of the possible range, so differences are exaggerated).

Chart 21, Mean value for the Skills Development scale for year of study (restricted to full-time undergraduate students)


	First	Second	Third	Fourth
Mean	2.77	2.85	2.93	2.94
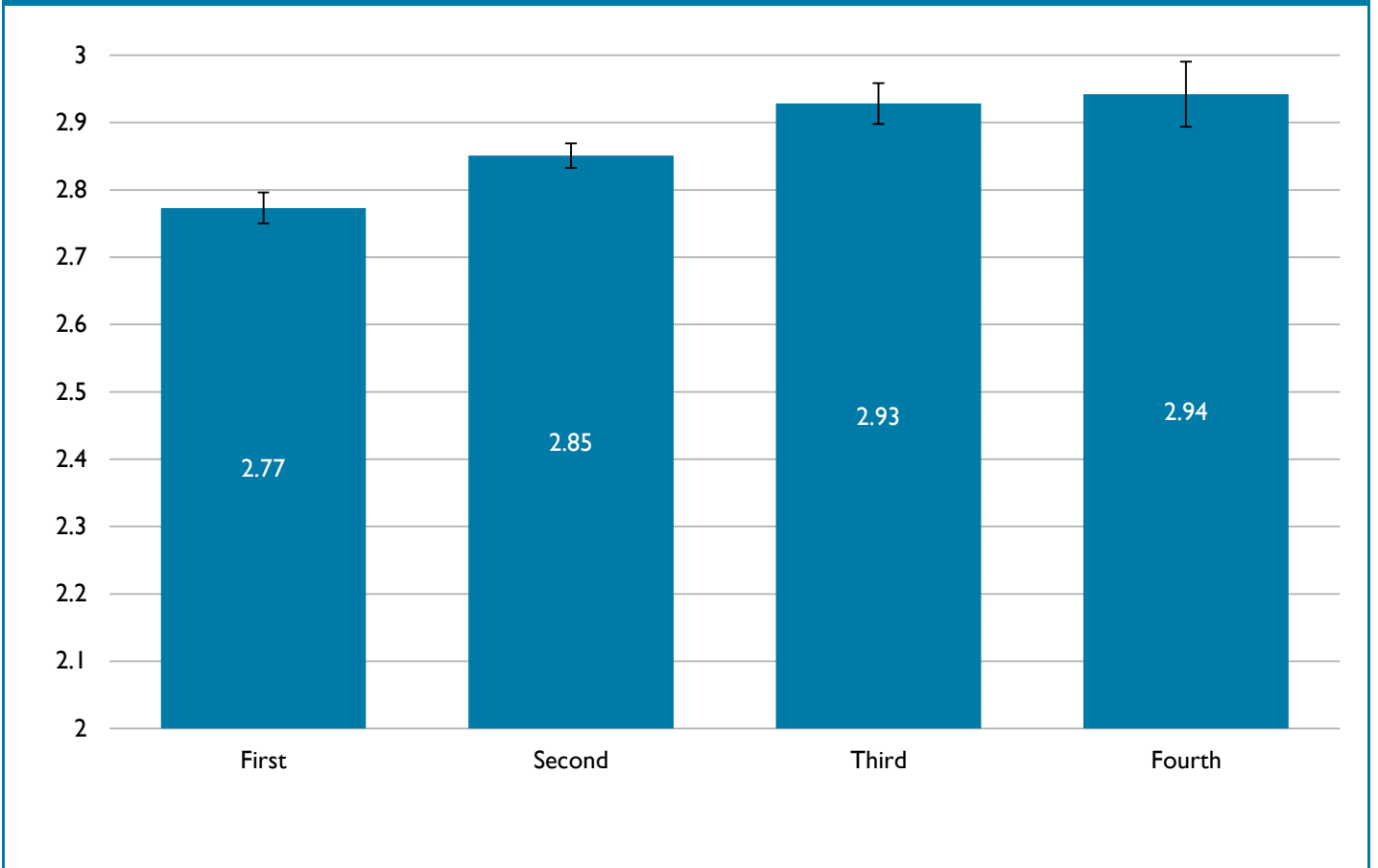
N = 601–4549

7. Breakdowns by institutional characteristics

7.1 Institution size

The 32 participating institutions were grouped into four categories according to the number of their undergraduate students, as described in the Higher Education Statistics Agency (HESA) statistics for 2012/13 (see section 3.2 for more information). The differences between these groups were significant for all but two of the 50 items and had small effect sizes for 16, including all five of the items from the Collaborative Learning scale. The differences between the scale means for Collaborative Learning are shown below (please see section 1.1 for important limitations on the use of scale means).[18] Error bars have been included on the charts, which indicate the range in which the 'true' value falls, with a confidence of 95%.

Chart 22, Mean value for the Collaborative Learning scale for institution size
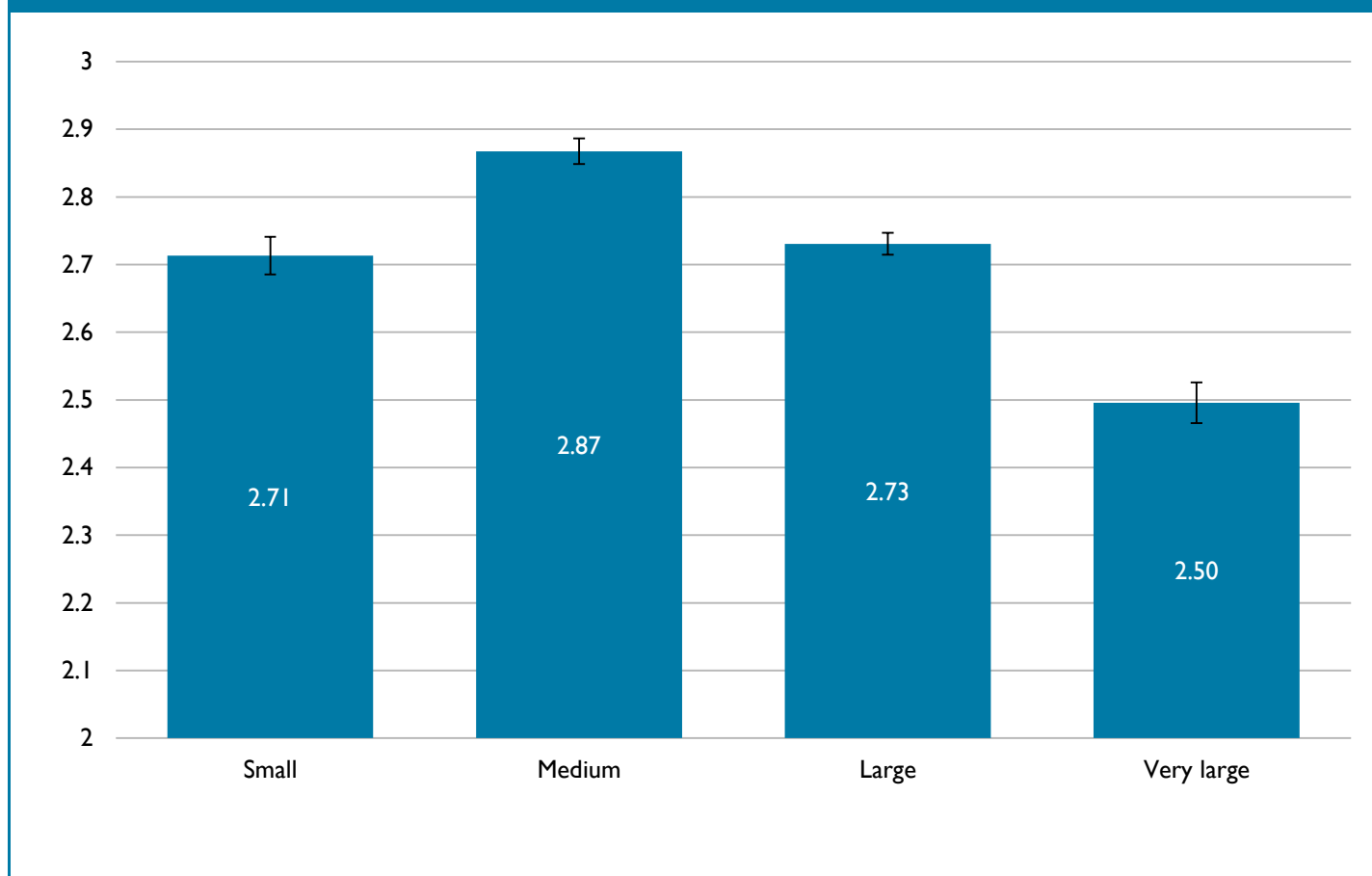
N = 1999–6034

Chart 22 shows that respondents at medium-sized institutions reported the highest frequency of collaboration between students. Those at very large institutions reported the lowest frequency. Note the overlapping error bars for small and large institutions, indicating that the difference is not statistically significant.

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[18] Effect sizes for the differences between scale means have not been calculated using Cramer's V, which is only appropriate for relationships between categorical variables. One-way between groups ANOVA has been used where there are more than two categories (e.g. institution size) and paired samples T-tests where there are only two categories (e.g. institution type). In both cases, effect sizes have been calculated using Eta squared.

7.2 Institution type

Virtually all (47 out of 50) of the individual items show statistically significant differences between pre-1992 and post-1992 institutions, with a very high number (29) of those having small effect sizes. The differences for the two items with the largest effect sizes are shown below.[19]

Chart 23, Course emphasis: "Your active participation in creating knowledge" for institution type

	Very little	Some	Quite a bit	Very much
Post-92	10.0%	27.0%	39.1%	23.9%
Pre-92	23.4%	33.5%	29.3%	13.8%
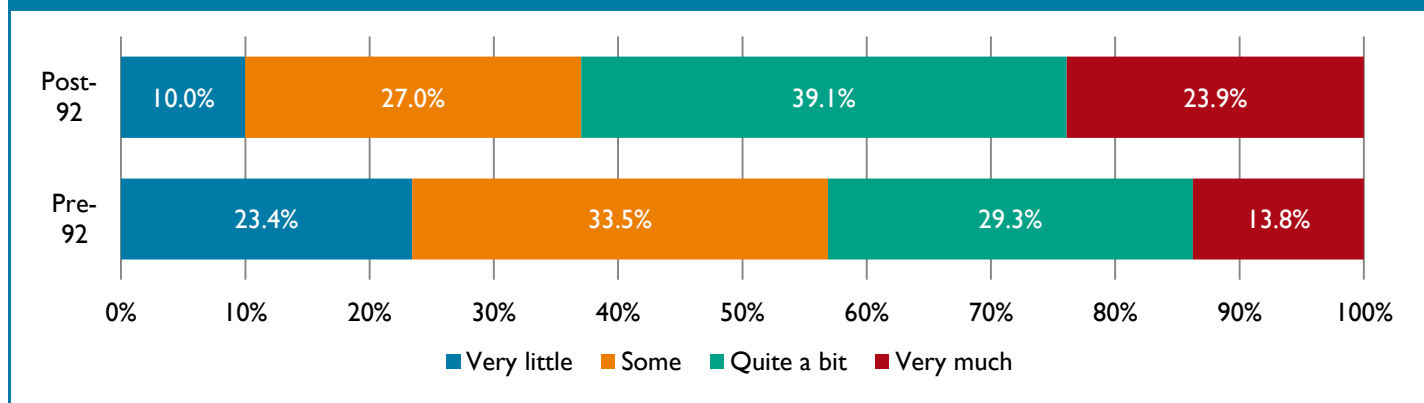
N = 3695–8269

Students at post-1992 institutions reported a greater emphasis in coursework on their active participation in creating knowledge. 10% felt there was very little emphasis, compared to 23% of students at older institutions.

Chart 25, Frequency: "Explained course material to one or more students" for institution type

	Never	Sometimes	Often	Very often
Post-92	4.0%	32.5%	39.5%	24.0%
Pre-92	14.3%	36.8%	32.5%	16.4%
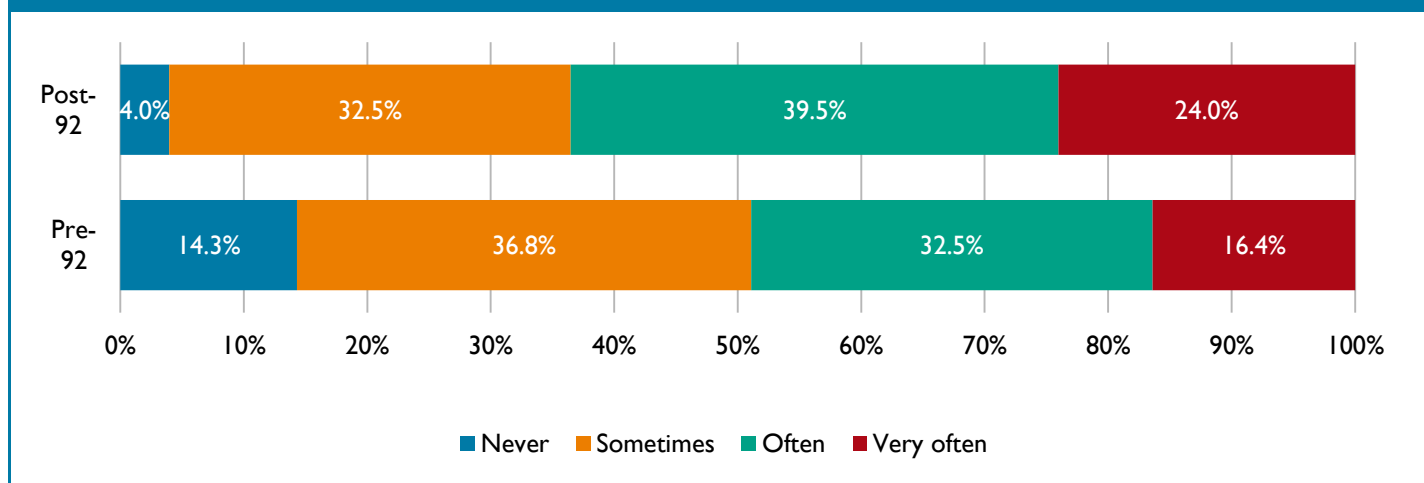
N = 10077–14445

Chart 24 shows that students at newer institutions reported explaining course material to other students more frequently than those at older institutions; 14% reported never doing so at pre-1992 institutions, compared to only 4% at post-1992 institutions.

7.3 Mission group

The differences between the mission groups are statistically significant for all items, and a large number (39) show small effect sizes. One of the largest differences is for the item on the frequency of using feedback to make changes to work.[20]

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[19] The results for small and specialist institutions are not shown, as they do not meet the threshold described above.

[20] The results for Guild HE institutions have not been shown as they do not meet the publication threshold described above.

Chart 25, Frequency: "Made significant changes to your work based on feedback" for mission group

	Never	Sometimes	Often	Very often
Million plus	10.7%	35.0%	37.1%	17.1%
University Alliance	11.3%	36.4%	37.4%	14.9%
Russell Group	15.7%	43.6%	31.0%	9.7%
Unaffiliated	17.6%	43.3%	29.6%	9.5%
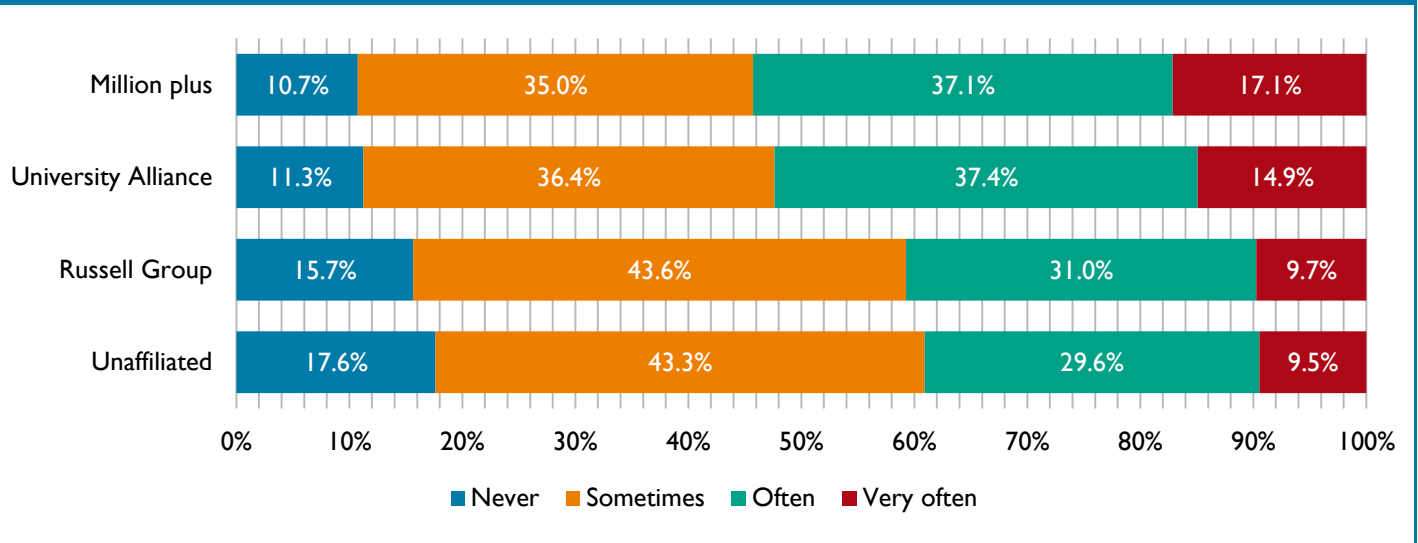
N = 4345–7111

Students at unaffiliated institutions report the lowest frequency of using feedback to make changes to work, with Million Plus students reporting the highest frequency. Chart 26 shows the mean scale scores for the Collaborative Learning scale, focusing on students' interaction with each other. There is a small effect size for this difference.[21]

Chart 26, Mean value for the Collaborative Learning scale for mission group

Million plus	Russell Group	University Alliance	Unaffiliated
2.78	2.64	2.79	2.51
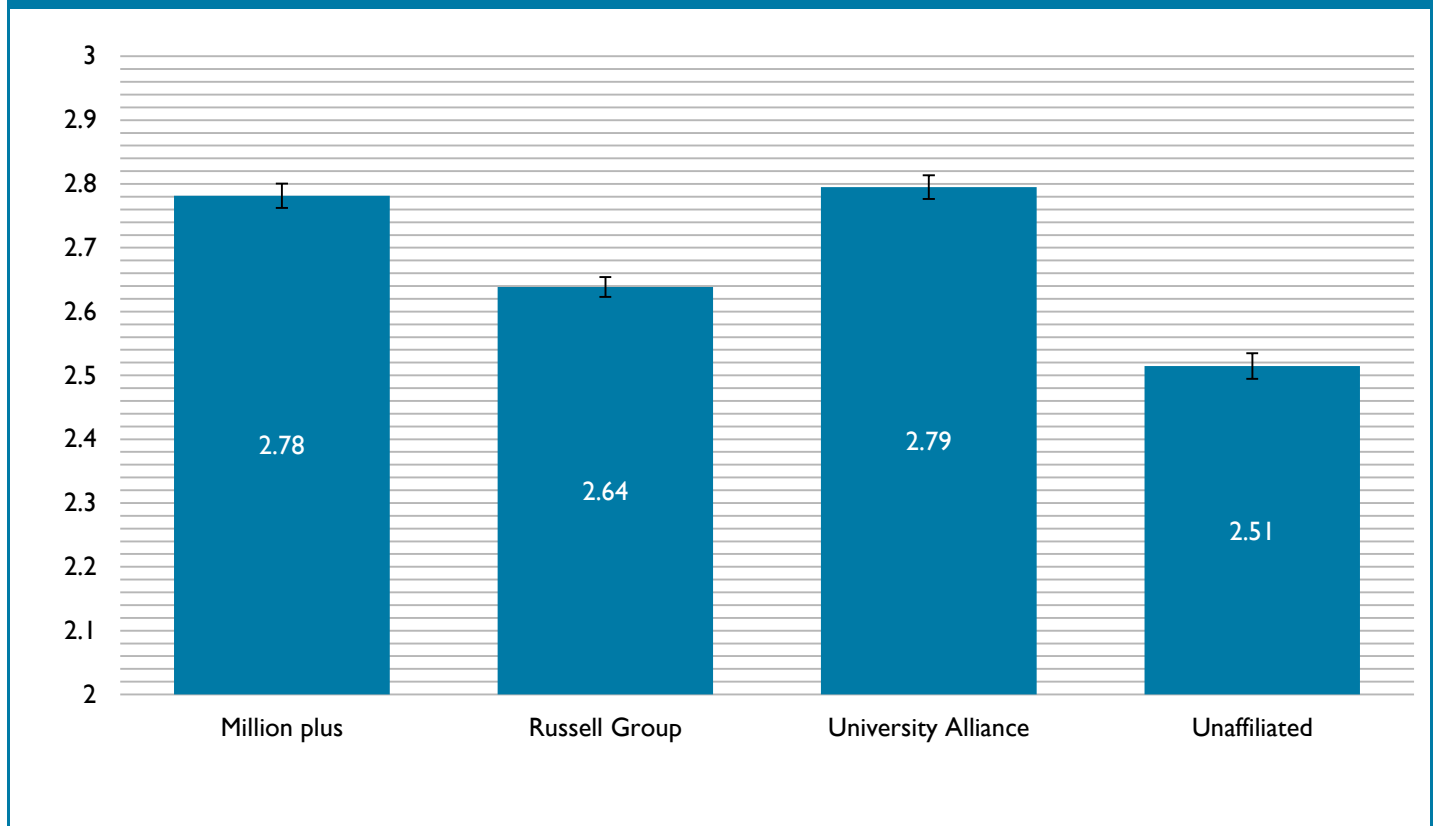
N = 2422–6013

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[21] As above, the results for Guild HE institutions have not been shown.

Students at Million Plus and University Alliance institutions report the greatest frequency of interaction with other students; their error bars overlap so the difference between them is not statistically significant. Please note that the vertical axis only contains the range from 2 to 3.

8. International comparisons

One of the benefits of UKES is the ability to compare results with other surveys from around the world. 2014 results are available for both the National Survey of Student Engagement (NSSE) from North America and the Irish Survey of Student Engagement (ISSE).[22] The full data, for the questions in common with UKES, are available in the Data Annex. The charts below show some of the more substantive differences.[23] Please note that these differences are likely to be due to the very different cultures that operate in different national contexts, and should be interpreted with caution. It is also important to note that while UKES and NSSE are voluntary surveys, ISSE is a compulsory national survey and so participating institutions are not self-selecting.

One important difference is between the hours that students have reported spending on preparing for taught sessions. Charts 27 and 28 show the differences separately for first-year students and final-year students.[24]

Chart 27, Time spent: "Preparing for taught sessions" for first-year students in the UK, North America and Ireland

Legend: 0 hours, 1-5 hours, 6-10 hours, 11-15 hours, 16-20 hours, 21-25 hours, 26-30 hours, More than 30 hours

UK: 7.0%, 51.5%, 19.7%, 11.1%, 5.6%
N America: 13.4%, 23.1%, 21.4%, 17.7%, 11.4%, 6.4%, 6.0%
Ireland: 39.5%, 26.3%, 13.7%, 8.9%, 4.3%
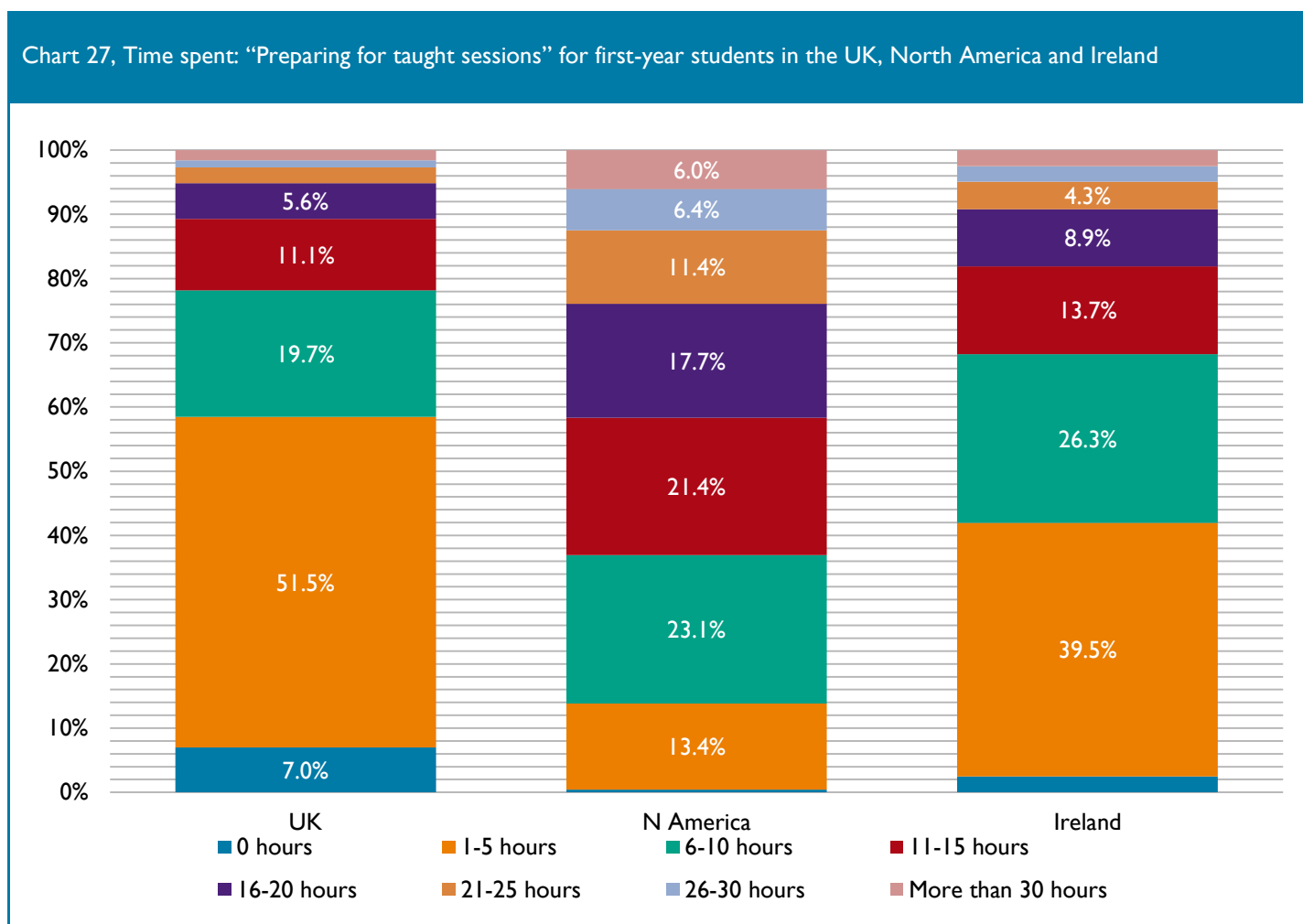
N = 4183–117879

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[22] Full NSSE results can be found at http://nsse.iub.edu/html/summary_tables.cfm. ISSE results are at http://studentsurvey.ie/wordpress/survey-results/.

[23] Due to the nature of the available data, significant levels and effect sizes cannot be calculated.

[24] Data on whether UKES respondents are in their final year is not available. Instead, results for full-time undergraduates in their fourth year of study have been used. The results should therefore only be taken as indicative of UK final-year students. In addition, the mix of disciplines differs for fourth-year students, with a greater proportion of students in STEM subjects, affecting the results.

Chart 28, Time spent: "Preparing for taught sessions" for final year students in the UK, North America and Ireland
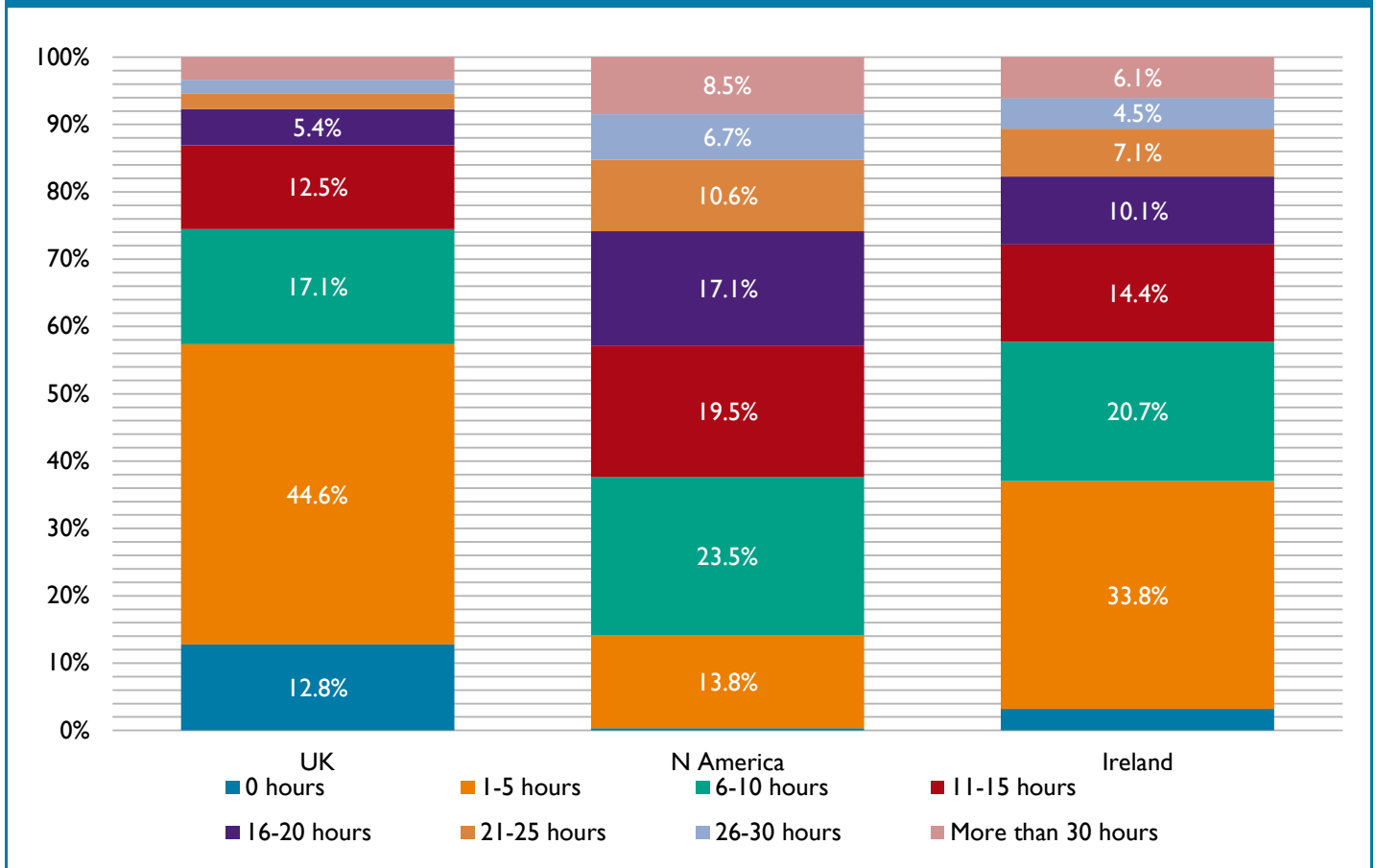
N = 650–166074

Students in the UK in both their first and final years of study reported spending considerably fewer hours preparing for class than their counterparts in North America and Ireland. Of UK first year students, 59% reported spending between 0 and 5 hours per week preparing for taught sessions, compared to 42% of students in Ireland and only 14% of students in North America. Only 11% of first year students in the UK reported spending more than 15 hours per week preparing for taught sessions, compared with 18% of students in Ireland and 42% of students in North America.

It is important to note that these are self-reported estimates, and should only be taken as indicative. In addition, the cognitive testing found that UK students have a particularly narrow conception of what is to be counted as preparing for taught sessions (see section 9), which is likely to partially explain the difference. Other factors (such as the volume of contact hours and different levels of in-class testing) will also be important.

There are also substantial differences between the international comparators for five items on the frequency with which students interact with teaching staff. Charts 29 and 30 show two of these items.

Chart 31, Frequency: "Talked about career plans with teaching staff or advisors" for first-year students in the UK, North America and Ireland

Country	Never	Sometimes	Often	Very often
Ireland	69.0%	23.6%	5.5%	
UK	44.7%	37.9%	12.3%	5.1%
North America	21.0%	46.0%	21.9%	11.1%

Legend: ■ Never ■ Sometimes ■ Often ■ Very often
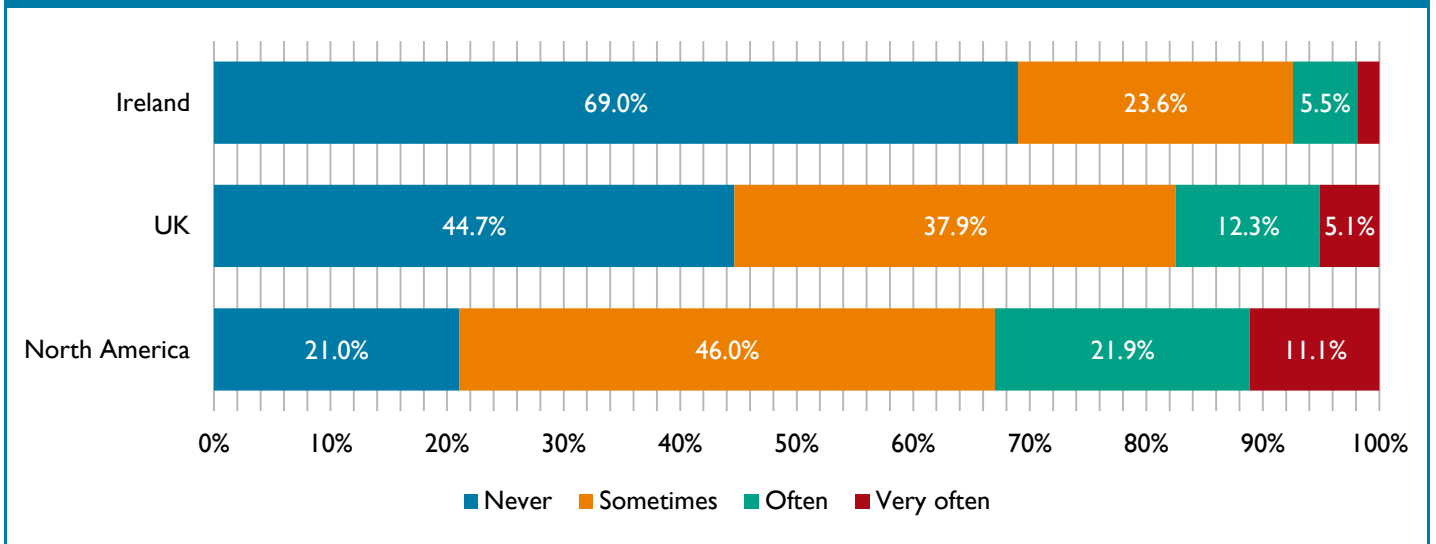
N = 7830–139451

Chart 31 shows a pattern that is common to a number of the items focused on interaction with staff; students in the UK sit between those in Ireland and North America in terms of the frequency they reported. In this case, UK students reported talking to staff or advisors about their career plans more often than those in Ireland, but less often than those in North America. The size of the differences suggests that the item addresses structural differences in how careers advice and guidance are provided in different countries.

Chart 32, Frequency: "Discussed your academic performance and/or feedback with teaching staff", for first year students in the UK, North America and Ireland

Country	Never	Sometimes	Often	Very often
Ireland	41.1%	39.8%	14.5%	4.7%
UK	16.6%	47.5%	26.0%	9.9%
North America	23.6%	46.8%	20.5%	9.1%

Legend: ■ Never ■ Sometimes ■ Often ■ Very often
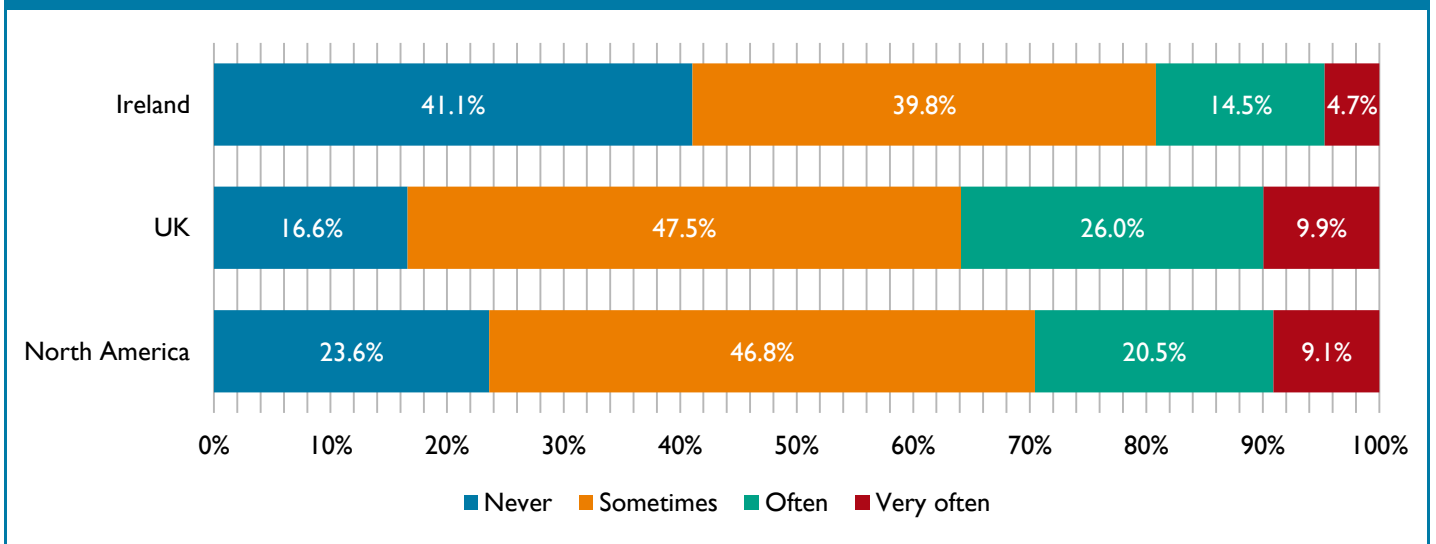
N = 7844–138064

The results for this item differ, in that UK students reported discussing their academic performance with staff more frequently than those either from North America or Ireland. It should be noted that the comparison with Ireland is only approximate; the item wording in ISSE is narrower, asking about the frequency with which students have talked about grades or assignments with staff.

9. Summary of the qualitative testing

(Camille B. Kandiko Howson and Frederico Matos)

This section, describing the qualitative investigation of the survey items using the process of cognitive interviewing, was written by **Camille B. Kandiko Howson** *and* **Frederico Matos** *(both of King's College London). The full research report is available at:* http://www.heacademy.ac.uk/consultancy-services/surveys/ukes/ukes-final-reports

9.1 Key findings

- Students were positive about the survey and thought it comprehensively covered very important elements of their student experience.

- Overall, students were clear about what most of the questions were asking.

- There were, however, differences in students' understanding of questions and responses by both subject of study and institutional type.

- Students thought the survey could be a good tool for universities to use to help them understand and learn about students' academic experiences.

- Students appreciated the opportunity that this survey provided for them to think about their own learning experiences in a way they often had not before, particularly through the items addressing the amount of time spent on different activities.

- Students found the items on engagement with research and formulating and exploring questions to be the most problematic in the survey.

9.2 Introduction

This research project combined a range of elements to explore undergraduate students' understanding of the survey items used in this project: analysis of the literature; related international efforts to modify student experience and engagement survey questions; and new primary data collection through individual interviews,. The research was designed to supplement the analysis of the data yielded by the pilot, to evaluate the validity and reliability of the piloted 50 items, thoroughly test the five new groups of items added for 2014 (consisting of 33 items) and make overall recommendations for improvements.

Key questions that informed the review

1. How do students understand the individual questions?
2. What do students mean by their response to survey questions?
3. How does students' disciplinary background influence their response to the questions?
4. How do students from different year groups respond to the questions?
5. Do students from different institutional types and modes of study respond to the survey differently?
6. Do students interpret the questions as cohesive scales?
7. Do students think these are important questions?
8. Do students have suggestions for changes or additional questions?

Participants

Sites included a variety of institutional types, representing a diverse range of students. A total of 42 students were interviewed from 11 institutions: Brunel University; King's College London (KCL); Sheffield Hallam University; University of Bath; University of Exeter; University of Glasgow; University of Lincoln; University of Liverpool; University of Sheffield; University of Winchester; and the University of London (International Programmes). Three of these institutions took part in the survey pilot. Interviews were limited to undergraduate students, and findings should only be extrapolated with caution to taught postgraduates.

A mix of students from first, second, third, fourth and fifth years were interviewed. About a quarter were first-year students, half of the students had just completed their second year of study and the rest were a mix of final-year students (comprising third, fourth and fifth year students due to the nature of the Scottish higher education system and students on longer degree courses such as Medicine). The students were drawn from 28 subjects: Accounting and Finance; Applied Nursing and Social Work; Biological Sciences/Biochemistry; Business; Business and IT; Business and Management; Business Management with Sports; Management; Childhood Studies; Choreography and Dance with History; English and French Law; English and Drama; English Literature; European Studies and Spanish; Forensic Science; History; Law; Liberal Arts; Mathematics; Medicine; Microbiology; Pharmacology; Politics and Sociology; Primary Education; Public Policy; Social Policy; Social Work; and Sociology and Law.

There was 60/40 female/male gender representation (similar to survey respondents). Three-quarters of participants were domiciled in the UK, with equal numbers of European Union (EU) and international (non-European Union) students. One in eight students lived in halls, another eighth lived in their own home and the rest lived in rental accommodation. Half of the sample was in the 19 to 21 age range; another quarter was in the 22 to 24 age range; and the rest ranged from 25-42. The sample included a number of mature students and five students studying via distance.

9.3 Methodology

The project is built on the findings from the 2013 pilot of the UK Engagement Survey (Kandiko and Matos 2013). It included a review of the literature on student engagement, with a focus on student engagement surveys and the development of the National Survey of Student Engagement (NSSE) (Kuh 2001). Attention was paid to the redesign of the NSSE 2.0 survey (McCormick *et al.* 2013a). There was an analysis of international examples of adapting US-based NSSE items, particularly the efforts in Canada to amend NSSE items, Australia (through the Australian Survey of Student Engagement, AUSSE) (Coates 2010), South Africa (through South African Survey of Student Engagement, SASSE) and recent engagement pilot surveys in Ireland and China (see Coates and McCormick 2014). Changes to wording (or not) and any accompanying analysis of validity were examined. Overall, there is a dearth of published validity and reliability testing of student experience surveys.

Stage 1

The 'think-aloud' method (Willis *et al.* 1999) was used, which directs students to 'think aloud' as they respond to the question, with little interference from the interviewer. This was followed by using verbal prompts, such as "when you answered 'sometimes', how often does that mean?" The research protocol included scripted probes, although spontaneous probes were used as appropriate. Questions were asked with original root questions, updated root questions and different item wording. Scripts and questionnaire versions were updated and tested iteratively as sets of interviews progressed (see full cognitive testing report).

Stage 2

Three versions of the survey were used (V1, V2 and V3), mainly to test wording and scales of questions. Three pilot scales (on engagement with research, formulating and exploring lines of enquiry, and a further scale on partnership proposed for UKES 2015) were tested with multiple wordings and question types. After the first set of nine interviews, the original questionnaire (V1) was modified and a new version was created (V2). This was tested during a further set of 21 interviews. The questionnaire was then re-written and restructured based on the feedback of all interviews conducted up to that point (V3). This aimed mainly at focusing the wording of the questions, as well as testing additional questions for the pilot benchmarks for research and partnership. This process was conducted for one further round (of 11 interviews), resulting in the recommended questions, order of items and response categories (V4), included in the Appendix.

Stage 3

Two methods were used to measure reliability:

- test-retest reliability;
- alternate-form reliability.

A test-retest method was used with a select group of students, who completed survey items at the beginning and end of data collection. Alternate-form reliability was done through asking questions with different root questions or slightly

reworded questions. Analysis of the interview data was used to judge the validity and robustness of the items. Analysis was also conducted across the different institutional and student variables for any differences.

9.4 Findings in detail

Students' perceptions of engagement surveys compared to satisfaction surveys

Several students had completed the National Student Survey (NSS), or institutional surveys employing the same or similar questions. On the whole students felt the NSS was generic and too broad, but useful for pointing out aspects of their student experience the institution should improve. To this end, students felt the NSS was aimed more at institutions' priorities, and engagement surveys covered aspects more important to students' own learning experience. Students also noted how the engagement survey made them reflect on how they had spent their time, and on different types of learning activity. Most students felt that engagement and satisfaction surveys covered different aspects of their student experience, and although both could be useful depending on how the data was used, engagement surveys allowed them to reflect in-depth on their student experience and for institutions to have access to this data.

> I think this one's better because it makes you like actually pin point, like you're given a set of like descriptive answers…questions and you like…it helps you pin point what your issue is. Whereas, in a satisfaction survey, I feel like it's just disengaged and it just gives you an opportunity to rant rather than see what's positive and negative at the same time. I feel like if you say satisfaction to a student, will automatically go to negative. If you say, like, survey about how you go on in university, just saying this was good, this was not, I think it's better because it's like a more balanced view. (Female, 22, European Studies)

> Yes. I mean, I think… So the NSS one it's more about… I do feel it's more about… it's more for the university and for, like, the departments, you know, where they're going wrong and to improve it and make it better, and this is more effective for me, like, what you got out of uni, what do you feel you've gained. So it does feel like a totally different… it feels like a totally different survey, like… Like, the NSS one's, like, testing the university and this one feels like more testing me, because it's about what have you done at university to make…to answer all these questions, kind of thing. (Female, 22, Microbiology, UK student)

> Well, I thought the NSS was rubbish. (Male, 22, History, UK student)

Item analysis

After analysis of the interview data, the items were grouped by the scales (and described below). The items in the Academic Integration, Collaborative Learning, Higher Order Learning and Course Challenge scales seemed to work well and students understood the items. Students noted some overlap on the Reflective and Integrative Learning scale and it presented some differences in interpretation across disciplines. The Time Spent scale needed some modifications, but students noted it made them reflect on how they prioritised and spent their time. The Engagement with Research and Formulating and Exploring Questions scales piloted for 2014 presented the most difficulty and are recommended to be significantly reworded or potentially deleted. The new Students as Partners scale, proposed for UKES 2015, was clearly understood and was seen to represent an important aspect of the student experience. Suggested changes are discussed below, and full analysis of all items is available in the full qualitative testing report.

Academic Integration[25]

> During the current academic year, about how often have you done each of the following? (Response categories: *Very often / Often / Sometimes / Never*)

1a. Asked questions or contributed to course discussions in other ways
1e. Discussed your academic performance and/or feedback with teaching staff
1f. Talked about your career plans with teaching staff or advisors
1g. Discussed ideas from your course with teaching staff outside taught sessions, including by email/online
1h. Worked with teaching staff on activities other than coursework

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[25] Note that the item on making changes in response to feedback is discussed below with the Course Challenge scale, as that is where it was originally placed in the design of the questionnaire.

Item 1a: 'Asked questions or contributed to course discussions in other ways' to be changed to 'Asked questions or contributed to class discussions in other ways'.

As students interpret the wording in item 1a as 'class', the change is suggested to prevent confusion with asking questions about how the course is progressing (such as module order or assessment design). No student, even those studying via distance, mentioned online discussions when responding to this item. Overall these items were clear to students, and although many did not participate in the activities referred to in the last three items very often, there was often little desire to do so, particularly if it needed to be initiated by students.

Collaborative Learning

During the current academic year, about how often have you done each of the following?
(Response categories: *Very often / Often / Sometimes / Never*)

    1c. Worked with other students on course projects or assignments
    1d. Explained course material to one or more students
    1j. Asked another student to help you understand course material
    1k. Prepared for exams or assessments by discussing or working through course material with other students

    Item 1j: 'Asked another student to help you understand course material' to remain unchanged or to be deleted.

Students interpreted this item as asking for help in both functional terms (such as essay lengths and deadlines) and in academic terms (such as clarification of facts or procedures). It seems, however, that this is not a standard practice and some students even stated they would rather work things out individually. Some students had a defensive response to this question, stating that although they may help other students, they did not need to seek help from other students, seeing it as a sign of weakness or stupidity. Some students noted overlap between items 1j and 1k, noting that asking for help was often part of working with other students. Other students noted overlap between items 1c and 1k. It may be that 1k is not sufficiently different from 1c and 1j in how students understand the items. The correlation table in the Data Annex shows a correlation of 0.54 between 1j and 1k, and of 0.39 between 1c and 1k.

If all items are to remain, we recommend that the questions in this scale are asked together and in the following order: 1d, 1j, 1c, 1k:

    1d. Explained course material to one or more students
    1j. Asked another student to help you understand course material (or drop this item)
    1c. Worked with other students on course projects or assignments
    1k. Prepared for exams or assessments by discussing or working through course material with other students

However, these questions felt at times repetitive and so it could be advisable to drop two of the items: 1j is the most likely candidate for deletion and possibly 1d. The interviews suggested that it is not a common practice to work in groups or to interact with students on the same course by asking for help understanding course material, and that was felt both across subjects and across institution types (chart 4 shows that 57% of students reported asking another student for help only sometimes or never).

Reflective and Integrative Learning

During the current academic year, about how often have you done each of the following?
(Response categories: *Very often / Often / Sometimes / Never*)

    1l. Combined ideas from different modules when completing assignments
    1m. Connecting your learning to societal problems or issues
    1n. Examined the strengths and weaknesses of your own views on a topic or issue
    1o. Tried to better understand someone else's views by imagining how an issue looks from his or her perspective
    1p. Learned something that changed the way you understand an issue or concept
    1q. Connected ideas from your course to your prior experience and knowledge

    Item 1n: 'Examined the strengths and weaknesses of your own views on a topic or issue' to be changed to 'Identified the strengths and weaknesses of your own opinions', further rephrased or deleted.

Several students were unclear about what item 1n referred to in their experiences. Many struggled to think of examples for this item, or thought that examining strengths and weaknesses of your own views was always part of the thinking process. Most problematically, some students did not understand the question at all. Many students noted duplication between 1n and 1o, feeling that there was inherent overlap in the two activities (the survey found a correlation of 0.57). In conjunction with the confusion students expressed about 1n, it is recommended that this item be deleted.

> *This is one actually that took me a couple of re-reads to understand what it was asking me because your own views on a topic doesn't really come in my subject. It's more about knowledge based...but I took that as how you approach the problem rather than like having your opinion on things just because of that's how my topic is structured. (Male, 20, Mathematics, UK student)*

> *I put sometimes, but I didn't really understand that question. Like, I kind of struggled to think of when I would have done that or really what it meant. (Female, 22, Medicine, UK student)*

> **Item 1p:** 'Learned something that changed the way you understand an issue or concept' to be changed to 'Changed the way you think about an issue or a concept as a result of what you learned' or deleted.

This item seemed too broad, and there was no consensus on how students interpreted 'something' as referred to in the question. Furthermore, and as one of the quotes below states, this question is more relevant to the humanities and the social sciences and may not feel applicable to STEM students. Overall, from the responses to the interviews, students do not seem to find this question particularly meaningful or useful.

> *Yes, so as I developed my political…or like understanding about more political things, that changed the way I saw stuff work, just like how the education is set up in England and stuff like that. (Female, 22, Medicine, UK student)*

> *I mean, I think again I feel that these questions feel more, sort of, they're not, sort of, science degree based. Like, I think if I was studying some sort of...you know, if I was taking some sort of, like, politics class or a sociology class or, like, economics class, I can understand how these questions...how that you'd build on your knowledge in that way. But I wouldn't say my course really does. (Female, 22, Microbiology, UK student)*

> **Item 1q:** 'Connected ideas from your course to your prior experience and knowledge' to remain unchanged or deleted.

Students questioned whether this item referred to prior-year university knowledge and that gained during A-level study or previous non-academic personal experiences. In the case of the former, students felt it was always necessary to draw on previous knowledge at university. When students were prompted to select a question to remove, this was the item most often chosen, largely due to the broad nature of the question.

Higher-order Learning

During the current academic year, how much has your coursework emphasised the following activities?
(Response options: *Very much / Quite a bit / Some / Very little*)

- 2a. Memorising course material
- 2b. Applying facts, theories, or methods to practical problems or new situations
- 2c. Analysing ideas or theories in depth by examining their parts
- 2d. Evaluating or judging a point of view, decision, or information source
- 2e. Forming a new understanding from various pieces of information

It is recommended the root question be changed to 'how much has your course emphasised'. When the word 'coursework' is used students only referred to their assignments and exams. When 'course' was used students included coursework and activities during taught sessions as well as revision activities. As noted in 2013, there were marked disciplinary differences in how students interpreted and responded to the questions.

> **Item 2c:** 'Analysing ideas or theories in depth by examining their parts' to be changed to 'Analysing ideas and theories in depth'.

Several students mentioned that although they analysed theories in their course, they did not necessarily do this by breaking down the theory into parts. Generally this item was clearly understood and interpreted by all interviewees.

Students noted the most overlap in items in this scale. Students felt 2b and 2c had significant overlap, and often thought of the same example for both. Students noted the most overlap between items 2c and 2d (a correlation of 0.52 was found in the survey result).Students also noted overlap between 2d and 2e. However, in general students felt that each question referred to different activities. It is recommended that the scale remains unchanged.

Engagement with Research and Formulating and Exploring Questions

These two scales were included in UKES 2014 for the first time, and were developed specifically for this survey. A majority of students felt more comfortable answering the Engagement with Research items (exploring the extent to which existing research findings and methods have been incorporated into curricula) than the Formulating and Exploring Questions items (focusing on students' own research and exploration of lines of enquiry). The few students who preferred the latter tended to be social sciences/humanities students from research-intensive universities. For both scales, students were split about referring to engagement with their own research and enquiry (such as writing essays or a dissertation) or with research generally (such as that conducted by their lecturers).

It is recommended the root question be changed from 'how much has your *coursework* emphasised' to 'how much has your *course* emphasised'. As noted in Question 2, this provides a more encompassing question. When 'course' was used students also included activities with staff, as well as coursework, assessments and activities.

Engagement with Research

During the current academic year, how much has your coursework emphasised the following activities? (Response categories: *Very much / Quite a bit / Some / Very little*)

- 3a. Learning how knowledge is created in your subject
- 3b. Learning about methods of research and analysis in your subject
- 3c. Learning about the results of current research
- 3d. Exploring the knowledge base of your discipline actively, critically and creatively

> **Item 3a:** 'Learning how knowledge is created in your subject' to possibly be combined with item 3b.
> **Item 3c:** 'Learning about the results of current research' to be changed to 'Learning about the outcomes of current research'.
> **Item 3d:** 'Exploring the knowledge base of your discipline actively, critically and creatively' to be significantly rephrased or deleted.

Students were generally unclear about item 3a, preferring a question about 'how research is done', but then the question becomes very similar to 3b. For item 3c, 'results' has specific disciplinary connotations, generally towards the sciences. Arts students were more comfortable responding to a question about the 'outcomes' of research, which was also applicable for science students. Students were generally very unclear about item 3d; several did not know what 'knowledge base' referred to, questioning if it was the knowledge they had learned or knowledge generally.

This scale is recommended to be changed to:

- 3a. Learning how knowledge is created in your subject
- 3b. Learning about methods of research and analysis in your subject
- 3c. Learning about the outcomes of current research

Formulating and Exploring Questions

During the current academic year, how much has your coursework emphasised the following activities? (Response categories: *Very much / Quite a bit / Some / Very little*)

- 3e. Formulating your own open-ended lines of enquiry (including problems, questions or scenarios)
- 3f. Exploring open-ended lines of inquiry formulated by yourself (including problems, questions or scenarios)
- 3g. Exploring open-ended lines of enquiry formulated or proposed by teaching staff (including problems, questions or scenarios)
- 3h. Your active participation in creating knowledge

> **Item 3e–h:** All items to be significantly rephrased or deleted.

The most problematic element with this scale was the 'open-ended lines of enquiry' part of the first three items, which many students failed to comprehend and many had to read several times. This scale is recommended to be significantly reworded or deleted, particularly the phrase 'open-ended lines of enquiry' to be deleted, as few students understood the items. Students were mixed in their response to item 3h and referred to 'doing research' generally or to their own research, such as writing essays. A select minority were clear about this question referring to their taking part in research say, alongside faculty. This was most often the case for final-year students.

Course Challenge

1i. During the current academic year, about how often have you made significant changes to your work based on feedback?[26]
(Response options: *Very often / Often / Sometimes / Never*)

4. During the current academic year, to what extent has your course challenged you to do your best work?
(Response options: *Very much / Quite a bit / Some / Very little*)

1b. During the current academic year, about how often have you come to taught sessions prepared (completed assignments, readings, reports, etc.)
(Response options: *Very often / Often / Sometimes / Never*)

Item 1b: 'Come to taught sessions prepared (e.g. completed assignments, readings, reports, etc.)' to revert to the original question: 'Come to taught sessions unprepared (e.g. not completed assignments, readings, reports, etc.)'.

For item 1b, drawing on the 2013 project, we conclude that the original version of the question prompts the student to think about how they prepare (or fail to do so) for class more so than the question in this current form. We recommend reverting the item to the original wording. In general, this scale was clearly understood, although the variety of items may lead it to lack coherence as a scale.

Time Spent

Students generally found it very interesting and helpful to respond to this question. Even if self-reports might not provide the most accurate statistical data, they can provide an overall view of how students generally spend their time. Importantly, students stated they had rarely thought about how they spent their time in this way, and some even reflected on whether the way they were spending their time was the most appropriate or useful. In this formative sense, this is an important question, which we strongly recommend should remain, with minor changes in a couple of items as discussed below.

About how many hours do you spend in a typical 7-day week during term-time doing the following?
(Response categories: *0 / 1–5 / 6–10 / 11–15 / 16–20 / 21–25 / 26–30 / more than 30*)

5a. Preparing for taught sessions
5b. Participating in extra-curricular or co-curricular activities (students' union, societies, sports, etc.)
5c. Working for pay on campus
5d. Working for pay off campus
5e. Doing volunteer work
5f. Providing care for dependents (children, parents, etc.)
5g. Commuting to campus (driving, walking, etc.)

Item 5a: 'Preparing for taught sessions' to be replaced with two items: 'Time in taught sessions' and 'Time spent in independent study'

Many students interpreted this question as solely time spent doing reading for a lecture or seminar, and preparing materials for a session. Students reported much higher levels of time in independent study than preparing for taught sessions when both questions were asked. When asked if time spent preparing for taught sessions would be included in 'time in independent study' if only the latter was asked, most students responded in agreement. Time in taught sessions ranged from 1 to 5 hours per week to 21 to 25 hours. When tested there was overlap between 'Time spent preparing for class' and 'Time spent in independent study' when both were asked. Students thought they would include the former in the latter but not vice versa.

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[26] Following the findings reported in section 5, this item is now included in the Academic Integration scale.

Items 5c and 5d can be combined into one item 'Working for pay'. An additional item 'Relaxing and socialising' is suggested to be added (from the NSSE scale used as the basis for these questions) as it adds comprehensiveness and also sparked many students to reflect on how they prioritise their time.

Skills Development

How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?
(Response options: *Very much / Quite a bit / Some / Very little*)

6a. Writing clearly and effectively
6b. Speaking clearly and effectively
6c. Thinking critically and analytically
6d. Analysing numerical and statistical information
6e. Acquiring job- or work-related knowledge and skills
6f. Becoming an independent learner
6g. Being innovative and creative
6h. Working effectively with others
6i. Developing or clarifying personal values or ethics
6j. Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)
6k. Exploring complex real-world problems
6l. Being an informed and active citizen

A tension was found with the root question:

How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

For students at institutions with an active students' union and those involved in it, many students felt that the root question: 'experience at your institution' referred only to formal 'institutional' activities, ('corporate-branded') and not those associated with the students' union. When the root question was changed to 'overall student experience' then students included both institutional and students' union activities. The latter option had a much broader connotation for students, and there was a noted difference in how students responded. This raises the issue about whether the intention of the survey is to explore solely institution-led activities or those done through the students' union as well.

Item 6e: 'Acquiring job- or work-related knowledge and skills' to be changed to 'Acquiring employability skills'.
Item 6k: 'Solving complex real-world problems' to be changed to 'Exploring complex real-world problems'.

Students were comfortable with the shortening of item 6e, and 'employability skills' had resonance across students at a variety of institutional types and disciplines. Some students noted a tension between such activities which were done through the institution or through the students' union. For 6k, 'Solving' problems was beyond the scope of what occurs in many subjects, and students were more comfortable with 'exploring' problems. Some students referred to activities that occurred during their university experience (such as writing a CV and applying for jobs) as being 'real-world' problems. Overall, this scale worked well. A few students noted that items 6a–f were core activities of university study, and that 6g–l were also important, but less so than the former set.

Students as Partners

A number of questions were tested relating to this topic, for possible inclusion in the 2015 administration of UKES. The development of the scale was proposed by the HEA due to the increasing emphasis on staff working in partnership with students in UK higher education. The intention of the scale is to capture activities associated with a 'partnership ethos', and the purpose of the interviewing was to test which of these could be distilled into practices. Full details of testing this scale are available in the full report.

The items piloted include:

During the current academic year, how much has your institution emphasised the following activities?
(Response categories: *Very much / Quite a bit / Some / Very little*)

Item 7a: 'You providing feedback about how you think the course is going'

Item 7b: 'You making active decisions about how and what you study'
Item 7c: 'You actively contributing to shaping an academic community'
Item 7c (alternative): 'You actively contributing to shaping a community of staff and students'
Item 7d: 'You taking responsibility for your learning'
Item 7e: 'Developing a sense of belonging'

Students were satisfied with 7a and 7d. For 7a, some institutions had very clear policies and procedures for collecting student feedback on modules and end-of-year surveys. Students were much more likely to refer to filling out module evaluation forms than institution-wide surveys. Other institutions seemed to have sporadic opportunities for students to feedback. Students said they were much more likely to feed back when it was something done in a class setting compared to on-line opportunities.

Most students felt that 7b could be split into two questions, as students felt 'how' they study referred to tactics used during independent study, choice in assessments (such as essays or projects), and individual or group study. 'What' you study was more focused on content of assessments (such as module choice and the ability to select topics for essays).

However, 7c was initially confusing to students, and most asked to what the question was referring. The alternative item 7c was sufficiently clear to students with the clarification of adding '…a community of staff and students'.

For 7d, students almost universally referred to this as the 'opposite of spoon-feeding'. Students felt confident this was an essential part of higher education, and often what differentiated it from A-level schooling or college. Generally students were positive about this question, feeling that taking responsibility for their learning was part of succeeding in higher education. A few students noted a negative connotation, feeling that the reason a student needed to take responsibility was because institutions did not provide enough support to students.

Student reaction to item 7e (item 7g in third iteration) was mixed, if not mainly negative. We have found that many students were uncomfortable with the use of the expression 'sense of belonging' finding it perhaps too personal. Some students in the humanities/social sciences were fine addressing this question but we found those in the sciences were clearly not. This was interesting to note, particularly as having 'a sense of belonging' is increasingly mentioned in the academic literature as a key part of students' successful university experience (Read *et al.* 2003; Meeuwisse *et al.* 2010; Strayhorn, 2012; Thomas 2012).

> *Like, just a sense of belonging, like, it's just like a…is weird phrasing. I mean, I guess that's what part of… about what university's about, it's, like, you just want to feel at home there, you want to feel that it's a part of you, but I wouldn't say it's something…I'd say I wouldn't put it on a…on feedback form like that. (Female, 22, Microbiology, UK student)*

We would however recommend the following order:

Item 7f: 'You taking responsibility for your learning'
Item 7c: 'You making active decisions about what you study'
Item 7b: 'You making active decisions about how you study'
Item 7a: 'You providing feedback about how you think the course is going'
Item 7e: 'You actively contributing to shaping a community of staff and students'

9.5 Recommendations

Overall

Unanimously, students were enthusiastic about the idea of engagement questions. Students felt engagement questions showed that the institution valued students' experiences. Therefore, student engagement survey questions seem to be a valid and valued measure of the student experience.

Final-year students we interviewed were often critical of the National Student Survey (NSS) they had filled in earlier in the year, and found that engagement survey items seemed to be more appropriate for providing a more accurate and detailed view of students' experiences and perceptions.

It is **recommended** that institutions make clear to students that action has been taken if issues are flagged in a survey. Students often expressed they did not believe they were listened to when they provided feedback through surveys.

Changes are recommended to the root questions for scales: Higher-Order Learning; Engagement with Research; Formulating and Exploring Questions; and Skills Development. The items in the Academic Integration, Collaborative Learning, Higher-Order Learning and Course Challenge scales seemed to work well and students understood the items. Students noted some overlap on the Reflective and Integrative Learning scale and it presented some differences in interpretation across disciplines. The Time Spent scale needed some modifications, but students noted it made them reflect on how they prioritised their time. The Time Spent responses can provide very useful data, but their precision should be taken with caution, although students felt their responses represented fair accuracy. The Engagement with Research, and Formulating and Exploring Questions pilot scales presented the most difficulty and are recommended to be significantly reworded or potentially deleted. The piloted Students as Partners scale was clearly understood and was seen to represent an important aspect of the student experience. A few questions were noted that could be dropped, after analysis of the quantitative data and decisions about the length of the survey.

Response categories

In general students were satisfied with the response categories. The Time Spent scale raised the most difficulties for students to answer. Although the categories were clear, students struggled to compute an average and several changed their response after talking through their response. Students were satisfied with the hours-per-week categories for the scale.

9.6 Final recommended versions of items

Academic Integration

During the current academic year, about how often have you done each of the following? (Response categories: *Very often / Often / Sometimes / Never*)

    1a. Asked questions or contributed to course discussions in other ways
    1e. Discussed your academic performance and/or feedback with teaching staff
    1f. Talked about your career plans with teaching staff or advisors
    1g. Discussed ideas from your course with teaching staff outside taught sessions, including by email/online
    1h. Worked with teaching staff on activities other than coursework

Collaborative Learning

During the current academic year, about how often have you done each of the following? (Response categories: *Very often / Often / Sometimes / Never*)

    1d. Explained course material to one or more students
    1j. Asked another student to help you understand course material
    1c. Worked with other students on course projects or assignments
    1k. Prepared for exams or assessments by discussing or working through course material with other students

Reflective and Integrative Learning

During the current academic year, about how often have you done each of the following? (Response categories: *Very often / Often / Sometimes / Never*)

    1l. Combined ideas from different modules when completing assignments
    1m. Connecting your learning to societal problems or issues
    1o. Tried to better understand someone else's views by imagining how an issue looks from his or her perspective
    1p. Learned something that changed the way you understand an issue or concept
    1q. Connected ideas from your course to your prior experience and knowledge

Higher-order Learning

During the current academic year, how much has your course emphasised the following activities? (Response options: *Very much / Quite a bit / Some / Very little*)

2a. Memorising course material
2b. Applying facts, theories, or methods to practical problems or new situations
2c. Analysing ideas or theories in depth by examining their parts
2d. Evaluating or judging a point of view, decision, or information source
2e. Forming a new understanding from various pieces of information

Engagement with Research

During the current academic year, how much has your course emphasised the following activities? (Response categories: *Very much / Quite a bit / Some / Very little*)

3a. Learning how knowledge is created in your subject
3b. Learning about methods of research and analysis in your subject
3c. Learning about the outcomes of current research

Course Challenge

During the current academic year, about how often have you done each of the following? (Response categories: *Very often / Often / Sometimes / Never*)

1b. Come to taught sessions unprepared (e.g. not completed assignments, readings, reports, etc.)
1i. Made significant changes to your work based on feedback

4. During the current academic year, to what extent has your course challenged you to do your best work?(Response options: *Very much / Quite a bit / Some / Very little*)

Time Spent

About how many hours do you spend in a typical 7-day week during term-time doing the following?
(Response categories: *0 / 1–5 / 6–10 / 11–15 / 16–20 / 21–25 / 26–30 / more than 30*)

5a. Time spent in taught sessions
5b. Time spent in independent study
5c. Participating in extra-curricular or co-curricular activities (students' union, societies, sports, etc.)
5d. Working for pay
5e. Doing volunteer work
5f. Providing care for dependents (children, parents, etc.)
5g. Commuting to campus (driving, walking, etc.)
5h. Relaxing and socialising

Skills Development

How much has your overall student experience contributed to your knowledge, skills, and personal development in the following areas?
(Response options: *Very much / Quite a bit / Some / Very little*)

6a. Writing clearly and effectively
6b. Speaking clearly and effectively
6c. Thinking critically and analytically
6d. Analysing numerical and statistical information
6e. Acquiring employability skills
6f. Becoming an independent learner
6g. Being innovative and creative
6h. Working effectively with others
6i. Developing or clarifying personal values or ethics
6j. Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)
6k. Exploring complex real-world problems
6l. Being an informed and active citizen

During the current academic year, how much has your institution emphasised the following activities?
(Response categories: *Very much / Quite a bit / Some / Very little*)

> 7f: You taking responsibility for your learning
> 7c: You making active decisions about what you study
> 7b: You making active decisions about how you study
> 7a: You providing feedback about how you think the course is going
> 7e: You actively contributing to shaping a community of staff and students

9.7 A design for further cognitive testing

Although usually used in the process of survey design and development, cognitive research testing and focus groups can be used to provide a deeper, more contextualised understanding of survey responses. Sharing information about what students have in mind when they respond to survey questions can help deepen discussions about student survey results by providing concrete examples of students' experiences and directions for student-led enhancement.

In addition, information gleaned from interviews and focus groups can:

1. Help determine how students interpret survey items and provide feedback for any changes to survey items.

2. Provide specific examples of what results mean in a particular context (such as what critical thinking looks like in Mathematics).

3. Help to develop a deeper understanding of differences in the responses of particular groups of students (such as underrepresented students; students in specific subjects or courses; part-time students; non-traditional-age students).

4. Provide additional evidence on topics of interest to the institution, such as specific local initiatives.

5. Help to enhance understanding of results to increase the likelihood that change efforts based on survey results would prove effective, and provide an opportunity for student-led enhancement.

With sufficient training, cognitive testing and focus groups can be an opportunity to get students involved in enhancement activities. Provided with training, scripts and survey forms, undergraduate and postgraduate students can conduct interviews and analyse data.

A further role for cognitive interviewing can be as an evaluation tool for the survey designers and those in charge of responding to the survey data. Asking the same type of question of the survey designers and those responsible for the data can clarify the intent of the questions, and what they hope to achieve with the data from the questions (such as if it is possible to make any changes about the topics covered in certain questions).

The scripts in the Appendices to the main report of the cognitive testing can be used as guides, with amendments based on the local survey context.

Further resources

A Guide to Contextualizing Your NSSE Data: Cognitive Interviews and Focus Groups. Available at:
http://nsse.iub.edu/pdf/Cognitive_interviews_facilitation_guide.pdf

Conrad, F., and Blair, J. (1996). From impressions to data: Increasing the objectivity of cognitive interviews. *Proceedings of the Section on Survey Research Methods. Annual Meetings of the American Statistical Association.* August, 1-10).

10. Conclusion

The findings contained in this report shed light on how students in the UK engage in a range of important educational activities. As always, various caveats need to be borne in mind, such as the voluntary institutional participation and the somewhat low response rate. The primary purpose of this report is to assist the participating institutions in exploring and interpreting their own results. Further investigation, potentially including the kind of cognitive interviewing described above, is crucial to making proper use of student feedback. UKES is firmly aimed at that kind of enlightened approach to the use of evidence for the enhancement of learning and teaching, which is why institutional results are not made public or included in league tables.

Some of the most interesting findings relate to the amount of time that students have reported spending preparing for taught sessions. The fact that there is less than half an hour between the average amount of time that full-time and part-time students reported preparing for class is initially striking. However, part-time students are considerably underrepresented in the survey and the smaller number of responses means that this raises more questions than it answers. Similarly, the difference between the amount of time that students in the UK report preparing for class, compared to those in Ireland and, particularly, North America, is substantial. However, this result is again only suggestive; the cognitive interviewing found that UK students have a particularly narrow interpretation of the tasks involved in preparing for taught sessions, and so their responses to that question are likely to only encompass a small proportion of study activities taken as a whole. In the end, it may well be that – as is suggested in the section on the cognitive testing – the value of these questions lies as much in the reflection that that they prompt for students themselves, as much as in the resulting data.

There are also interesting differences between institutional type and mission group, particularly around students' engagement with research and enquiry. Students at older, traditionally more research-oriented institutions seem to perceive less emphasis on learning the methods and results of research, and on formulating and exploring open-ended lines of enquiry, than those at traditionally more teaching-focused institutional types. The self-selecting nature of the institutions who participated needs to be borne in mind, as does the concerns with those items that were found in the cognitive testing. Nevertheless, it suggests a different and interesting picture of how students are engaged in research.

Finally there are, as was seen in 2013 and as would be expected, large differences between disciplines. In some cases, such as the development of skills in numerical analysis, these differences are unproblematic. In other cases, such as the low perceived emphasis in certain disciplines on the evaluation of points of view, decisions and information sources, difficult questions are raised about what is appropriate in different disciplines. Do all students need to engage in those kinds of evaluation? And if so, do those kinds of activities need to be made explicit to students? As with the other findings – and as with all student survey data – the results are merely suggestive, and raise interesting and often important questions that require and warrant further research.

The findings from this second pilot of UKES will help to ensure that the 2015 administration is as robust as possible. The following findings in particular will inform the development of the survey:
- At present, the questionnaire does not appear to explicitly measure the challenge that students experience from the course in a reliable way.
- The items on engagement with research and (to a greater extent) participation in enquiry, may need substantial revision for 2015.
- It could be useful to change the items on the time that students spend on different activities in order to explore the time spent in taught sessions, and in independent study.
- There are promising findings about the possibility of adding new questions on students' sense of the existence of a partnership ethos with teaching staff.

The survey will run again in 2015 and, hopefully, continue to help institutions explore and benchmark their students' engagement. It is part of a broader movement, by the HEA and others, to better understand how

students can be better supported and encouraged to invest effort in the important educational activities that are distinctive of higher education.

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Appendix: Full list of items and scales

The list below includes all of the items in the UKES 2014 questionnaire, grouped into recommended scales based on the findings in section 5 of the report. The devolved nature of the administration meant that the items were presented to students in a range of different questionnaire formats.

Higher-order Learning
During the current academic year, how much has your coursework emphasised the following activities?
(Response categories: *Very much / Quite a bit / Some / Very little*)
1. Applying facts, theories, or methods to practical problems or new situations
2. Analysing ideas or theories in depth by examining their parts
3. Evaluating or judging a point of view, decision, or information source
4. Forming a new understanding from various pieces of information

Course Challenge
1. During the current academic year, to what extent has your course challenged you to do your best work?
   (Response categories: *Very much / Quite a bit / Some / Very little*)
2. During the current academic year, about how often have you come to taught sessions prepared (completed assignments, readings, reports, etc.)?
   (Response options: *Very often / Often / Sometimes / Never*)

Collaborative Learning
During the current academic year, about how often have you done each of the following?
(Response categories: *Very often / Often / Sometimes / Never*)
1. Worked with other students on course projects or assignments
2. Explained course material to one or more students
3. Asked another student to help you understand course material
4. Prepared for exams or assessments by discussing or working through course material with other students

Academic Integration
During the current academic year, about how often have you done each of the following?
(Response categories: *Very often / Often / Sometimes / Never*)
1. Asked questions or contributed to course discussions in other ways
2. Discussed your academic performance and/or feedback with teaching staff
3. Talked about your career plans with teaching staff or advisors
4. Discussed ideas from your course with teaching staff outside taught sessions, including by email/online
5. Worked with teaching staff on activities other than coursework
6. Made significant changes to your work based on feedback*

Reflective and Integrative Learning
During the current academic year, about how often have you done each of the following?
(Response categories: *Very often / Often / Sometimes / Never*)
1. Combined ideas from different modules when completing assignments
2. Connecting your learning to societal problems or issues
3. Examined the strengths and weaknesses of your own views on a topic or issue
4. Tried to better understand someone else's views by imagining how an issue looks from his or her perspective
5. Learned something that changed the way you understand an issue or concept
6. Connected ideas from your course to your prior experience and knowledge

Time Spent
About how many hours do you spend in a typical 7-day week during term-time doing the following?

(Response categories: *0 / 1—5 / 6–10 / 11–15 / 16–20 / 21–25 / 26–30 / more than 30*)
1. Preparing for taught sessions
2. Participating in extra-curricular or co-curricular activities (students' union, societies, sports, etc.)
3. Working for pay on campus
4. Working for pay off campus
5. Doing volunteer work
6. Providing care for dependents (children, parents, etc.)
7. Commuting to campus (driving, walking, etc.)

Skills Development 1
How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?
(Response categories: *Very much / Quite a bit / Some / Very little*)
1. Writing clearly and effectively
2. Speaking clearly and effectively
3. Thinking critically and analytically
4. Becoming an independent learner*
5. Being innovative and creative*
6. Working effectively with others
7. Developing or clarifying personal values or ethics
8. Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)
9. Being an informed and active citizen

Skills Development 2
How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?
(Response categories: *Very much / Quite a bit / Some / Very little*)
1. Analysing numerical and statistical information
2. Acquiring job- or work-related knowledge and skills
3. Solving complex real-world problems

Engagement with Research
During the current academic year, how much has your coursework emphasised the following activities?
(Response categories: *Very much / Quite a bit / Some / Very little*)
1. Learning how knowledge is created in your subject*
2. Learning about methods of research and analysis in your subject*
3. Learning about the results of current research*
4. Exploring the knowledge base of your discipline actively, critically and creatively*

Formulating and Exploring Questions
During the current academic year, how much has your coursework emphasised the following activities?
(Response categories: *Very much / Quite a bit / Some / Very little*)
1. Formulating your own open-ended lines of enquiry (including problems, questions or scenarios)*
2. Exploring open-ended lines of inquiry formulated by yourself (including problems, questions or scenarios)*
3. Exploring open-ended lines of enquiry formulated or proposed by teaching staff (including problems, questions or scenarios)*
4. Your active participation in creating knowledge *

In addition to the scale listed above, one further item is included:

During the current academic year, how much has your coursework emphasised the following activities?
(Response options: *Very much / Quite a bit / Some / Very little*)
• Memorising course material

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