



Teaching excellence in the disciplines

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Preface

“Conceptions of good or excellent teaching are generally multi-faceted and sometimes quite complex.”

This quotation from one of the deans interviewed in the research undertaken by LSE Enterprise and published in ‘Teaching excellence in the disciplines’ sums up the challenge facing the architects of the Teaching Excellence Framework (TEF). The Higher Education Academy warmly welcomes the notion of a TEF and endorses its aims, in particular the drive to enhance the quality, and to raise the status, of teaching in higher education. The challenge is to get the assessment of teaching quality right. The danger is that, as the report makes clear, the ‘wrong measures’ could provide perverse incentives, which could damage, or at least not enhance, higher education provision.

The report is extremely timely as thoughts are turning to the planning of a discipline or subject-level TEF to follow the institution-level assessment. The report not only explores the differing conceptions of teaching excellence amongst deans from across a range of disciplines, it also provides a snapshot of the state of play in terms of the development of particular disciplines (the persistence of traditional or ‘signature’ pedagogies) as well as the tendency towards inter-disciplinarity and ‘disciplinary boundary crossing’. In so doing it explores a central question for policy-makers: whether disciplinary differences necessitate the application of discipline-specific criteria to the assessment of the quality of teaching in higher education or whether larger common concerns about student satisfaction, retention and success and employment transcend disciplinary contexts.

The report cautions against under-estimating the complexity of the situation where a wide variety of discipline identities are at play in a highly rich and diverse sector. The HEA is well positioned through its Pro-Vice Chancellor and Deans’ networks to act as a two-way conduit between institutions and policy-makers to ensure that the TEF achieves its laudable ambitions.

Professor Stephanie Marshall

HEA, Chief Executive

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Executive summary

This report examines the conceptions of 'teaching excellence' that obtain in different disciplines across the expanded and differentiated structure of UK higher education (HE). The report reviews relevant literature and presents evidence collected from university deans with responsibilities for different groupings of academic disciplines about the comparability of teaching quality across different disciplines and institutions.

Aims and contexts

Academic disciplines have traditionally formed the basic organisational units within higher education institutions (HEIs). They have been the primary source of identity and loyalty of the academic staff who work in them, and they have provided the primary focus for the student learning which occurs within them. At the end of their studies, students have 'become' historians, economists, chemists, biologists, mathematicians, sociologists, etc., and many of the students will carry these identities for the rest of their lives.

There are, however, significant differences between disciplines, in the forms and content of the knowledge that is transmitted, but also in how they relate to the broader world outside of HE. Some disciplinary identities carry with them professional roles in employment – the chemist in the local pharmacy, the accountant in the office next door, for example – whereas others are more internalised in the values and dispositions held by the individual graduates.

With the expansion of HE in recent decades has come increasing diversity and differentiation, both in relation to its institutional forms, to the backgrounds and aspirations of the people who come to study there, and to the experiences and outcomes that they obtain from those studies. The knowledge transmitted by HE no longer sits neatly within tidy disciplinary packages. External employment considerations increasingly shape learning objectives and may require frequent disciplinary boundary crossing by students.

The question of what is learnt in HE is no longer mainly to be answered in relation to its disciplinary context. But it is a question that is increasingly being asked, partly because of the vastly increasing numbers of lives that are being affected by it and partly because of its increasing costs.

All of this has led to increasing visibility and accountability of HE to the rest of society. Reflecting both its importance to increasingly large proportions of national populations and its costs (and benefits) to the whole of society, questions are raised about HE's performance, at national system, institutional, and individual levels. And the answers to these questions impact back upon HE with

its increasing differentiation according to various quality measures – whether of research excellence, student satisfaction, employment outcomes, teaching quality, or mixtures of these and other features of HE.

Within these changing contexts for the future development of HE, and in particular the proposals to assess teaching excellence at discipline level, the position of academic disciplines remains a central issue. Do differences between disciplines require that different questions need to be posed about their qualities and effectiveness in their different institutional contexts? Or are there now larger questions (concerning consumer satisfaction, employment relevance, etc.) that transcend disciplinary contexts? And is knowledge today so often organised in multi-disciplinary or inter-disciplinary forms as to render the disciplinary focus less and less relevant to decision-making.

The project

The project on which this report is based was commissioned by the Higher Education Academy (HEA) to examine the extent to which disciplinary differences remain central to judgements about the quality or excellence of teaching in HE. The project's aim was to investigate:

the range, distinctiveness, balance and effectiveness of approaches to learning and teaching employed within different disciplinary groupings within UK higher education, and the impact these have on student learning outcomes.

Five research questions were posed and are addressed in this report. They are:

- (i) What is the range and balance of pedagogic approaches employed by teaching staff within their discipline?
- (ii) What is considered to reflect excellent teaching in the disciplines?
- (iii) How does this vary across disciplines and higher education providers?
- (iv) Are there distinctive disciplinary or 'signature' pedagogies?
- (v) Which pedagogic approaches are the most effective in terms of impact on defined learning outcomes?

Project methodology and organisation

The project had two main phases. The first was a literature review focused on disciplinary based HE teaching journals. The second was the collection of evidence from university deans about changing pedagogic practices within their own institutions.

Both phases of the project utilised the HEA's four disciplinary clusters – Arts and Humanities, Health and Social Care, Social Sciences, and Science, Technology, Engineering and Mathematics

(STEM) subjects in order to address the perspectives on the effectiveness of different pedagogic approaches across a range of disciplines.

The main general findings of the project are summarised below for the two phases of the project. Details on the four disciplinary clusters are available in the full report.

Main findings from the literature review

Findings are summarised in relation to the project's five main research questions.

(i) Range and balance of disciplinary differences in pedagogic approaches

- Across the disciplines there is an increasing trend towards pedagogic research that focuses on simulations, real-world experiences, and problem solving approaches. The extent, nature and purpose of this research and pedagogic practice varies according to disciplinary clusters and disciplines;
- across the disciplines there is an increasing research focus on technologies for learning and the learning of technological skills. The extent, nature and purpose of this research and pedagogic practice varies according to disciplinary clusters and disciplines;
- pedagogic issues relating to work experience and work placement are an increasing focus of pedagogic research across the disciplinary clusters. The extent, nature and purpose of this research and pedagogic practice varies by disciplinary cluster and discipline;
- group approaches to teaching and learning are researched across all of the four disciplinary clusters. The extent nature and purpose of the research and pedagogic practice varies by disciplinary culture;
- in all clusters there is research that explores more traditional pedagogic approaches such as lectures, seminars, labs, studio work, etc. This varies according to disciplinary clusters and disciplines.

(ii) Conceptions of excellent teaching

- The concept of excellent teaching is not used to any great extent in the pedagogic literature analysed. While there are articles describing exemplary practices, most of the research adopts research methods from Social Sciences (especially educational research) but also from the disciplines themselves. There is a mixture of qualitative, quantitative and experimental approaches and these underpin discussions of the value of different approaches;
- the value of teaching and learning approaches are framed with respect to the knowledges, dispositions and attributes that are associated with learning different disciplines. There is some coherence in all of the clusters regarding what they hope students will become.

(iii) Institutional differences

- > Pedagogic literature tends to address the issue of difference and diversity in terms of their being different types of students and different levels of resources available to teachers and students;
- > literature reporting research based in pre-1992 and post-1992 universities indicate a concern with students' initial levels of skills and knowledges;
- > there are concerns, such as student engagement, employment skills and teaching across disciplinary boundaries that appear to feature across institutions.

(iv) Signature pedagogies

- > There is evidence that there are still distinct pedagogies associated with the different disciplines and that, in general, those in the same cluster tend to share characteristics in common. These relate to helping students to develop the graduate identities that are associated with the disciplines, and they can be more or less employment focused;
- > new pedagogic developments appear to build on and reaffirm disciplinary differences;
- > there is evidence of boundary crossing and more complex relationships with disciplines leading to some research;
- > there is evidence that across the disciplinary clusters research addresses broader concerns. For more vocational degrees this can be employer driven. For all disciplines, national and international issues of quality, and the economic pressures associated with marketisation also shape disciplinary concerns.

(v) Impacts on learning outcomes

- > In the research literature, impacts of pedagogic innovation on students learning outcomes are assessed using a range of techniques including students' assessment results, qualitative analysis of work and practice, quantitative surveys and quasi-experiments;
- > understandings of the outcomes are framed in terms of desired disciplinary identities and attributes.

Some conclusions

The final section of the report summarises the findings in terms of 'what is known and not known' about the factors associated with excellence in teaching at universities and other HEIs. The report ends with a set of recommendations to policy makers, HEIs and the academic community. To summarise some of the main findings:

- > There are significant differences in the pedagogic approaches of different disciplines. These reflect differences in traditions, in knowledge content, and in relationships of disciplines with the wider society;
- > pedagogic approaches differ in terms of factors such as the roles and relationships between teachers and students, the degree of independence and engagement expected of students, the sources of knowledge and their modes of transmission, and the balance between a subject-centred and a student-centred emphasis;
- > in many institutions, there appears to be a growing tension between disciplinary approaches and the requirements set centrally by the institution, the latter reflecting external regulatory and reputational factors. There may be a danger of compliance in the responses of academic staff to these requirements and an undermining of some of the conditions necessary to achieve excellence in the teaching of particular disciplines;
- > on some important issues, there is a lack of clarity about causality, especially in distinguishing between the effects of input and process factors. There is very considerable diversity in the HE student population, in relation to social and educational backgrounds, aspirations, support networks, nationality, age, race and gender and so on. To what extent do different students require different pedagogic approaches and different measures of 'teaching excellence'?
- > several of the deans interviewed mentioned the uncertainty of students' futures. They would be living in a fast-changing world. Higher education was seen as an important preparation, but a preparation for what? Past excellence was no guarantee of future excellence. Teaching in higher education would need to adapt, recognising both the changing and diverse backgrounds of its students and their changing and uncertain futures.

1. Aims, context, project methodology and organisation

Higher education within the UK has expanded significantly over recent decades and is now characterised by considerable diversity in its institutional forms, in the content of its courses, and in the backgrounds, aspirations and destinations of its students. An extensive literature has identified HE pedagogies, including teaching practices and approaches, that are unique to disciplines and has proposed that these are linked to the specific knowledge structures of disciplines, the cultures of disciplines, the thought processes underpinning them, and/or the shared practices and identities of those who teach and study them (Becher and Trowler 2001; Biglan 1973; Donald 2002; Gurung *et al.* 2009; Pace and Middendorf 2004; Meyer and Land 2004; Shulman 2005; Trowler *et al.* 2012; Winchester 1986). For example, Shulman's (2005) notion of signature pedagogies suggests that teaching and learning practices are shaped by distinctive disciplinary assumptions about legitimate ways of creating and imparting a body of knowledge which includes the know-how needed to understand and use knowledge. Integral to this are implicitly and explicitly articulated and imparted attitudes, values and dispositions. This has led authors to explore "the ways of knowing, the habits of mind, and the values used by experts in the field" (Gurung *et al.* 2009; Chick *et al.* 2012). However, a burgeoning body of research has identified a range of changes that have undermined the discreteness of the disciplinary based units that have formed the organisational and intellectual foundations for the development of HEIs in the UK and elsewhere. It is also recognised that, in recent years, disciplinary boundaries have tended to become blurred with a growth in inter-disciplinarity and in the diversity of disciplines underpinning new vocational and professional degrees (Haynie *et al.* 2009). Additionally, the centralisation of university programmes to train teachers has increased mutual pedagogical learning and exchange of practices across disciplinary boundaries, and central units have been established in many universities to provide co-ordination and support for the university teaching function.

University teaching has also been required to respond to a wide range of changing contextual features that potentially affect all disciplines. These include a growing internationalisation (including both academic staff and students); student diversity and widening participation; students' changing expectations; a growing marketisation and consumerism within HE; the employability agenda; a rising importance of student evaluations, league tables and quality regimes; and technology enhanced learning. With the imminent arrival of a new national Teaching Excellence Framework (TEF) in the UK, questions arise as to the basis for judging the quality of HE pedagogies; whether there are criteria that can be applied across such a large and diverse sector;

whether there need to be disciplinary specific criteria; and what changes and innovations may be required to further enhance quality and excellence.

The project started from the assumption that the range of distinct pedagogical approaches associated with the different disciplines were a product of (a) their cultural, social, political and economic development within specific HEIs and (b) the materially distinct forms of knowledge they conveyed.

The large questions being posed by these developments concern whether the disciplinary foundations remain the 'basic units' for the core functions of HE, namely teaching and research. The focus of this report is on the teaching function, on whether there seem to be generalisations which can be made about teaching excellence and its impacts which cut across the considerable diversity which today exists across UK HE, and the extent to which differences, where they do exist, represent a 'vertical differentiation' of the system (i.e. some teaching is better than others) or a 'horizontal differentiation' (i.e. teaching needs to be different in order to provide different things to different learners in different situations).¹

The project on which this report is based aimed to investigate the perspective of the disciplinary specific learning-and-teaching research literature, and the views of faculty based deans with responsibilities for learning and teaching (or equivalent senior staff with these responsibilities within a faculty) regarding:

the range, distinctiveness, balance and purpose of the different approaches to learning and teaching employed within different disciplinary groupings within UK HE, and the impact these are thought to have on student learning outcomes.

The project was structured through the following five research questions:

- (i) What is the range and balance of pedagogic approaches employed by teaching staff within their discipline?
- (ii) What is considered to reflect excellent teaching in the disciplines?
- (iii) How does this vary across disciplines and HE providers?

¹ The distinction between 'vertical' and 'horizontal' differentiation of higher education systems was first made in 1983 by Burton Clark in 'The Higher Education System', University of California Press. UK higher education is generally regarded as an example of one of the more vertically stratified systems, with a steep hierarchy of institutions. We have used the terms slightly differently here to refer explicitly to conceptions of differences in teaching, as either 'better/worse' or just 'different'.

- (iv) Are there distinctive disciplinary or 'signature' pedagogies?
- (v) Which pedagogic approaches are considered the most effective in terms of their impact on producing suitable graduates of different disciplines?

The project attempted to address these questions in relation to diverse providers of HE across the UK and, in particular, it used the HEA's four disciplinary clusters of Arts and Humanities, Health and Social Care, Social Sciences, and Science Technology Engineering and Mathematics (STEM) to explore whether disciplines clustered together in these groupings have knowledge and contexts that overlap with one another to the extent that pedagogic concerns and approaches differ from those in other groupings. Broadly, we investigated what pedagogic approaches were used across a range of disciplines, and why they were seen as effective, or in need of improvement, by those researching learning and teaching in the fields, and by deans.

The project was undertaken in two main phases. The first phase consisted of a literature analysis focused on analysing discipline-based literature on HE teaching and learning in 36 disciplines. It was recognised that the journals would be more likely to emphasise change and innovation in pedagogic approaches and, therefore, care would be needed in using them to make generalisations about current practices across the system. However, this section demonstrates what those researching learning and teaching, who are arguably at the cutting edge of teaching innovation, seem to be concerned with. This aspect of the project also involved researching the nature of the disciplines using the UCAS website, university websites, and those of professional associations in order to gauge whether and how the range of programmes on offer at undergraduate and postgraduate levels in the name of different disciplines had changed. From this research we developed a systematic categorisation that helped us to think about how the range of teaching challenges were shaped by this more complex context. This also enabled us to think about how the disciplines might have changed, and to think about whether and how this was driving new innovations that would need to be taken into consideration when thinking about teaching excellence. Hence, this phase was designed to help us gauge current and future directions in learning and teaching in the disciplines.

There was more focus on the latter in the project's second phase, which consisted of interviews with 23 selected university deans (or equivalent staff) with disciplinary leadership responsibilities falling within each of the HEA's four disciplinary clusters, and representing the diversity of institutional provision across UK HE. In addition to interviews with deans, an online survey of a larger sample of deans, taken from a list of deans associated with the HEA, was undertaken.

In the second section of this report, messages from the analysis of literature will be presented about pedagogic developments and insights into how they might impact on understandings of

excellence in each of the HEA's four disciplinary clusters. At the end of section two there is a summary of the key messages from the literature analysis. In section three, the evidence collected from university deans will be presented, again in relation to the four disciplinary clusters, about changing pedagogic practices within their own institutions, the factors that were driving the changes, and their consequences for student learning and the wider long-term outcomes of the experience of higher education. At the end of section three, there is a comparative review of the deans' comments across the four disciplinary clusters in relation to the project's five research questions. Finally, in section four of the report, we summarise 'the things we know' and 'the things we do not know' about 'teaching excellence in the disciplines' across UK HE.

2. Analysis of disciplinary literature

A key aim of this dimension of the project was to map out the range of pedagogical issues being researched within each discipline, and the variation within and between the HEA clusters. The goal was to provide a sense of the range, distinctiveness, balance, and purpose of the different approaches to learning and teaching that were being investigated by those working within the disciplines. Ultimately, we hoped to see if there was agreement about what seemed important to authors of this literature and what were pertinent issues to faculty deans. This comparative aspect is mostly discussed in the sections reporting the data pertaining to the deans, although some relevant observations are also made in this section of the report.

The task of understanding the focus and concerns of authors of pedagogic literature included gaining insight into what was driving what they researched, for example: developments in the discipline; inter-disciplinary issues; employers' desires; societal problems; professional requirements; institutional concerns; or national quality and governmental agendas. This aspect of the study also aimed to explore whether there were distinctive disciplinary or subject cultures with shared cognitive or sociological concerns or 'signature' pedagogies (Beecher and Trowler 2001; Shulman 2005) evident in this pedagogical² research literature, or if the trends identified in later literature, which claims that disciplinary boundaries have become more permeable and that shared concerns are getting greater attention. To this end it was important to understand the range of pedagogical approaches that were being adopted, such as: student-led or teacher-led, research-informed teaching, participatory approaches to pedagogical design, autocratic and democratic teaching styles, the use of technologies for learning, and competitive, co-operative and collaborative approaches. It was also imperative to gain insight into how the pedagogic strategies discussed related to the notion of a suitable graduate in their disciplines and whether similar pedagogic strategies were being used to achieve the same or dissimilar outcomes with students.

In addition to this, we wanted to explore whether the distinctiveness that is associated with the disciplines that have been clustered together by the HEA have coherence in terms of how pedagogic quality can be understood or whether other factors that might unite and divide the disciplines are more apparent in the literature. The ultimate goal was to understand if there was a shared sense of what would constitute excellent teaching in the disciplines that often find themselves as part of the same faculty. On the ground, we found that the organisation across faculties does not always mirror these HEA groupings. The significance of this to understanding

² We use a broad definition of the terms pedagogical and pedagogy to encompass all of the activities that universities and their staff engage in, which aim to facilitate students learning and development.

how good teaching is evaluated and understood is discussed in the methodology section, describing how we generated the deans' data as well as in the key findings section. A further potential distinction lies in the course contexts in which the discipline is being taught. Thus, there is a question whether pedagogic approaches to the teaching of Economics are the same or different according to whether the students are studying Economics for an Economics degree or as part of degree in a different subject (e.g. Sociology) or as part of a vocational inter-disciplinary degree (e.g. Business Studies). The potentials for differences in pedagogies between and within disciplines are considerable.

2.1. Methodology

We aimed to analyse two learning and teaching journals or resources from each discipline falling under each of the HEA four clusters. In some cases, where disciplines were new, or learning and teaching research was not publicly discussed, we sought alternative resources. The criteria for selecting journals are described in Appendix 1 and the journals and resources explored are in Appendix 2. Our primary focus was the UK but our sampling process led us to international journals when there were insufficient journals from the UK. Where there were no journals, or only one (as was the case for some disciplines), we consulted other resources such as professional association websites. The analysis included all of the articles that focused on learning and teaching between May 2015 and April 2016, and May 2010 and April 2011 in each of the sampled journals. We wanted to explore whether there were major, recent changes.

The rationale for focusing on discipline specific rather than generic teaching and learning journals was that the foci of the latter group are more likely to be driven by the concerns of those from education rather than those within the disciplines. The disciplines included are listed under the HEA cluster headings in Table 1.

Table 1: HEA disciplinary clusters			
Arts and Humanities	Health and Social Care	Social Sciences	STEM
Area Studies	Health	Anthropology	Biological Sciences
Art and Design	Medicine and Dentistry	Business and Management	Built Environment
Dance	Nursing and Midwifery	Economics	Computing
Drama	Social Work and Social Policy	Education	Earth and Environmental Sciences
English	Veterinary Medicine	Finance and Accounting	Engineering
History		Hospitality, Leisure, Sports and Tourism	Geography
Journalism		Law	Mathematics, Statistics and Operations Research

Languages		Islamic Studies	Physical Sciences
Linguistics		Marketing	Psychology
Media and Communications		Politics	
Music		Sociology	
Philosophical and Religious Studies			

As part of the analysis of the disciplinary literature and to frame the study as a whole, we also researched the UCAS website for the range of degrees pertaining to each of the disciplines.³ As would be expected, the disciplines were difficult to conceptualise without considering their internal variation. For example, academic courses in Art and Design may contain established disciplines such as Architecture or new areas of study such as Games Art and Design, they may be very academically (e.g. Fine Art) or vocationally focused (e.g. Commercial Art) and may combine quite scientific subjects, subjects in Business and Management or Humanities or Social Sciences. The different disciplines may be a combination of different forms of knowledge. Therefore, we mapped each of the disciplines using the following dimensions, marking two points on a continuum for each: academic and vocational; new and established; horizontal and vertical knowledge structures; and inter-disciplinary and singular.⁴ They were rated strong, medium or low in respect to both dimensions of each pair of classifications in order to cover their different configurations in different universities and degree programmes.

The academic and vocational aspect marked out the degree to which disciplines were focused on teaching academic or vocational knowledge. 'New' and 'established' relates to the degree to which disciplines were developing new programmes or were sticking to more traditional ones. Their inter-disciplinary engagement with other subjects or their singularity was also rated in a similar way. The degree to which the knowledge structure of the disciplines was based on theories that aimed to integrate existing theoretical perspectives (vertical knowledge structure) or based on the production of a range of competing theories (horizontal knowledge structures) was also assessed (Bernstein 2000). We counted the number of articles that seemed to be focused on undergraduate and postgraduate education. In addition, the range of pedagogic approaches that were discussed in the literature for each discipline were qualitatively analysed and compared, as were the

³ Also, where relevant university department websites were explored to get a sense of the variety of degrees at undergraduate and postgraduate level that were taught under each of the disciplines. However, the findings are not part of this report.

⁴ In the categorization of the disciplines as horizontal or vertical we drew upon Basil Bernstein's (2000) conceptual framework. Developments in vertical disciplines tend towards an integration of knowledge with new theories aspiring to incorporate or subsume those before them (e.g. as in *Physics*). Innovations in horizontal disciplines tend towards a greater proliferation of theories that describe or explain the same thing (e.g. as in *Sociology*).

concerns underpinning the research. The following sections describe our key conclusions from this process of analysis.

2.2. How is good teaching positioned by the research into teaching in the disciplines?

Grouping the disciplines into the HEA clusters has allowed an exploration of the commonalities and differences within the clusters with regard to how good teaching is conceptualised. This analysis links to the other aspects of the methodology in that it provided a framework of understanding that could be drawn upon to engage with deans who are responsible for clusters of disciplines that are usually put together because institutions perceive them to have something in common. There is some degree of overlap between the HEA clusters and university faculties, although some individual disciplines can be found in quite different faculties in different institutions.

The term 'pedagogic identity' is discussed by Bernstein (2000), who relayed a series of concepts that he associates to the acquisition of different types of knowledge in diverse kinds of institutions and, according to different historical, cultural, political and economic framings of the purpose of education. The four analytical categories (vocational to academic; inter-disciplinary to singular; new to established; horizontal to vertical knowledge) are helpful to understanding variation in terms of the disciplinary identities that students need to acquire. This affects how good teaching was represented and thought about in the research literature. The analytical categories also help to bring out how pedagogic strategies are developed in relation to the different pedagogic identities that students need to acquire in order to be successful at the universities they attend. For example, it helps to consider the way that some students might need to understand vocational or professional standards as well as the discipline. Or they might need to have insights into the knowledge, skills and dispositions associated with a combination of disciplines. Our study of the literature confirmed that the type of pedagogic identity that is aimed for seems to be a key to understanding how researchers in the disciplines perceive good teaching and the range of pedagogic concerns they address. Although, there are also contextual factors shaping this, such as academics trying to develop pedagogic strategies that are fit for dealing with increased student numbers or with students who are not primarily studying the disciplines they are teaching.

The increasing complexity of disciplines and their variation in terms of the four dimensions of difference may provide a way of understanding how various pedagogies are valued within different disciplinary and institutional contexts. The literature analysis led us to believe that for many of the disciplines in the HEA clusters there is some degree of distinctiveness and coherence in terms of shared pedagogic identities. However, there is also differentiation within clusters and some coherence across clusters. The literature we analysed suggested a high degree of vibrancy across

the disciplines and the HEA clusters in terms of researchers' efforts to develop interesting new teaching and learning strategies. They also explore their practices using a wide variety of methodological and analytical approaches. Qualitative and quantitative Social Science methodologies are the most popular in evaluating learning and teaching, and these are increasingly used across the clusters, although some favour other methodologies, such as showcasing good practice. Understandings of good teaching across all disciplines are considered in relation to how pedagogic practices support students to acquire disciplinary and/or inter-disciplinary knowledge and the sets of skills and dispositions associated with it, and the professional and personal identities they need to be effective. The range, balance, purpose and effectiveness of different pedagogic strategies should be evaluated with this in mind.

2.2.1 Classifying the disciplines

Within each cluster, the research literature relating to the disciplines (and the various degrees taught in their domains) reflected: (a) the mixed allegiances to the academic and vocational dimension; (b) whether they were discussing pedagogies in relation to courses based on new or established disciplines or sub-categories; (c) if they were taught in singular or inter-disciplinary contexts; and (d) whether they were horizontal or vertical knowledge structures. The judgements made were validated through discussion across the team. Table 2 reflects these variations across the Arts and Humanities cluster. The value of classifying the disciplines in this way becomes apparent when we discuss the diversity in the literature. Here, we describe some of the differences in Arts and Humanities as exemplary of the heuristic value of this approach. The classification diagrams for the other three disciplinary clusters form Appendix 3.

Area Studies, English, and History veer more towards the academic. Area Studies incorporates degrees that can study any geographical area but it tends to be studies of cultures, politics, histories, arts, geographies or languages, and they do not usually have a specific vocational focus beyond academic study (American Studies and Russian Studies would fall into this category). Art and Design incorporates both entirely academic programmes, such as theoretical or historical programmes studying fine art traditions, and courses such as architecture or practice-focused Fine Art. Dance was rated as strongly vocational because its programmes mainly focus on practice, and it is rarer to study dance solely on a theoretical or abstract basis. Some disciplines that are classified as 'low' with regard to being less vocational are, in practice, often paired with other subjects that have a more vocational focus. We have classified them as low where we have not detected a significant move towards making such studies integral to the discipline itself. For example, Hong *et al.* (2012) describe a situation in the US where arts practitioners are engaging with and transforming the notions of entrepreneurship found in business schools. And within the vocational, disciplines differ in the extent of their 'professionalisation' – whether professional

bodies control the content of courses and entrance to parts of the labour market. (Thus, in some parts of this report, we refer to distinctions between the 'vocational' and the 'professional'.)

Some disciplines are classified as low in terms of inter-disciplinarity because programmes are largely taught by specialists in the subject area, who are versed in disciplinary traditions and ways of thinking. English and History are the key examples here. Languages can be part of Area Studies (relating to literature, culture, etc.) and therefore more inter-disciplinary, but it is also taught in a strongly singular form. The vertical and horizontal aspects provide a means for thinking about the type of knowledge engaged with in different disciplinary in inter-disciplinary contexts. Students studying Architecture may be asked to develop ways of thinking associated with the sciences, whereby some theories, for example, on the engineering aspects of buildings, may be quite integrative and vertical. Students on other programmes (or even the same ones) may have to engage with Social Science knowledge (about how space is used) and artistic techniques.

Table 2: Analysis of Arts and Humanities on four selected dimensions								
	Vocational	Academic	New	Established	Inter-disciplinary	Singular	Vertical	Horizontal
Area Studies	Low	Strong	Medium	Strong	Strong	Low	Medium	Strong
Art and Design	Medium	Strong	Medium	Strong	Strong	Strong	Strong.	Medium
Dance	Strong	Low	Medium	Strong	Medium	Strong	Strong	Medium
Drama and Music	Strong	Strong	Medium	Strong	Medium	Strong	Strong	Medium
English	Low	Strong	Low	Strong	Low	Strong	Strong	Strong
History	Low	Strong	Low	Strong	Low	Strong	Medium	Strong
Journalism	Strong	Low	Low	Medium	Strong	Low	Medium	Strong
Languages	Medium	Medium	Low	High	Medium	Strong	Strong	Medium
Linguistics	Medium	Strong	Low	Strong	Strong	Medium	Strong	Medium
Media and Communication	Medium	Strong	Strong	Medium	Strong	Low	Medium	Strong
Philosophical and Religious Studies	Medium	Strong	Low	Strong	Strong	Low	Strong	Medium

The remainder of this analysis of the literature focuses on:

- (a) the range of pedagogic approaches that were apparent in the disciplines and the clusters and an analysis of key similarities and differences;
- (b) the concerns with learning and teaching that were addressed through the research;

- (c) the way in which the disciplines and clusters researched teaching and the way they evaluated it;
- (d) the type of pedagogic identities that the research articles claimed were being invoked.

We begin by describing the distinct pedagogic identities, as these are helpful in framing the subsequent discussion of what the research suggests constitutes good teaching, and how we recognise and evaluate it.

2.2.2 Developing disciplinary, professional and personal identities

All the disciplines aim to develop particular values, knowledges and ideals that come to constitute personal and professional identities. At this level there do seem to be characteristics that appear to unify many of the disciplines included in each of the HEA clusters and suggest something distinctive about each grouping. For example, Table 3 describes the set of dispositions associated with the Arts and Humanities cluster. The nearer the dispositions, personal and professional identities, academic practices and technical aspects are to the top the more often they appear in the research literature analysed. The literature in this cluster framed its research with the underlying assumption that the goal of teaching and student learning was for students to become creative and analytical thinkers and/or practitioners. Other disciplinary clusters did not emphasise creativity so much. For example, the dispositions associated with Health and Social Care (Table 6) tended to emphasise empathy and compassion more strongly (empathy was something that did feature – but less so – in Arts and Humanities). The Social Sciences cluster tended to emphasise the need for students to become ethical and engaged citizens with a concern for social, political and or economic, justice or development, whereas the STEM disciplines focused on developing students who addressed problems critically and analytically and who were focused on real-world issues. To some extent this characterising is biased by which disciplines tend to be the most researched and the issues that are currently gaining attention in the specific journal selected. For example, there may be disciplines that do not have researchers who are concerned with core aspects of that identity and who are publishing in the particular journals we explored.

Table 3: The identities associated with the disciplines in the Arts and Humanities cluster

Dispositions	Personal and professional identities	Academic practices	Technical aspects
Creative and analytical thinkers and/or practitioners	Writers, performers, artists, designers, historians, journalists, teachers, etc.	Writing/representing for different media (creative and analytical).	Competent skills (dancers, performers, musicians, writers, journalists, linguists, language teachers, etc.)
Faith, values, social and philosophical and moral positions (taking a position).	Capable of developing professional relationships across different fields.	Writing/representing for different audiences and contexts.	
Adaptable, flexible and practitioners (in changing world, across domains of practice e.g. outside theatres, for children, community historians)	Aware of how to develop a professional identity that is positioned in relation to appropriate fields (e.g. in different forms of dance) and the world.	Representing using different platforms (e.g. web-based, verbal).	
Open to inter-disciplinary and intercultural influence	To work across a variety of settings with people with different disciplinary and cultural perspectives and practices.	Research skills drawing upon a growing range of resources.	
Emotionally empathetic	Adaptable to rapid global change.	Capabilities in relation to the intellectual aspects of inter-cultural and inter-disciplinary collaboration.	
	Adaptable for portfolio careers.		

Disciplines relate to the different aspects, presented in the tables that are the focus of the research in journals and other disciplinary resources, to varying degrees. For example, in Arts and Humanities, languages are less often positioned as concerned with creativity and dance is less often seen as concerned with academic practices (although dance researchers are increasingly concerned with these). Sociologists in the Social Sciences may not need to be able to act on behalf of others, but they may learn knowledges that would imply they wish to do this. However, lawyers do have to be able to act on behalf of others unless they are studying the subject purely academically.

Table 4: The identities associated with the Health and Social Care cluster

Dispositions	Personal and professional identities	Academic practices	Technical aspects
Empathetic and compassionate	Doctors, dentists, health workers, nurses, midwives, social workers, vets and allied professions.	Demonstrating relevant academic knowledge through testing, writing and generating reports.	Practical skills in relevant fields.
Professional	Committed to professional standards and guidelines.	Demonstrating relevant knowledge and practice through simulated activities and exercises.	Skilled users of up to date technology.
Lifelong learners	Commitment to keeping up with up to date practice and knowledge.	Using research skills.	
Good communicators	Capable of developing professional relationships across different fields and nations.	Developing and demonstrating skills, competencies and knowledge's in work-based contexts.	
Concerned for social justice	Keen to develop effective interpersonal and advocacy skills (across diverse groups of patients/clients and cultures).	Demonstrating capabilities in relation to intercultural and inter-disciplinary collaboration.	
Flexible capable practitioners	Adaptable to diverse contexts.	Demonstrating ability to adjust knowledge and practise to changing contexts.	
Analytical and critical	Public intellectual/academic.	Critically analysing.	
Agents for change	Policy and practice analyst and critic.	Making recommendations for change.	

The identities described in the pedagogic research pertaining to the Health and Social Care disciplines (with the exception of Social Policy) are strongly influenced by their vocational orientation. However, in different universities there are different balances and foci. Some medical and veterinary degrees are more academic (medium) at undergraduate level. It is possible to study degrees relating to health and animal health that are mostly theoretical and classroom based. In addition, Sociology heavily emphasises student awareness of social inequalities and emotional understanding, whereas Finance and Accounting discussed emotional competency as a means to develop better professional relationships with clients. So if the students are not going to be practitioners, and they are studying the degrees as academic qualifications, they may not need some of the more practice-oriented aspects of the identities outlined in the tables.

There are some disciplines that fit their cluster less than others. In the Health and Social Care cluster Social Policy – which is an academic course in the UK (unlike Social Work which is allied to vocational training) – is a bit of an anomaly, as it does not have a direct field of practice. It means that the identities that pertain to this group – which are often shaped by things that are happening outside of universities and are of importance to the profession, the wider workforce, or society – apply less to this discipline. There is also variance within a discipline, depending on the institutional, departmental focus or departments can teach a range of degrees with different purposes and student bodies. For example, Education may focus almost exclusively on teacher training, or may involve learning through research into education. Where there is a lack of a strong single professional identity associated with the degree, identities are shaped by academic disciplines.

Table 5: The identities associated with the Social Sciences cluster			
Dispositions	Personal and professional identities	Academic practices	Technical aspects
Ethical and engaged citizens with a concern for social, political and or economic, justice or development	Accountants, lawyers, politicians, anthropologists, business people, economists, teachers, marketers, sociologists.	Adopters of the methods, perspectives and 'sensibilities' of their discipline. Can be more statistical/technical or analytically focused.	Effective users of relevant disciplinary/professional technologies.
Emotionally and socially competent	Well-rounded technical and personal skills.	Demonstrating academic and practice relevant knowledge through testing and writing.	Graduates with required practical skills.
Concerned to understand, contribute to and improve the wider community/world	Able to work to holistic professional standards.	Applying knowledge and competencies through practical exercises/projects.	
Sensitive to diversity, international cultures and inequalities	Keen to challenge status quo to make positive change.	Developing means of gathering and analysing evidence.	
Critical, sceptical and vigilant	Draws on theoretical knowledge to apply to real world problems.	Enhancing skills and knowledge in real-world contexts.	
Understanding of the self and of others	Capable of developing professional relationships across disciplines and cultures.	Supporting and leading teams or communities in collaborative work.	
Creative, imaginative and visionary			
Able/willing to help and act on behalf of others to achieve agreed goals			

The identities referred to in the research literature are shaped by the knowledges that students learn. Where these are single disciplines such as Mathematics, Physics, and Biology they share some concerns around teaching and learning. STEM, Psychology, Geography, and Earth and Environmental Sciences are also academic but they are more horizontal knowledges and they often combine with Social Sciences, which offer alternative lenses or descriptions and identities. When disciplines are newer, as in Environmental Sciences, concerns about teaching and learning focus more on content rather than pedagogical debates about learning and teaching. This need to establish shared understandings of relevant curriculum demonstrates how central knowledge is to understanding what good teaching is. Until the discipline is developed, there is no core identity around which to organise good pedagogy.

In the STEM subjects, the disciplines with practical focus are Engineering, Built Environment, Statistics and Operations, and Computing, and they are strongly vocational and inter-disciplinary and emphasise training professionals for work (that often leads to some form of professional recognition at some point). This results in external standards and partnerships being important to the identities underpinning notions of good teaching. The inter-disciplinary nature of most of these disciplines is also important.

Table 6: The identities associated with the STEM cluster			
Dispositions	Personal and professional identities	Academic practices	Technical aspects
Critical and Analytical	Mathematicians, Physicists, Biologists, Geographers, Psychologists, Engineers, Statisticians, Computer men, Architects, Environmentalists and allied professions.	Demonstrating relevant academic knowledge and skills through inquiry based learning activities.	
Concerned with real-world issues	Keen to contribute to the wider community/world.	Solving problems by applying their numerical, computational, analytical and technical skills, through real world simulated activities and exercises.	Able to carry out appropriate techniques safely and to standard.
Pragmatic	Commitment to keeping up with up to date practice and knowledge.	Developing practical skills associated with laboratory and field situations and including the ability to plan, implement, analyse and report investigations.	Practical skills in relevant fields.
Professional and highly skilled	Committed to professional standards and guidelines.	Developing and demonstrating skills,	Skilled users of up to date technology.

		competencies and knowledge through work placements, field work and industrial practice.	
Aware of the wider social and economic contexts	Familiar with the nature of business and enterprise in the creation of economic and social value.		
Scientific inquirer - questioning	Public intellectual/academic/researcher/scholar.	Critically analysing by using scientific inquiry skills and research skills in research-led projects.	
Good communicators and team players	Capable of developing professional relationships across different fields and nations.	Demonstrating personal and professional skills in both independent and team working.	
Concerned for sustainability and ethical issues	Keen to seek to achieve sustainable solutions to problems.	Demonstrating a critically informed understanding of socially constructed ways of representing and interpreting the world.	
Open to inter-disciplinary and intercultural influence	Keen to synthesise knowledge from diverse disciplinary perspectives and take part in intercultural and inter-disciplinary collaboration.	Demonstrating integrative skills through theme based inter-disciplinary problem solving activities/exercises.	
Adaptable/flexible/capable practitioners	Adaptable to diverse contexts.	Demonstrating ability to adjust knowledge and practice to changing contexts and overcoming difficulties by employing their skills, knowledge and understanding in a flexible manner.	

All the disciplines aim to develop particular values, knowledges and ideals that come to constitute academic, personal and professional identities, and which involve a well-rounded set of competencies (technical and social), as well as demonstration and application of knowledge. The emotional and moral aspects of students' development are considered important.

2.3. What are the concerns in the disciplines?

This section will map out the pedagogical concerns of the disciplines and that are addressed in the research literature analysed. They are summarised in Tables 7 to 10 below. The discussion conveys the way in which concerns are primarily shaped in relationship to the knowledge that is

being taught and learnt, which is core to the identities, dispositions and skills that are integral to students' success on these degrees.

In Arts and Humanities some issues cross disciplines, for example, student engagement and participation were researched in Art and Design, Philosophical and Religious Studies, History, and English. Although the form this took differed in each, research tended to focus on wanting to develop students who engaged in a deep and transformative way with the knowledges and practices they encountered: for example, Art and Design students who could tap into flow and be creative or who would engage more deeply with philosophical or religious values. At the other end of the spectrum, there was a concern with creating and validating ways of testing students for assessment and improvement in languages, media and communication, and linguistics. But acquiring skills was important to a diverse range of disciplines in this cluster. The pedagogies and contexts that would help students learn very specific skills and ways of understanding whether or not they have done this were relevant. Research acknowledged the need to send out competent practitioners who could work effectively with a range of disciplinary, local, national and international partners.

All disciplines appear to have concerns about their own position and relationship with the world around them, but some are seen as more clearly under threat than others: for example, as with Journalism and English as academic practice. Issues relating to fundamental changes in disciplines that may be struggling to transform and/or survive affect the aspects of pedagogy that are considered worthy of a research paper. For example, where a professional identity is threatened, as it is for journalists with the rise of digital media and the decline of print, there is anxiety regarding what will be the identities and skills required by future journalists.

Table 7: Pedagogic concerns of Arts and Humanities

Area Studies	Establishing and defining the (inter) discipline.	Journalism	The status of the profession. Changes due to digital media and decline of print.
Art and Design	Interface with fast changing society, technology and need for inter-disciplinarity.	Languages	More concerned with students' capabilities and mechanics of learning languages.
Dance	The importance of aesthetic values. The interface between dance and global schemas, inter-disciplinary contexts and varied performance and professional spaces.	Linguistics	The role of the discipline and academics in the discipline. The cross-disciplinary role of teachers of English academic practice (EAP).
Drama and Music	Theory, research and practice interface. The importance of aesthetic values. The interface between music and drama, global schemas, inter-disciplinary contexts and varied performance and professional spaces. The position and value of Drama and Music education. Need for innovation.	Media and Communications	Changing nature of texts. Changing in response to globalisation and societal change.
English	The discipline in complex linguistic contexts (trans-linguism). Subjectivity and writing.	Philosophical and Religious Studies	Tension academia and faith. Changes needed in response to multicultural/multi-faith societies.
History	Changing nature and extent of historical information.		

Much of the research in Arts and Humanities was concerned with how pedagogy and curricula needed to respond to a fast-changing world. Some of these changes were technological, for example, being able to work with and access different media and having the skills and resources to be able to work in multi-media contexts. Others were about the complexity that arises with globalisation and multiculturalism. For example, trans-linguism in English, and the need for Dance and Music and Drama graduates to be able to work with colleagues from different disciplines (e.g. other arts or perhaps in community groups or industry). For scholars of religion, the need to be able to work in and understand inter-faith contexts was important for researchers in the field and, for music scholars, the need to be able to work with different schema (for example, music theory and practice from non-classical cultures). Across the clusters there was some research focusing on working in increasingly international contexts, but artistic practices face very different challenges to health professionals – although arguably they could learn some things from one another.

Table 8: Pedagogic concerns of Health and Social Care

<p>Health</p>	<p>Professionalism and inter-professionalism. Ability to meet changes (global, diverse populations, technological change, social and economic changes). Validity and reliability of assessments. Clinical competence.</p>	<p>Social Work and Social Policy</p>	<p>Student and faculty experiences of diversity/inequality. The role of education, educators, disciplines, curricula and institutions in addressing issues of social justice and inequality in social work practice and in academia. The practical skills and knowledge of social workers. Research skills and links with theory and practice.</p>
<p>Nursing and Midwifery</p>	<p>Standards and the quality of care. Reliability of assessments of students' performance. Inequality of patients' treatment and staff in the profession.</p>	<p>Veterinary</p>	<p>Sustainability of the discipline. Standards and the quality of care. New techniques One health initiative (initiative that unites much of this cluster globally).</p>
<p>Medicine and Dentistry</p>	<p>Clinical competence (skills and knowledge). Sustainability of the discipline. Inter-professionalism and professionalism. Changing context needs and demands (especially increasing privatised provision, mal practice and institutional failure). Inequality of patients' treatment and staff in the profession. Patient and public centeredness (involvement).</p>		

The concerns of Health and Social Care were primarily driven by the need to train practitioners who could operate in fast-changing, multi-cultural, mixed practitioner environments. The need to respond to clients and to work with the variety of people (other professionals and communities) in national and international settings in respectful and communicative ways is paramount. In all of these disciplines there was a real concern with how to judge or measure competence. As will be seen below, much literature was concerned with how to model these complex contexts for students and the research discussed how to develop effective pedagogies and technologies for doing this. There were some disciplines, such as Dentistry and Veterinary Medicine that were concerned with the sustainability of their disciplines. There were also a considerable number of research papers concerned with equality and social justice for medical staff and patients. As the disciplines in this cluster focused on professional contexts, issues tended to be overlapping, for example, in questions such as 'How can competence be assessed in ways that cross cultures?' and, 'How can standards of continuous training be made sufficient to deal with constant change?'

Whereas Health and Social Care has many overlapping concerns, it is more difficult to find patterns across Social Science disciplines in terms of the underlying pedagogical problems that are being researched in the literature analysed. Some issues cut across disciplines, for example, the need to

change beliefs and attitudes, such as developing students understanding of and concern with social justice, was important. However, in some disciplines being prepared for employment, up-to-date skills and knowledge, and improving performance were of core concern. As can be seen below (and in section 2.4 mapping the range of pedagogical strategies and approaches), much of the research in Social Science was concerned with how to teach students effectively in a wide variety of contexts, with slightly different aims – from improving students’ academic learning, to producing graduates with the skills and knowledge for suitable employment, and even developing students’ capacity to positively engage with society. Teaching in the Social Sciences thus means teaching students complex theories and concepts; matching the skills required for an evolving professional landscape; incorporating fast-paced changes in technology; engaging with often deeply personal beliefs, values and motivations; and directing those efforts for positive change in an internationalising world. The diversity of potential careers for students makes this complex in disciplines without a clear career path, but in practice many students on vocational programmes end up in different careers. Consequently, all degrees have to take the wider set of skills and knowledges that graduates might need into account.

Table 9: Pedagogic concerns of Social Sciences			
Finance and Accounting	Designing assessments that improve learning. Need to impart social responsibility and ethical awareness.	Sociology	Increasing student engagement. Changing students’ beliefs and attitudes around social issues.
Politics	Internationalisation of the curriculum. Evaluating the contribution of certain pedagogies or technologies to learning.	Business and Management	Preparing students with the skills for careers and the future. Role of the discipline in economic change and social justice.
Anthropology	Framing the discussion of larger societal issues.	Economics	Isolating the determinants of students’ academic performance.
Education	Developing students’ identities as teachers. Pressure to improve performance.	Hospitality, Leisure, Sports and Tourism (HLST)	Need to remain relevant to vocational needs.
Marketing	Difficulties with teaching social media. Preparing students with skills for modern industry. Increasing student engagement.	Law	Preparing and employing students as lawyers. Including new aspects of law in the curriculum. Engaging with the wider public/community.

Some Social Science degrees, such as Accounting and Finance, have a much clearer vocational focus and in these cases professional priorities dominate. However, Finance is a relatively new discipline and some of the literature focuses on establishing what the curriculum should look like.

Table 10: Pedagogic concerns of STEM disciplines

<p>Biological Sciences</p>	<p>Low-level retention of basic concepts among entrants. Faculty commitment to motivate change. Introductory science curriculum changes.</p>	<p>Built Environment</p>	<p>Sustainability education. Sustaining studio education. Critical thinking. Inter-disciplinary education. Effective feedback mechanisms.</p>
<p>Computing</p>	<p>Distant notion of employability. Low retention and high dropout rate. Student attitude and the issue of communication. Designing game is challenging. Gender issues.</p>	<p>Earth and Environmental Sciences</p>	<p>Sustainability pedagogy. Lack of environmental consciousness. Issues of sustainability of discipline.</p>
<p>Geography</p>	<p>Digital divide. Data analysis and modelling abilities. General lack of visual literacy. Mismatch of expectation in host country during field work. Fieldwork challenging. Language barriers in international collaborative programmes. Gender issues. GIS technology. Environmental education settings.</p>	<p>Engineering</p>	<p>Meeting the needs of industry. Strive to retain students and prepare them for engineering careers. Lack of motivation and wider skills mix. Pressure of research. Problem-solving skills. Entrepreneurship programmes Dissatisfaction about assessments. Success gender and ethnicity. Internationalisation of curriculum.</p>
<p>Mathematics</p>	<p>Mathematical preparedness. Inquiry based education. Slow technology integration. Methodological challenges in measuring instructional quality.</p>	<p>Statistics and Operations Research</p>	<p>Student motivation. Statistical competence. Move to inquiry based learning.</p>
<p>Physical Sciences</p>	<p>Lack of teaching skills for IBL. Strict curricula. Understanding complex physical concepts. Challenge of distance course. Gender related issue: male students outperformed females.</p>	<p>Psychology</p>	<p>Professional preparedness. Struggle to identify the essential information in empirical articles. Low motivation among students. Critical thinking. Limited research opportunities.</p>

As can be seen from the above, the research in STEM was underpinned by wide-ranging concerns. Some of were related to students, for example, their lack of motivation and the knowledge and skills gaps of entry level students were expressed in several disciplines. Gender issues were explicit in Computing, Geography and Engineering. Student motivation, students’ skill sets, and

preparedness for study were also important. In Psychology, critical thinking and opportunities to do research were issues. Pedagogical issues were also important in some disciplines, for example, the need for more inquiry based approaches. The professional preparedness of students was a pressing issue for Psychology, and meeting the needs of industry for Engineering. Others were about the complexity that arises with globalisation and multi-culturalism and or new technologies in the disciplines or as pedagogical devices.

Overall, this section demonstrates the complexity of concerns. They are clearly related to knowledge, future professional careers, and the identities that students need to acquire. However, they are also complex and not always easy to grasp because the disciplines themselves are transforming and responding to multi-faceted environments that include employers' and students' needs, and the constantly changing and evolving worlds of employment and higher education to which they are responding.

2.4. What are the balance and range of disciplinary pedagogies?

The balance and range of different pedagogic issues, approaches and strategies varied across disciplines, but there were similarities in themes that could be identified, as can be seen from tables 11 to 14 below. The research literature reveals a vibrant pedagogic research culture in many disciplines. Much literature was concerned with how to model complex real-world contexts (scenarios and spaces) for students. Non-technological approaches included problem solving (which featured across all of the disciplinary clusters), those that involved spaces where real life would provide contexts for learning, for example, trips abroad, theatre-based projects, the use of real animals in veterinary subjects, and the casebook method for law. In addition, there is a range of virtual simulations discussed in the literature. In the Arts and Humanities they can be very technically focused as in language learning, or they might focus on developing digital writing skills for journalists. In Health and Social Care they simulate medical contexts, for example, aspects of the body or systems so that students can practice techniques such as in dentistry, medical procedures or veterinary techniques without risk to patients. They can also access environments or cases that they would not be able to in real life.

Some research on learning technologies is more pedagogically focused. For example, there is research into the value of using lecture clickers for learning, and for technological forms of assessment and experiments with online feedback in visual and aural form. In addition, there is research which focuses on how to develop students' technological expertise for the range of different contexts in which they will be required to use them. In the Arts and Humanities (e.g. digital media or history resources); Social Sciences (e.g. research technologies or accounting

software); in STEM, statistical and scientific software; and in Health and Social Sciences there are a host of administrative, research and medical technologies at which they need to become expert.

Across the clusters, there is also research into work-based learning. In the Arts this might involve working with clients or creating small media businesses within universities such as news media or radio. In Social Sciences this can involve law clinics, or working in communities (also known as service learning). In STEM subjects it might revolve around industry placements (e.g. in Computing, or Engineering). In relation to Health and Social Care it might involve extended placements as a health worker or social worker. However, the relevance of such pedagogies varies according to the vocational or academic focus of the programme. The degree to which it relates to the knowledge of singular or inter-disciplinary degrees and the structure of the knowledge learnt at university and how this shapes its concerns is relevant here. For example, disciplines that are concerned with how to ensure that students have sufficient basic knowledge and understanding on entry to a degree use technologies to ensure that this happens. Disciplines that are concerned with enabling life-long learners, who can always be up to date, might be more concerned with Multimedia Online Open access Courses (MOOCs) to ensure professional competence across a sector. Consequently, the knowledge and its use shape the pedagogic concerns and the nature of research in the field, at least to some degree. All of the disciplinary clusters are also concerned with techniques for learning. In three of the clusters, group-based learning is of particular significance. In the STEM cluster (see Table 14) inquiry based learning was particularly well researched and seemed to be a concern for the discipline. In Social Science there was a focus on learning the difficult theoretical knowledge (see Table 13).

Table 11: The range of pedagogic approaches discussed in the Arts and Humanities literature
<p>Arts and Humanities</p>
<p>Examples of teaching techniques engaging with complex real-life scenarios and spaces:</p> <p>Problem solving (Philosophical and Religious Studies, History); Study abroad (History, Dance); Site visits (History); Case studies (Media and Communication); Simulations (Media and Communications); Role Playing (Media and Communications); Excursions (Media and Communications); Site specific theatre (Drama and Music); Theatrical experiments (Drama and Music); Live work (Drama and Music) Theatre workshops (Drama and Music).</p>
<p>Examples of the use of learning technologies:</p> <p>Computer assisted language learning (Languages); Blog posts (Art and Design); Web content management system (Art and Design); Collaborative argument visualisation software (Philosophical and Religious Studies); Primary data sources (History); Music (History); Lecture clickers (History); Mobile devices (Media and Communication); Online platforms (Drama and Music. English); Digital writing (English); Online interface (English); Developing students’ use of technologies (Journalism).</p>

<p>Examples of developing real-life skills through work-based experiences:</p> <p>Working with real clients (Art and Design, Media and Communication); Service learning (Philosophical and Religious Studies); Running real media (Journalism).</p> <p>Group-based learning:</p> <p>Joint construction (Languages); Peer feedback/learning (Languages, Philosophical and Religious Studies); Academic discussion (Languages, Philosophical and Religious Studies, Media and Communications); Inter-disciplinary collaborative learning (Art and Design, Drama and Music, Dance); Integrating different year groups (Art and Design); Studio critiquing process (Art and Design); Studio project (Art and Design); Cross-cultural collaboration (Art and Design, Drama and Music); Discerning voices (Philosophical and Religious Studies); Presentations (History); Group work (History); Biographical presentation (History); Team-based learning (Media and Communication); Group research projects (Media and Communication) Performance projects (Drama and Music); Communities of practice (Media and Communications).</p>
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Table 12: The range of pedagogic approaches discussed in the Health and Social Care literature

<p>Health and Social Care</p>
<p>Examples of real world scenarios:</p> <p>Clinical teaching and assessment (Veterinary); Use of real animals (Veterinary); Case studies (Veterinary, (Medicine and Dentistry); Problem based (Veterinary Medicine and Dentistry); Simulation of work environments and contexts (Medicine and Dentistry, Nursing); Unfolding case study (Nursing); Study abroad (Nursing); Student run clinic (Health); Community based study abroad (Social Policy, Social Work).</p>
<p>Examples of learning technologies:</p> <p>Virtual microscopy using digital slides (Veterinary); Simulation (Computerised) (Veterinary); Laparoscopic training models (tablets or box) (Veterinary); e-Portfolios (Medicine and Dentistry); Apps (Medicine and Dentistry); Phones (Medicine and Dentistry); Social media (Medicine and Dentistry); Virtual classroom (Medicine and Dentistry); Digital learning object (Medicine and Dentistry); Digital learning tool (teeth) (Medicine and Dentistry); Scenario-based learning software (Medicine and Dentistry); Computer-based didactic approach (Medicine and Dentistry); Web-based multisource feedback for teachers (Medicine and Dentistry); Online voiceover lectures (Medicine and Dentistry); Blended learning (Medicine and Dentistry); Narrative pedagogy – a layered technology enhanced approach (Nursing); Interactive peer-assisted learning (Nursing); Identifying online errors (Nursing); Gaming pharmacology ‘go-fish’ (Nursing); Enhancing lifelong learning partnerships via technology (Nursing); pre-class mobile exercise (Nursing).</p>
<p>Work-based learning:</p> <p>Clinical learning and assessment (Medicine and Dentistry, Nursing); Hospital, community, rural placements (Medicine and Dentistry); Student internship (Medicine and Dentistry); Multi-disciplinary meetings (Medicine and Dentistry); Students in ward-based teams (Medicine and Dentistry); Beside teaching (Medicine and Dentistry); Work-based assessment (Medicine and Dentistry); Objective structured clinical exam (Nursing); Evidence-based practice questionnaires (Nursing); Leadership development module for underrepresented groups in practice (Nursing).</p>
<p>Techniques or learning:</p> <p>Practical laboratories (Veterinary,); Instructional videos (Veterinary,); Lecture (Veterinary,); Flipped classroom (Medicine and Dentistry, Nursing); Competency based</p>

(Medicine and Dentistry); **Blended learning** (Medicine and Dentistry); **Arts-based teaching** (Medicine and Dentistry, Nursing); **Game** (Medicine and Dentistry); **Student-centred learning** (Medicine and Dentistry); **Focused teaching intervention** (Medicine and Dentistry); **Presentations** (Medicine and Dentistry); **Error-focused check-list** (Medicine and Dentistry); **Demonstrations** (Medicine and Dentistry); **Workshop** (Medicine and Dentistry); **Four component instructional design model** (Medicine and Dentistry); **Meta-learning strategies** (Nursing); **Discussions** (Nursing); **Reflective practice flashcards** (Nursing); **Critical reflective practice** (Nursing, Medicine, Dentistry, Health, Social Policy); **Mental rehearsal strategy** (Nursing); **Active learning** (Nursing); **Guided reflection** (Nursing); **Six-hats thinking method** (Nursing); **Knowledge tree** (Nursing); **Visual narrative illustration** (Nursing); **Anthropological dig** (Nursing).

Table 13: The range of pedagogic approaches discussed in the Social Sciences literature

Social Sciences

Examples of teaching techniques to impart or discuss difficult academic topics:

Quantitative methods (Accounting); **Research** (Law, Accounting, Politics, Business and Management, Economics, Education, Sociology); **Concept mapping** (Accounting, Politics); **Documentary film** (Accounting, Law); **Lecture** (Law, Accounting, Politics, Economics, Education, HSLT, Sociology, Marketing); **Socratic approach** (Law); **Reflection** (Accounting, Education, Sociology); **Study abroad** (Accounting, Politics, Anthropology, Education, Sociology); **Explanatory frameworks** (Accounting); **Constructed response questions** (Accounting, Economics); **Concept application** (Law); **Capstone course** (Accounting, Marketing); **Bloggng** (Politics, Marketing); **Student-led projects** (Politics); **Game** (Politics, Economics, HSLT); **Readings** (Politics, Sociology, Marketing); **Pedagogy of possibility** (Anthropology); **Exposing other perspectives** (Anthropology); **Explanation** (Anthropology); **Reflexive learning** (Business and Management); **Visualisation** (Economics); **Review papers** (Economics); **Homework** (Economics); **Analogies/metaphors** (Economics, Education); **Demonstrations** (Economics); **Practice problems** (Economics); **Creative art** (Economics); **Writing op-ed** (Economics); **Case method instruction** (Education); **Didactic training** (Education); **Inquiry-based learning** (Education); **Teacher effectiveness maps** (Education); **Decision-making tasks** (HSLT); **Connecting observation with concepts** (Sociology); **Literary fiction** (Sociology); **Students as teachers** (Sociology); **Web analytics** (Marketing); **Photography** (Marketing); **Integrating communications** (Marketing).

Examples of real world scenarios:

Casebook method (Law); **Case studies** (Law, Accounting, Education, Sociology); **Court project** (Law); **Simulations** (Law, Accounting, Politics, Business and Management, Economics, HSLT, Sociology); **Role playing** (Law, Accounting, Politics, Economics); **Fraud judgements** (Accounting); **Writing mini-cases** (Accounting); **Client interaction** (Accounting, Marketing); **Ethical scenarios** (Law, Accounting, Economics); **Mock elections** (Politics); **MUN/MEU** (Politics); **Citizen's assembly** (Politics); **Community/client projects** (Politics, Marketing); **Site visits** (Politics); **Fieldwork** (Politics, Anthropology, Education, Sociology); **Ethnographic field school** (Anthropology); **Experiential learning** (Business and Management, Sociology); **Workshops** (Business and Management, HSLT); **Policy challenge** (Economics); **Practice-based learning** (Education); **Scenario planning** (HSLT); **Global village experience** (Sociology); **Testing consumer reactions** (Marketing).

Examples of developing skills and simulating complex contexts through learning technologies:

Digital books (Law); **Virtual worlds** (e.g. 2nd life) (Accounting); **e-Business education**

(Accounting); **Diagnostic tools** (Politics); **MOOCs** (Politics); **STELLA software** (Economics); **Podcasts** (Economics); **Teaching apps** (Economics); **Social media** (Economics, Education, HSLT, Marketing); **Multi-modality** (Education); **Smart devices** (Education, HSLT); **Asynchronous learning** (Marketing); **e-Retailing** (Marketing).

Examples of developing real-life skills through work-based experiences:

Fellowship programmes (Law); **Law clinic** (Law); **Supervised work training** (Accounting); **Partnership with external organisations** (Accounting); **Internship** (Politics, Business and Management); **Service learning** (Politics, Sociology); **Teaching practicum** (Education); **Teaching hotels** (HSLT); **Professional community** (Marketing).

Group based learning:

Co-operative learning (Law, HSLT); **Discussion** (Law, Accounting, Politics, Economics, Education, Sociology); **Debate** (Accounting, HSLT, Sociology); **Dialogical encounters** (Politics); **Learning community** (Law); **Peer learning** (Politics, Business and Management, Education, Sociology); **Working groups** (Anthropology); **Dialogue** (Business and Management); **Competition** (Business and Management, Economics); **Team teaching** (Education); **Industry/community co-operation** (HSLT, Marketing); **Peer teaching** (HSLT); **Community-based learning** (Sociology); **Social networking** (Marketing); **Team project** (Marketing).

Table 14: The range of pedagogic approaches discussed in the STEM literature

STEM

Examples of real-life scenarios and spaces:

Problem solving (Engineering, Maths, Physics, Built Environment and Biology); **Project-based learning** (Engineering and Computing); **Experiential learning** (Physics, Geography, Engineering and Earth and Environmental sciences); **Study abroad** (Geography and Psychology); **Outdoor learning and field based learning** (Geography and Earth and Environmental sciences); **Case-based or evidence-based learning** (Biological sciences and Engineering); **Entrepreneurial learning** (Engineering); **Community based learning and service learning** (Geography, Engineering and Computing); **Work-based learning/work placement** (Geography and Engineering); **Studio-based learning** (Built Environment); **Live project work** (Built Environment) **Simulations** (Biology, Engineering, Psychology and Computing); **Participatory action research learning/inter-disciplinary research experience/volunteering as a research participant** (Geography, Engineering and Psychology); **Role playing** (Psychology and Geography); **Internship practicum/embedded service-learning internship** (Psychology).

Examples of developing skills and simulating complex contexts through learning technologies:

Computer/web-based simulations (Physics, Statistics, Computing and Engineering); **Discipline-specific software** (Physics, Maths, Biology, Geography, Statistics and Computing); **Open education resource** (Maths, Physics, Biology, Geography, Statistics and Engineering); **Multimedia learning/content acquisition podcasts (CAPs)** (Physics, Geography and Psychology); **Animation/video annotation software application** (Physics, Biology, Psychology, and Geography); **3D visualization/3D geo-visualization** (Built Environment, Biology, and Geography); **Mobile learning application/I-pads** (Biology and Geography); **Flipped classroom** (Biology, Engineering, and Psychology); **Video-learning/videography/video games** (Biology, Geography and Engineering); **Virtual lab** (Geography and Engineering); **Games/gamification tool** (Computing and Engineering),

Networked system of handhelds (Maths); **Robotics** (Engineering); **Online pre-lab quizzes** (Biology); **Feedback techniques – oriented online tools** (Biology); **Virtual field trip** (Geography); **Film production/movie** (Geography and Psychology); **Open source python approach** (Geography); **Apparatus** (Physics); **Virtual classrooms** (Psychology); **Audacity computer software** (Psychology); **Student response systems (SRSs)** (Psychology); **Mechanical Turk (MTurk)** (Psychology); **Mnemonic devices** (Psychology); **Clickers** (Maths, Physics, Biology, and Psychology); **Media-based variations of research methods lab exercises** (Psychology); **Spreadsheet software/automatically graded spreadsheets** (Psychology and Statistics); **Interactive 3-D brain app** (Psychology); **Electroencephalography (EEG) technology** (Psychology); **Virtual construction models (VCMs)** (Built Environment); **Structural analysis software based on nonlinear dynamic structural theory** (Built Environment).

Group based learning seems to be considered as important to these new complex contexts and these are examples of group learning techniques that have been researched over the last year in the journals:

Co-operative/collaborative learning (Maths, Geography and Computing); **Peer learning, peer support, group facilitation, peer mentoring** (all STEM disciplines); **Group project/collaborative projects** (Engineering, Built Environment and Computing); **Inter-disciplinary collaborative learning** (Art and Design, Drama and Music, Dance); **Small-group discussions/small-group work** (Maths, Psychology, Computing, and Earth and Environmental sciences); **Pair programming software development technique** (Computing); **Studio project** (Built Environment); **Peer-mediated learning models** (Computing); **Cross-institution collaborative teaching and learning** (Geography); **Group assessment** (Geography); **Multi-university collaboration to develop portable and adaptable online course content** (Engineering); **Team-based analysis project** (Engineering).

Inquiry based science education is an emerging trend in STEM and these are examples of pedagogical approaches to support IBL:

Inquiry-based learning (Maths, Physics and Biology and Engineering); **Research-based learning** (Maths, Physics and Biology); **Open inquiry (OI)-based teaching/learning** (Physics); **Process oriented guided inquiry learning (POGiL)** (Engineering); **Experiment-based learning** (Engineering and Biology); **Realistic data and research examples into quantitative courses** (Psychology); **Laboratory based approach** (Psychology); **Inter-disciplinary research-based learning** (Engineering); **Science writing heuristic (SWH)** (Maths, Physics and Biology).

Another common theme in the pedagogical research across clusters was a focus on group-based learning. However, there were also distinctive trends, such as the growth in popularity of inquiry based learning in STEM programmes, and the issue of teaching difficult subjects in the Social Sciences. In Health and Social Care, which had the greatest number of articles published per journal, there was a lot of research that focused on innovative techniques for learning.

The analysis carried out for this section of the report made it apparent that there are particular pedagogic concerns that have dominated the literature: scenario or real-world based learning; computer technology for simulation (as a learning technology); technology as something that needs to be mastered for potential employment contexts. The importance of work-based or context-based learning. In addition, there are concerns about learning that are addressed by

different pedagogic techniques. However, organising the issues researched in the literature presents the danger of over-simplifying things, as these broad themes represent attempts to tackle very different pedagogical problems and they can only really be understood in the context of developing the varied identities associated with the disciplines and described in earlier sections. The literature review was very important in heightening our awareness of the complexity of the situation.

2.5. How is good teaching evaluated?

In considering how good teaching is framed within the disciplines, it is important to understand both the range of methodologies and the range of theoretical framings that are used. In this section, the range of methodologies used to evaluate good teaching by academics will be evaluated and discussed. Below, the range of methodologies that have been found, and will inform that discussion, are presented. A list of theoretical concepts used in each of the disciplines was also generated and analysed.

Fundamentally, the analysis demonstrates a mixture of disciplinary specificity and the more generic use of Social-Science-driven methodologies and theorisations. As only two years of research has been analysed (and in some cases the number of articles or resources used are quite small), the absence of a reference to a method in the analysis does not confirm that it is not used. The main factors that are apparent from these sketches of the literature is that a good range of qualitative and quantitative and experimental approaches are apparent across the disciplines. However, there are inflections that constitute slight differences that may characterise the disciplinary clusters. For example, the researcher was rarely reflecting on their own teaching or pedagogic practice in pedagogic research publications in the Social Sciences (only Accounting and Finance) or in Health and Social Care. This may be a flaw in the literature researched, as narrative and reflective research is an important part of Social Sciences and Health and Social Care research. However, it was used quite consistently in Arts and Humanities and particularly in STEM research, which is what we might expect given that they have less of a history of using their own disciplinary research methods to explore pedagogy. Student data was used to investigate teaching in all disciplines, and it underpinned discussions, conceptions, and measures of good teaching but this could be variable in its scope and methodology. Literature reviews were more sparsely used.

Mixed methods research was used most consistently in Social Sciences, which concurs with a trend for such methodologies in that area. Tables 15 to 18 present the range of evaluation methods for each disciplinary cluster.

Table 15: Arts and Humanities research, analysis and evaluation methods

Arts and Humanities	
Main code	Examples
Own teaching practice or teacher perceptions	Educator suggestions (Philosophical and Religious Studies); Educator reflections (Philosophical and Religious Studies, History, Drama and Music) Teacher observations (History) Argumentative essay (Media and Communications, English); Survey of teachers (Media and Communications); Oral accounts (Media and Communications);
Literature based	Review (Art and Design, English)
Student	Reflective journals (Languages); <i>Class discussion</i> (Languages); Presentation (Languages); Tests (Languages); Confidence ratings (Languages); Feedback (Art and Design); Observations (Art and Design); Performance (Philosophical and Religious Studies, Media and Communication, English); Satisfaction/evaluation (Philosophical and Religious Studies, History), Self-rated performance (History, Media and Communications); Retention (History); Participation (Media and Communications); Accounts (English) Writing (English)
Qualitative methods	Qualitative analysis (Languages, Media and Communications, Drama and Music, Dance); Interviews (Languages, Art and Design, Media and Communications, Drama and Music, Dance); Video analysis (Languages, Art and Design); Conversation simulations (Languages); Ethnography (Media and Communications, English); Textual analysis (Media and Communications)
Quantitative methods	Statistical analysis of relatedness or covariance (Languages); Questionnaires (Languages, Art and Design, Drama and Music); Content analysis (Media and Communication)
Experimental	Pre-test and post-test with intervention (Languages, Art and Design, Media and Communication); Experiment (Languages, Philosophical and Religious Studies)
Mixed methods	Case study (Languages, Art and Design, Philosophical and Religious Studies, Media and Communication, English); Action research (Languages, Art and Design, Drama and Music)
Curricula	Practices of graduates to inform curricula (Media and Communication); Reviewing curricula (Dance)

Table 16: Health and Social Care research, analysis and evaluation methods

Health and Social Care	
Main code	Examples
Literature based	Scoping exploratory literature review (Medicine and Dentistry, Nursing); Systematic Review (Medicine and Dentistry, Nursing)
Student	Performance (Veterinary, Medicine and Dentistry, Nursing); Evaluation (Medicine and Dentistry, Survey); Assessed work (Nursing); Vignettes and discussions (Nursing)
Qualitative methods	Semi-structured interviews (Veterinary, Medicine and Dentistry, Nursing); Focus groups (students and instructors) (Veterinary, Medicine and Dentistry); Observation (Medicine and Dentistry, Nursing); Narrative (Medicine and Dentistry); Auto-ethnography (Medicine and Dentistry); Analysis student feedback (Medicine and Dentistry); Guided walk (Medicine and Dentistry); Analysis student essays (Medicine and Dentistry); Critical discourse analysis (Medicine and Dentistry); Language pattern analysis (Medicine and Dentistry);
Quantitative methods	Survey/questionnaire (Veterinary, Medicine and Dentistry, Nursing); Statistical analysis of tests (Medicine and Dentistry); Spiritual care needs inventory (Nursing); Multi-variate analysis (Nursing)
Experimental	Quasi-experimental (Veterinary, Medicine and Dentistry, Nursing); RCT (Medicine and Dentistry)
Mixed Methods	Comparative (Veterinary); Pre-admissions test, qualitative interview, student performance, clinical competencies (Veterinary); Analysis of students background and scoring in test (Veterinary); Case study (Veterinary, Medicine and Dentistry, Nursing); Simulation intervention and survey (Medicine and Dentistry); Interview and guided walk (Medicine and Dentistry); Log books and semi-structured interviews (Medicine and Dentistry); Complex quantitative methods for assessment tool evaluations (Nursing); A range of mixed qualitative and quantitative designs (Nursing)
Curricula	Analysis of programme specs (Nursing)
Employer/clients	Survey of clients (Veterinary)
Wider academic	Survey of deans (Veterinary)

Table 17: Social Science research, analysis and evaluation methods

Social Science	
Main code	Examples
Own teaching practice	Reflections (Law, Accounting)
Literature based	Reviews (Law, Accounting);
Student	Responses (Law, Accounting); Involvement (Law); Perceptions (Accounting) Performance (short-term and/or sustained) (Accounting); Comparison students and experts (Accounting); Evaluations (Accounting); Self-reported learning (Accounting); Employability (Accounting)
Qualitative methods	Focus group (Law); Phenomenological (Accounting); Interviews (Accounting); Teacher experiences (Accounting); Action research (Accounting); Content analysis (Accounting); Moderation analysis (Accounting); Perceptions of teaching exemplars (Accounting); Reflective observation (Accounting)
Quantitative methods	Survey/questionnaires (Law, Accounting); Regression analysis (Accounting); Cluster analysis (Accounting)
Experimental	Pre-test and post-test (Accounting); Quasi-experimental (Accounting); Classroom experiment (Accounting); Intervention (Accounting)
Mixed methods	Comparative (Accounting); Case study (Accounting)
Curricula	Analysis (Accounting)
Employer	Employer perspectives (Accounting)
Development of resources	Assessment tools (Accounting)

Table 18: STEM research, analysis and evaluation methods	
Social Science	
Main code	Examples
Own teaching practice or teacher perceptions	An explanatory model of phenomena observed by teachers (Maths); Scoring teachers' written analyses of classroom video clips (Maths); Instructor attitude surveys (Physics); Instructor self-ratings and student-ratings (Psychology); Video diary reflection (Geography)
Literature based	Review (Maths, Biology, Engineering, Built Environment); Research reports (Psychology); Scoping study (Computing); Expository and empirical literature review (Statistics)
Student	Student attitude surveys (Physics); Student surveys (Engineering, Statistics); Student evaluations of teaching (Psychology); student evaluation of module (Engineering); Student feedback through online questionnaires, focus groups, classroom-based observation and interviews (Engineering)
Qualitative methods	Qualitative analysis (Maths, Physics, Biology, Geography); An instrumental approach, which focuses on the interactions between students, teachers, and artefacts (Maths); Classroom-based study (Maths); Interviews (Maths, Physics, Engineering, Built Environment, Statistics); Semi-structured qualitative interviews (Geography); Ethnographic interviews (Computing); Analysis of dialogue (Maths, Physics); Examining classroom discourse (Maths); Rapport between students and teachers (Psychology); Participatory techniques (Engineering); Qualitative analysis of journals (Engineering); Ethnographic approach (Built environment); Qualitative empirical study (Computing); Duo-ethnographic approach (Earth and Environment)
Quantitative methods	Quantitative analysis (Physics, Statistics); Survey (Psychology; Geography, Built Environment; Computing; Earth and Environment, Statistics); Statistical testing using the t-test (Physics); Cross-sectional survey (Biology); Questionnaire (Psychology; Built Environment; Earth and Environment, Statistics)
Experimental	A pre-test and post-test (Psychology, Geography, Statistics); Teacher behaviour checklist (TBC) (Psychology); Examining students' content area scores on the area concentration achievement test (ACAT) (Psychology); Pre-questionnaires and post-questionnaires (Geography, Computing); Linear regression analysis (Physics); Trace analysis (Maths); Analysis of final exam results (Physics); A cognitive task analysis (Physics); Analysis of artefact data (Physics); Meta-analysis (Psychology); Analysis of a set of assignments (Psychology); Immediate and delayed quiz (Psychology); Linguistic analysis of student reflections (Engineering); Post-analysis (Engineering); Theoretical analysis (Computing); Transactional argumentation analysis (Earth and Environment); Analysis of evaluations (Earth and Environment); Canonical correlation analysis (Statistics); confirmatory factor analysis (Statistics)

Overall, this analysis of methodologies tells us that, currently, there are a wide variety of methods of data collection and analysis being used across the disciplinary clusters in order to be able to develop and understand good teaching in the disciplines. The range of theoretical and conceptual

material being used to conceptualise and theorise pedagogic issues and solutions also makes it clear that authors in the each of the disciplines and across the clusters put a lot of effort into developing and understanding the effectiveness of their teaching. In addition, it demonstrates that there is much to be learnt from understanding these developments and their effects.

2.6. Conclusions from the literature reviews

The literature reviews reveal a complex environment whereby disciplines that are grouped into clusters have something in common. Conceptual and theoretical frameworks are needed to analyse what is happening. In this respect, the analytical categories we used could facilitate an understanding of how the focus of degrees and the identities they are fostering are generated through engagement with different forms of knowledge that are associated with different identities (proponents of a new or established academic discipline that has a vertical or horizontal knowledge). This in turn shapes what is understood as valuable or good pedagogic practice. So while there are generalizations that can be made in terms of pedagogic trends, it makes little sense to analyse them without considering the knowledge universities are trying to impart and how this relates to the pedagogic identities they are aspiring to gain. This analysis raises questions about the range of factors that would have to be taken into consideration in order to understand teaching excellence or what constitutes good teaching in the disciplines. This literature suggests that it might be possible to have an overarching framework (e.g. disciplinary knowledge; skills; dispositions; values; understanding of relevant employment contexts). However, the variety of knowledge, purposes, etc. requires that subjects, or at least groupings of subjects, might need different criteria or emphasis.

It seems clear that Social Sciences are becoming a leading light in researching, analysing and evaluating good teaching. A summary of some of the key findings was presented to the deans in the interviews and they were asked to comment on it.

3. The perspective of university deans

The second phase of the project examined the views and experiences of academic leaders of disciplinary groups (mainly deans or associate deans of faculties) within higher education institutions. The aims were to (i) test out the relationship between the reviewed literature and practices as experienced within institutions, and (ii) obtain information about similarities and differences between practices in different institutional contexts and the relationship between these and broader features of institutional differentiation within higher education. Data was collected in two stages: interviews with 23 deans (or equivalent staff) and then a questionnaire survey of a national sample of deans.

The deans who assisted the project were mainly university staff who were part of the HEA's Deans Network. The interviewees were selected to represent the four disciplinary clusters used by the HEA to organise much of its work, with between five and eight deans interviewed for each cluster. Individuals were chosen to broadly reflect the balance of disciplines and a spread of institutional types within each cluster. The aim was to include at least one representative of a Russell Group 'research intensive' university, another pre-92 university, a former polytechnic, and another post-92 university in each cluster. The interviews focused on the balance between institutional and disciplinary priorities in the policies and practices for achieving teaching excellence. In addition, deans were asked about the relationships between their institutional and faculty practices, and the main findings from the literature review relevant to the disciplinary cluster. The deans were sent summaries of the literature review a few days prior to the interview.

The online survey of the larger sample of deans associated with the HEA was intended to test out the representativeness of the findings from the interviews and also to provide a picture of the extent of the differentiation of perspectives across the higher education institutional landscape in the UK. The content broadly followed the content of the interviews. (See Appendix 4 for the interview schedule and the survey questionnaire). We received 73 complete survey responses from a sample of 266.

The deans' perspectives on teaching quality and excellence are presented below for each of the disciplinary clusters.

3.1. Arts and Humanities cluster

From both the literature review and the institutional coverage, Arts and Humanities' faculties tend to embrace a range of disciplines which can be categorised by their academic and applied focuses: (i) traditional academic disciplines such as History, Philosophy, Linguistics, Classics, English, Religious Studies, Area Studies and Languages; (ii) professional disciplines of performing arts such

as Dance, Drama and Music; and (iii) professional disciplines of visual arts such as Art and Design, Cinematics, Photography, Media, Conservatoire, Fashion and Textiles, and Jewelry. Some faculties in Arts and Humanities even included Social Science fields such as Law, Politics, Gender Studies, Public Policy, Education, Diplomacy, Tourism and International Management Studies. Of course, institutions differ in their configurations of faculties and disciplines, and quite often the HEA Arts and Humanities cluster would cut across several faculties.

The literature review reported that the Arts and Humanities disciplines were seeking to develop particular values, knowledge and ideals that come to constitute personal and professional identities that involve creativity along with analytical skills and very specific technical and practical skills and knowledge. Some of the key professional identities include being capable of developing professional relationships across different fields, working across a variety of settings with people with different disciplinary and cultural perspectives and practices, and being adaptable to rapid global change. The emotional and moral aspects of students' development are considered important. Disciplines relate to these different aspects to varying degrees. For example, languages are not concerned with creativity and dance is less concerned with academic practices. Moreover, this differed considerably between disciplinary and institutional contexts.

The interviewed deans in this cluster represented four different types of institution including a post-92 university with a long college history, a former polytechnic which was now a university, two pre-92 research-intensive universities from different parts of the UK (one in England and one in Scotland) and a specialist institution of performing art. At the post-92 university that had not been a polytechnic, the faculty offers mainly strongly academic single disciplinary programmes, plus an inter-disciplinary programme of Classic Civilization, and a more professionally oriented programme of Ministerial Theology.

At the traditional research-intensive university in England, the Faculty of Arts and Humanities only covers academic disciplines focusing on the core intellectual content of the Arts and Humanities, whereas the faculty in the more modern research university in Scotland combines academic disciplines with a range of vocational and professional courses. Thus, in the latter university, there was a mix of the academic, the vocational, and the professional with quite strong elements of multi-disciplinary and inter-disciplinary teaching.

The specialist institution only covers a performing art discipline. At the former polytechnic university, the Faculty of Art and Humanities mainly covers more professionally oriented performing and visual arts disciplines though there is also a degree course in English. There are thus a lot of professional linkages in these two institutions which means that a lot of the staff have relevant professional backgrounds outside academe, a fair number combine academic and

professional careers by means of part-time contracts, but almost all need to remain professionally engaged in some way in order to deliver good quality teaching which combines the 'practical' with the 'theoretical and academic'. Thus, academic staff need to achieve a balance between these two elements.

The main points emerging from the interviews are summarised under three broad headings: (i) the assessment of teaching; (ii) conceptions of good teaching; and (iii) learning outcomes, including employability.

(i) Assessment of teaching

There were three methods of assessment that seem to be most widely used across all types of the universities. First, the student evaluation such as 'modular evaluation questions', or 'student survey or feedback', or 'module questionnaire' is a major method to check whether students think teaching has been excellent or not. A specialist institution, where many of the staff have relevant professional backgrounds outside academe, heavily relied on students' feedback on teaching. However, there are two different views about the credibility of the student feedback as an assessment method of 'good teaching'. On one hand, the deans reported that most academics believe that this is reasonably credible method to assess 'good teaching' because they think students are good as consumers in knowing whether somebody is teaching well or not. On the other hand, some academics are not sure that it is entirely accurate. They think that it would depend a lot on practice. Taking an example, a dean at the post-92 non-polytechnic university explained that in the statistics, students who were broadly happy about the course would assess everything in a similar way, but if they were unhappy for whatever reason, then they would mark everything down. Therefore, in her opinion, asking students whether they are happy or not is not the most credible way of assessing 'good teaching'. However, despite some scrutiny about the accuracy of this method and the issue of return rates raised at a research-intensive university, most universities considered the student evaluation questionnaire to be the 'gold standard' of the assessment of 'good teaching' in the Arts and Humanities.

The second assessment method is also associated with students' views. Students, and Student Unions at some universities, quite often give out rewards to good teachers, and these tend to focus more on the inter-personal dimension between teacher and student. Students nominate their teachers for special awards such as 'best lecturer', 'best supervisor' and 'best tutor'. This recognition of 'good teaching' can also be taken into consideration in promotion situations.

The third method is peer observation or peer assessment of 'good teaching', which is more in line with continuing professional development (CPD). This method is frequently rather informal, being used to facilitate collaboration and find examples of good teaching to be shared more widely

among faculty members. However, in at least one of the institutions, observation of teaching was undertaken by line managers and tended to be regarded as an example of managerial control rather than a more collegial enhancement process. In its more collegial form, observation of teaching is a method that colleagues are using to help one another to improve teaching, rather than being a mechanism for preventing bad teaching. A dean at the post-92 university noted that this method is seen as a more reliable method of assessing 'good teaching'. However, this method is often used more for training purposes involving some PhD students who receive more of an open exchange of what constitutes 'good teaching'. The point was also made by the dean at the former polytechnic post-92 university that it was unnecessary to be assessing the teaching of established and experienced academics in this way.

At a research-intensive university, they used either a minimum-standards approach, or an adding-value approach for the assessment of 'good teaching', with the former being a review of modules that are below a given threshold of student satisfaction (addressing deficits in good teaching), and the latter being about professional progression or more generally rewarding excellent/innovative teaching. At the specialist institution, staff are very busy professionals, many with significant professional commitments outside higher education, which makes it difficult to integrate them within the life of institution. As a result, teaching is a small part of their professional identity, so it is difficult to feel that there is institutional oversight of teaching and it is hard to monitor their performance formally. However, the assumption is that the quality of the teaching benefits significantly from the external professional work experience of the part-time staff. Interviewed deans at the specialist institution, and at a research-intensive university, pointed out that their institutions had no formal assessment of 'good teaching' (apart from the method they used for the probationary period at the research intensive university).

There has been a big shift in the emphasis towards importance attached to good teaching across all types of institutions over the last five years, partly because of the National Student Survey (NSS). One dean (at the post-92 university) noted that in the last year, there was intense scrutiny of whether the teaching was excellent and this was done through an analysis, at institutional level, of students' feedback and monitoring whether colleagues took part in CPD. They moved towards encouraging their staff very strongly to participate in HEA accreditation. As such, there has been much more intense interest and development in university strategies on teaching. For example, in a research-intensive university, they have amended their promotion criteria for the career path of teaching-only members of staff to take more account of the quality of their teaching.

The change of the importance attached to 'good teaching' appears to have had enormous impact on faculty members with much of the pressure falling on them to demonstrate what they are

doing. One dean at a former polytechnic pointed out that there was large pressure on academic staff to be “outstanding at everything”. A balance needed to be struck “every hour of every day” between the university wide standards and requirements, the distinctive professional and personal qualities of each individual staff member, and the distinctive features of the particular faculty.

Another dean at a research-intensive university noted that NSS and TEF were examples of changes in the “external landscape” of teaching excellence, within a growing culture of accountability. In response to these changes in the external landscape, generally academics had a “high level of acceptance of these external assessment regimes”. At a research-intensive university, the increased institutional emphasis on ‘good teaching’ has been seen very positively by colleagues both in research-active, teaching-active and teaching-only positions. However, some of the academics at a post-92, non-polytechnic university have not responded to it that favorably, as they found a lot of it was about filling in forms rather than what they were doing in classrooms, so it was more about “have you got this piece of paper?”. The dean at the institution also noted that there may be more concern by colleagues about the time they are now expected to commit to CPD for their teaching role, even though their traditional rather sceptical viewpoint about CPD has become more positive. However, those who have been through a university teaching recognition scheme found it a positive experience. A dean at a research-intensive university added that practitioners also have their own ideas about teaching excellence and how they should be teaching, so they are worried about their own classes and work. For example, teachers are now paying a lot of attention to improve the way they give feedback on student work.

(ii) Conceptions of good teaching

There were some differences between the views of academic staff, students and management in what constitutes ‘good teaching’. According to a dean at the post-92 university, students do not have united views about teaching excellence as some like more of a challenge and prefer an interactive classroom to put forward their views (so they want a lot of opportunities to speak), whereas some students just want their teachers to tell them what they “think is right”. Most academics agree with the first set of students who want challenging experience in the classroom, and they think that is what should constitute teaching excellence. They want their students to be “actively and critically engaged” in their learning. However, the university management team does not have a systematic view of what is excellent. They are largely moving towards running the university “a bit like a business” so they want “happy” students but that might not be a good strategic view of what ‘teaching excellence’ should be.

This was supported by a dean at the former polytechnic post-92 university who felt that it was important for the university and its staff to balance concern about short-term impact on students

with a goal of long-term impacts and gains from the university experience. In a way, university teaching was a process of “planting seeds”, which might take many years to bloom. Each student was starting a “big journey”, and the university experience needed to be with them throughout that journey. This meant that approaches to teaching should be flexible and not over-deterministic. The possibilities of risk and failure could not be avoided. Students’ immediate ‘happiness’ about their current teaching offerings needed to be balanced against their changing long-term needs.

What constitutes ‘good teaching’ is directly related to pedagogical concerns that are varied in different disciplines as well as in different types of institutions. For example, pedagogic concerns were mainly expressed at programme level in the post-92 university. The programmes that seem to have the most pedagogical challenges are in Ministerial Theology, because their students usually enter through open access so they usually have not been in education for a while, and for many of them English is a second or third language. One large problem in this institution is with originality and plagiarism, due to differing educational expectations. The particular challenge for the staff in these programmes is how to teach students about how to quote and talk about evidence. In most of the other programmes, the challenge is towards independence: teaching students to work independently. The biggest challenge in history is getting students to read, and to realise that they have to go beyond reading just one piece. That is also the case in Classical Civilization and Theology, where students are inclined to read something that they like in line with their main argument, not thinking about counter arguments. So much of the pedagogic challenge in this case lies in constructing ways to educate students into thinking about the range of viewpoints on the particular topic. This was often seen to be best achieved through selecting readings with opposing views, so that students read at least two views, and they come to classes in order to discuss and see how and why the different authors come to have such different opinions. In performing art programmes at the specialist institution and former polytechnic post-92 university, the deans felt that a lot of staff needed to have ‘multiple identities’ and they needed to bring and share their ‘world experience’ with their students.

In more traditional academic disciplines at the post-92 university, standard teaching is a 45-minute lecture, followed by a 15-minute seminar groups, but there are some teachers who do not follow that tradition and are more comfortable with blended, more interactive sessions with a limited amount of lectures. They make various use of technology in the classroom, standard PowerPoint, portfolio-based assessment using ‘Mahara’, e-portfolio system, and Internet forums encouraging debates among students. In contrast, at one of the research-intensive universities, they still heavily use the techniques of memorisation and recall, which they associated with the ‘digital illiteracy’ of their faculty. The dean noted that there was a generational gap, in that the IT skills of

faculty could not keep up with those of students. It is particularly difficult for Arts and Humanities, because it is more reliant on close engagement with extensive texts. This university would not be a good example of innovative responses to IT developments, in part because it does not have the infrastructure to be able to respond to technical needs. The faculty was very concerned that the university would be left behind because of this gap. A dean at this university also pointed out that educational experience is about more than just the lecturer, but about the broader interaction between lecturer and student.

At the other research-intensive university, student engagement and quality feedback were universal, major issues they were trying to address across the whole university. Features of good teaching which appeared to be relevant across more academic disciplines in Arts and Humanities appeared to be the development of engaged, critical students, and this was often seen to be best achieved through more interactive forms of teaching encounter. There is also a tendency to replace one-way transmission of knowledge by means of a traditional lecture with the varied use of the new information technologies.

(iii) Learning outcomes

Within the Art and Humanities cluster, all disciplines tend to 'share a common core' in terms of their aims, including a critical attitude to the world, knowledge of the past, and familiarity with other cultures and beliefs. More academic programmes are trying to develop students who can undertake independent study and research, and so a critical thinking skill is a key intellectual competency. One dean noted that academic programmes aim to produce self-critical citizens, although this is interpreted differently within different disciplines: for example, History does this through teaching students how to collect and collate data and then interpret it meaningfully. For courses and disciplines of a more vocational and professional nature, employability concerns are inevitably important, though often not at the expense of a critical academic approach – the latter being particularly important for students on such courses who do not progress to employment in the vocational/professional field.

Every discipline has its benchmarks, and faculty are very mindful of these, so they want to develop different and distinctive skills in their students. Most deans agreed with the literature findings on student attributes in this cluster, which indicate that disciplines can seek to develop students that specialise either in creative practices or in academic practices relevant to particular disciplines (or sometimes a mixture of the two). Some disciplines are 'outliers', such as Modern Languages, which is more skills-based; or Music and Acting, because of the focus on performance; or the Ministerial Theology programme which is training students to be pastors and therefore needs to be more

professionally oriented. All programmes are keen to develop graduate attributes, soft skills or generic skills, and they are the same across all types of the institutions.

Most of the deans emphasised that graduates in the Arts and Humanities went on to work in many different employment areas and therefore needed a higher education that recognised their varied, and often quite uncertain, futures. Therefore, employability is becoming an important emphasis in the graduate attributes in the Arts and Humanities. However, in more traditional academic disciplines, some students seem to pursue knowledge for its own sake without having as much concern about the employment outcome of their degrees as their peers in more professionally oriented programmes. In outcome-based professional programmes, employability is the key feature of the aims of the degree programmes. For example, a dean at a specialist institution emphasised that their faculty members have a clear and shared picture of what they think successful graduates would be. The ideal graduate would be a performer or a composer who is critically engaged, articulate, and able to express himself or herself across a variety of media, or would be a researcher who is able to do public engagement, who is able to disseminate findings in different ways. Professional outcomes, the actual abilities to make the student's degree something that gives him/her a long-term living, were fundamentally important.

According to the dean at the former polytechnic university, for students, there is a need to build both confidence and identity, though the latter is likely to be multi-faceted – professional, attitudinal, skills, and aspirations. In many parts of the Faculty, identity construction was an important feature of the educational experience, combining culture and aptitudes with a disciplinary core. Such a combination was particularly important in artistic training. But it was also necessary to recognise that in many of the Faculty's professional fields, long-term careers could be uncertain and problematic and this had to be recognised and accepted. He further pointed out that it was fine for students to be 'pursuing the dream' but the ability to become a 'portfolio worker' was also important. 'Generic jobs' were not necessarily bad jobs. This university provides a 'Graduate +' scheme which gives students opportunities to engage in charities and voluntary work of different kinds. A broad goal of this scheme is to create 'adaptability' within the University's students, as this is something that can equip them to cope with a fast-changing and uncertain world in the future.

The Classical Civilization programme at the post-92 university that had not been a polytechnic was a multi-disciplinary programme involving language learning, history, philosophy, literature and some archaeology. In this programme, learning outcomes indicated the breadth of possible studies rather than the formation of any particular personal identity, whereas learning outcomes from single disciplinary programmes could define a distinctive kind of person emerging, a historian or a

philosopher. So it was possible to take several directions within that degree programme at this university rather than following just one route with everybody coming out with a similar profile at the end of their studies.

Overall, more academic traditional disciplines in the Arts and Humanities cluster seemed to be attempting to combine elements of critical thinking and engagement with elements of employment relevance, whereas more professionally oriented disciplines in the cluster, such as performing and visual arts disciplines, were inclined to combine creativity and practical skills with strong elements of employment outcome.

In summary, the Arts and Humanities programmes consisted of both the traditional academic disciplinary courses and the more vocational and professional courses, though the balance tended to be very different between types of institutions, with the traditional pre-92 universities concentrating mainly on the former, and the post-92 universities concentrating rather more on the latter. However, it also needs to be recognised that there are strong traditions in both the academic and the professional fields as well as university wide developments that have universal implications for teaching quality.

(iv) Arts and Humanities deans responding to the larger survey

In the larger sample of deans responding to the online survey, 92.9% of the Arts and Humanities deans placed most emphasis on the importance of 'opportunities to discuss and debate'. While this factor was also emphasized by deans across all disciplinary groupings, the importance assigned to 'opportunities to discuss and debate' by the Arts and Humanities deans was greater than for the sample as a whole. 78.6% of the respondents gave a similar rating to some of the traditional teaching factors such as 'up-to-date and relevant curriculum' and 'good critical feedback to students'. However, only 50% of the Arts and Humanities deans placed 'high importance' on 'well-prepared lectures', which was the lowest in the overall deans' survey. While other factors were assigned some importance, they received greater emphasis in other disciplinary fields. For example, 51.2% of the overall deans' survey gave a rating of 'high importance' to 'work-based learning' while the figures for the Arts and Humanities were 30.8% (see Appendix 5 for more detailed figures).

With respect to the student qualities and attributes most valued by academic staff, all of the Arts and Humanities respondents indicated that 'creativity' was very important. 'Creativity' was not emphasized across the survey as a whole, but it was the most important to the Arts and Humanities deans. Although the emphasis on 'creativity' by all of the Arts and Humanities deans generally confirmed the emphasis coming out of the interviews with Arts and Humanities deans, the interview findings were slightly different because the deans who were interviewed gave higher

importance to 'critical and analytical skills'. However, 92.3% of the survey respondents put these skills after 'creativity'. The same emphasis was also placed on being 'knowledgeable of the discipline'. Being 'knowledgeable of field of study and practice' was also highly important to 84.6% of the Arts and Humanities deans, 'questioning' 76.9%, 'capable practitioners' 69.2%, 'aware of wider social and economic context', 'concerned with practical problems' and 'professional standards' all 61.5%. The Arts and Humanities deans emphasized a wider range of qualities and attributes than other deans overall. For example, there were quite large differences between the responses of the Arts and Humanities deans and the deans' responses overall in 'awareness of wider social and economic context' (35% for the overall deans, compared to 61.5% for the Arts and Humanities), the factors of being 'cross-culturally capable', 'agents for change', 'concern for social justice' and 'flexibility' were very important to 50% of the respondents of Arts and Humanities, while they were important to 32.5% of the deans overall (see Appendix 5).

Many of the above differences might be regarded as predictable and reflective of the intrinsic features of different disciplinary fields, as well as different relationships to the world of work. However, there were also some differences that were less easily explained. Even with certain factors which might be expected to be valued highly by Arts and Humanities – 'competent verbal communicator' and 'competent written communication', they received less emphasis from the Arts and Humanities deans than they did from the deans overall. However, they accorded much higher importance to 'individualistic' attributes in graduates or 'prepared for a portfolio career' than did the other deans (see Appendix 5).

Caution is necessary in the conclusions drawn from these figures. It was not a very large sample and, as we have discussed earlier, there is also considerable internal variation in emphasis within each of the four disciplinary clusters.

Insofar as the Arts and Humanities disciplinary field possesses some distinctive features, it also appeared that they were generally being applied to most Arts and Humanities teaching, irrespective of context. 53.8% of the Arts and Humanities deans surveyed believed that considerable differences were required in teaching their disciplines on multi-disciplinary or vocational courses, whereas 32.4% of the deans overall believed that such differences were required. For the Arts and Humanities deans, the most influential factors on conceptions of 'good teaching' were 'institution's traditions and culture', 'faculty's disciplinary traditions and culture', and 'preferences of individual academic staff'. As with the Health and Social Science deans, most Arts and Humanities deans also accorded higher importance to 'preferences and expectations of students' and 'external expectations' as highly influential factors on conceptions of 'good teaching'.

However, they gave less emphasis to the influence of the current leadership of institutions and faculties with 23.1%, compared to 46.3% of the deans overall.

Finally, there was one question where Arts and Humanities deans' responses were broadly in line with those of other deans. Only 23.1% of the Arts and Humanities deans and 18.4% overall believed that diversity in educational and social backgrounds of students required different approaches to teaching. And there was one question where responses of the Arts and Humanities deans largely differed from the deans' responses overall: 8.3% of the Arts and Humanities deans, compared to 35.1% of the overall deans, believed that there was a major change in conceptions of 'good teaching' within their faculties over the last five years.

(v) Arts and Humanities deans: some conclusions

From both the interviews and the survey data, there is a strong picture of an emphasis placed within the Arts and Humanities on issues of 'creativity', 'critical and analytical skills', and 'social responsibility' as central features of an Arts and Humanities education. However, from the interviews with the deans, there is also a picture of diversity within the Arts and Humanities, partly reflecting differences in academic/professional balance and partly reflecting differences in institutional contexts.

3.2. Health and Social Care cluster

Health and Social Care has been portrayed in the literature and in health-related faculties as a set of subjects that deal with physical and mental health. From the review of pedagogic literature in Health and Social Care disciplines, this cluster appeared to be largely concerned with producing students who would be well equipped to engage in their professional duties of care. Thus, the cluster was portrayed as very outward facing, looking to employer needs, professional standards, and patient treatment, to inform teaching and learning practices. This external context was seen to be fast changing, making it difficult for universities to keep up with teaching the latest techniques or social frameworks. Where particular topics, such as Social Work and Social Policy, were understood to be more academic than vocational, they were still concerned with providing students with the skills to connect theory and practice. Students of Health and Social Care disciplines were understood to need to develop complex skill sets and dispositions.

Some disciplines examined in the analysis of the pedagogic literature were often also present in the university Health and Social Care faculties reviewed. These included Nursing and Midwifery, and Health. Other disciplines present in the literature were absent in the faculty structures reviewed (e.g. Veterinary Medicine), while other disciplines not classified as Health and Social Care in this study have made their way into Health and Social Care focused faculties. These included

Biological and Biomedical Sciences, Education, Leadership and Management, Nutrition, Pharmacology, Psychology, and Speech Therapy. The presence of what would otherwise be considered STEM or Social Science disciplines in Health and Social Care faculty may demonstrate an increasing inter-disciplinarity, a pedagogic approach noted by several of the interviewees. The mixed presence of Social Work and Social Policy across the six faculties where deans were interviewed for the project further suggests the uncertain relationship between 'Health and Social Care' and the Social Sciences and STEM clusters.

The preliminary analysis below reflects the responses from six interviewees – two professors, three deans, and a vice-chancellor. Four of the interviewees were from post-92, 'former polytechnic' universities, and two were from a research-intensive university, all in England. Themes arising from the interviews will be discussed under three main sections: (i) consideration of industry needs, (ii) conceptions of good teaching, and (iii) the assessment of teaching excellence.

(i) Consideration of industry needs

The location of Health and Social Care studies within broader professional and industry contexts was present within all of the interviews. For deans in former polytechnics, these more often were discussed in the form of professional organizations and employers, while deans in research-intensive universities more often described 'industry' in general terms or academia (as a future employer of researchers or teachers of postgraduate students), although these were by no means mutually exclusive. Each group was depicted as a stakeholder in the teaching and learning processes occurring at universities.

The influence of external professional bodies and employers reflected the outward-facing and vocational nature of the cluster, as described in the literature review. One dean from a former polytechnic university noted that employers and partners could have a large influence on what was being taught through various boards (such as partnership boards or virtual faculty boards). Other professional organisations, such as NHS, became embedded in university teaching by virtue of their professional criteria, to the point that "all the kinds of standards, expectations, and cultures that go with that permeate entire programmes" (post-92 university, former polytechnic). A dean from a research-intensive university also noted that professional bodies associated with some disciplines kept "our feet to the fire", acting almost as a quality assurance mechanism.

In contrast to the depictions of these bodies as putting pressure on faculties' teaching agendas, some deans saw it as a two-way street, whereby universities could also influence external organisations, seeing their production of effective graduates as a way of benefitting non-academic communities. As said by a dean from a former polytechnic university:

If we are going to help develop, train, and educate a graduate or postgraduate workforce of the future, we have to work with [partners], whatever organisation [they] represent ... to make sure that our students are going to be change makers for [them].

The involvement of the community and external stakeholders reflects a desire within the Health and Social Care educational field to create “a rounded healthcare worker” (Dean, pre-92 university, research-intensive). Only one dean (from a research-intensive university) questioned whether it should be the university’s role to “produce this super-responsive workforce”, although this meant slightly different things to the different deans interviewed. One dean from a polytechnic university identified nursing and midwifery as being the most vocationally oriented, concerned with teaching clinical skills. In comparison, the interviewee described the Health Professions courses as a “halfway house”, being both workforce-facing but also with a culture of (applied) research; and, finally, Psychology as the least vocational, due to its focus on theory and research. A dean of Dentistry in a research-intensive university suggested that dental school graduates were unique in having the content knowledge as well as the practical skills to be professional workers. The interpretation that some of the more Social Science disciplines did not directly aim to produce vocational graduates – even though there was still interest in employability and workforce needs – was echoed by the other deans in former polytechnics.

This changing balance between vocational and academic aims remained true at the postgraduate level as well as the undergraduate level, as the six deans acknowledged that postgraduate courses required greater academic development or more advanced skills, but were “still embedded in real world scenarios” and practical applications (post-92 university, former polytechnic). Degree aims in the research-intensive university differed slightly in that undergraduate education was geared towards “amphibious” graduates expecting multiple career routes, with more research-oriented specialisations at the graduate level (pre-92 university, research-intensive).

Understanding how to teach students to be workforce ready was interpreted by most deans as acquiring a “whole body of knowledge”, as well as being able to use the skills required to do work well (such as ethical behaviour). Thus, to teach well, universities:

have to maintain an active engagement both in our discipline, in our pedagogy, and in the science of pedagogy, to fundamentally change [a student’s] thinking. (Post-92 university, former polytechnic)

Relaying content knowledge and learning ‘academic skills’ was noted by two deans, but teaching professional skills was a much more prominent theme for all deans in former polytechnics. This represented a more conflicting dilemma for a dean in a research-intensive university, however, as

the pressure to produce employable graduates with certain skills existed in addition to the perceived higher pressure from the academic community to have graduates with the same kind of knowledge and understanding that they developed themselves in order to prepare them for a potential academic career. Nevertheless, a range of skills were listed by the deans from all universities, demonstrating a shift away from purely content-driven curricula, from clearly vocational skills (clinical skills, professional team-working, problem-solving, “practical lab skills” (dean, pre-92 university, research-intensive) to softer skills (safeguarding, self-awareness, reflexivity, adaptability, empathy), to intellectual skills (independent thinking, “evidence-informed decision making” (dean, post-92 university, former polytechnic), and critical thinking.

The shift toward what could be typified as vocationally oriented, inter-disciplinary, inter-professional, inter-personal, and technology rich teaching occurred through a relatively agreed set of activities across institutions, and even across disciplines. While simulations or hands-on practice in hospital environments, with interactive patients and up-to-date equipment, seemed to epitomize the desired pedagogical destination among Health and Social Care deans, and was employed in at least two of the former polytechnics, it was more specific to Health, and Nursing and Midwifery courses. Even among what this study would consider to be Social Science or STEM-type disciplines, there was a common pedagogical theme of moving away from didactic lectures, towards ‘real’ or ‘live’ learning, including international development projects and industry placements.

A major challenge perceived by three deans in former polytechnic universities, however, was keeping up with the needs of the workplace. Due to changes in technology, professional standards, or the context of caring (e.g. from hospital care to social care):

it is very difficult to reflect their interests in a curriculum fast enough ... being responsive enough to changing practices in the workplace ... We’re always lagging behind. (Post-92 university, former polytechnic)

The broader aims of teaching in Health and Social Care similarly reflected this professionally oriented teaching of knowledge, skills, and values, through their emphasis on student engagement and identity (rather than just student learning and assessment). Most deans did not expand on what they meant by student engagement, but their statements indicate that it ranged from simple class attendance to immersive action or being challenged in their learning.

(ii) Conceptions of good teaching

The deans’ responses to notions of ‘excellent teaching’ intimated an underlying tension in whether to consider what they saw as the improved status of teaching to be a positive reinforcement of the

value of teaching, or an imposition of a superficial quality assurance framework, although this tension was less marked in the interviews with deans from a research-intensive university.

For the former, teaching was often portrayed in contrast to research. Comparable regard for teaching was seen as a relatively new development by the deans, which was understood to benefit the more vocational disciplines and universities, where teaching was already a higher priority. For former polytechnics and most disciplines in Health and Social Care, it was therefore understood to be a welcome change. For one dean, however, this also meant that the institutional attempts to build the research profile of their former polytechnic university might be an even more difficult transition to make. In the research-intensive university, the growing parity of teaching with research was understood by deans to be a necessary and helpful institutional shift in addressing student expectations of teaching quality. However, emphasis on teaching was portrayed as conflicting with faculty members' research activities, simply in terms of managing this with their "several other jobs" (pre-92 university, research-intensive), but also because for many faculty members "set in their way", research was still assumed to have greater prestige and influence on promotion.

So, faculty and management did not necessarily buy into messages on excellent teaching practices at the universities reviewed. At a broad level, one dean (post-92 university, former polytechnic) explained that faculty were being told what to do by various bodies, so they would "go through the motions" to address the requirement, but this was often different from what they wanted to teach or thought they should teach. More specifically, she noted some faculty were wary of accepting the TEF and other national ideas of teaching excellence, because they were "nervous of the neoliberalisation of everything" (post-92 university, former polytechnic), seeing the frameworks as a means to control the large market of higher education, under the guise of concern for 'teaching excellence'. Another dean from a former polytechnic echoed the concern that the TEF would represent another statistical misrepresentation of teaching, since:

it may give you an idea, but the notion that it is accurate to a percentage point is a bit of a joke, really. We all know that games are played with these sorts of things. We all know it can mask things.

This statement not only demonstrates the distrust of a quantitative measurement of teaching excellence, but a deeper concern with how those quantitative measures are constructed to reflect a political or at least external agenda.

Beyond national agendas for excellent teaching, another dean depicted teachers' distrust of pedagogic research literature:

Among some of the more research-active schools there is a distrust of some of the pedagogic research literature ... Some of the schools use very different research methodologies to some of the pedagogic literature, so it is really a methodological complaint. (Post-92 university, former polytechnic)

Thus, whether coming from national regulations or academic research, the idea of 'excellent teaching' was challenged by faculty deans with responsibilities for Health and Social Care within these former polytechnics. In part, this stemmed from recognising the risk that applying pedagogies into one's classroom might not translate as it was intended, but also a deeper scepticism towards those people (including researchers) and institutions advocating certain practices or pedagogies as 'excellent teaching'.

This distrust was not as evident in the interviews with deans from research-intensive universities; the conversations there instead centred on how to motivate research-focused faculty to improve their teaching practices. In these faculties, good teaching was often depicted in terms of the quality and times of contact between students and teachers, and a vague notion of moving away from didactic teaching to more active pedagogies, such as problem-based learning. These conceptions of good teaching come across as simpler than those expressed by the deans of former polytechnics, potentially because teaching was framed as the movement away from research, and/or encouraging innovation in teaching was difficult with faculty who were more firmly 'conservative' in their pedagogic approaches.

(iii) *The assessment of teaching excellence*

Given the uncertainty around a single idea of 'good teaching', it should be unsurprising that there was disagreement over the various methods for *evaluating* good teaching. In particular, metrics based on big data were sometimes seen to provide a refreshing way to evidence teaching success. One dean, went so far as to say that metrics defined teaching excellence:

You've got to have effective and shared metrics ... Once we've defined those, I then won't have a problem with what teaching excellence means. Teaching excellence means a process of peer review, and some external use of big data, driven down to programme level as well as the institutional discipline level. (Post-92 university, former polytechnic)

However, more often, deans saw metrics as "crude" (post-92 university, former polytechnic) in their reduction of teaching, to the point that metrics were not even able to capture the essential human element of teaching. This dean went even further, saying that:

There is a psychology around that [developing broader professional skills] and there is a humanity around that, which can very easily be lost if universities are being pulled towards these very kind of crude metricised systems of measuring their teaching.

(Post-92 university, former polytechnic)

Many deans hinted at the need for metrics to be well defined. However, it often seemed that metrics were used as an institutional strategy, required by managers as measurable results of teaching success, but without clarifying what the metric was meant to signify or agreeing on the appropriate indication of teaching success. For example, institutional feedback surveys or NSS surveys generally measured good teaching according to students' evaluations of their satisfaction with the course, yet deans noted differences in students' individual teaching preferences, and differentiated this kind of 'enjoyment' from student engagement and student learning. Indeed, student satisfaction, rather than an institutional aim, was more often depicted as something to be managed, in that students' expectations of academic achievement, workforce preparation, or study requirements were generally over-inflated. This reflected a growing attitude of what several deans identified as 'students as consumers' of education, which was understood to heighten the possibility of misplaced entitlement or disappointment.

Despite its more open and qualitative nature, the use of peer reviews as teaching evaluations in the former polytechnic faculties received the most resistance as an evaluation of good teaching by the interviewed deans. Peer reviews were often understood as an institutional mechanism for assessing and monitoring teaching, so that higher-level management could achieve quality assurance, rather than providing mutual support and dialogue around good teaching practices. One dean went so far as to say that he felt a new university policy on teaching observation to be a top-down "policing model" (post-92 university, former polytechnic), whereby management judged teachers. This depiction of bureaucratic, closed, and hierarchical assessment of teaching revealed tensions between faculty and larger managerial structures (at the university and national level), purportedly interested in "the OFSTEDisation of higher education" (post-92 university, former polytechnic). In comparison to peer reviews, national schemes such as National Teaching Fellowships (NTF) and HEA Fellowships were not described as problematic.

Deans in the research-intensive university did not mention either peer reviews or national fellowships. One of these deans did discuss institutional evaluations of teaching, but in the form of educational databases cataloguing teachers' work materials, so that "we know what contribution that individual has made to the educational endeavour". These 'excellent teachers' were seen as being easily identifiable, and now better recognised through awards and routes to promotion (similar rewards were noted by almost all six interviewees). For a couple of deans, these

professional incentives existed in addition to the motivation of good teachers to do their job well and receive positive student feedback.

Other ways of encouraging and rewarding good teaching noted by the deans from the former polytechnics were described in terms of structures and programmes to support teachers in their classroom, such as centres for pedagogic research and practice, and teaching excellence awards (often through student nominations). Deans from the research-intensive university tended to frame notions of institutional support more in terms of resources, mainly as time and workload, but also as money and facilities, particularly class size.

(iv) Summary

The response of the deans echoed many of the concerns and themes raised in the literature for Health and Social Care. One key divergence could be seen in how disciplines that related more to Social Care or Social Sciences, while depicted as being more academic than the more vocational health disciplines, are less of an outlier as expressed by the deans of the former polytechnic universities. The addition of these disciplines to a Health and Social Care focused faculty demonstrated the faculty's outward-facing orientation to the professional and public worlds. The underlying sentiment of responsibility and responsiveness to external stakeholders likely related to pedagogical trends in Health and Social Care away from didactic teaching towards practices that developed students' knowledge, skills, and values in more complex and practical contexts. This was not a perfect relationship, as the interests of these professional and public groups were not unanimous, sometimes even competing, and were quick to change. Teachers were mostly represented by the deans as genuinely interested in improving their teaching and the value given to teaching, although in more pre-92 universities there was a perceived struggle to persuade faculty who had greater involvement in research. Many institutional and national mechanisms for evaluating teaching were portrayed to be in tension with aims to improve teaching practices. Whether it was university policies on teaching observation or national metrics like the NSS or the upcoming TEF, deans suggested a suspicion of the validity of metrics and, in former polytechnics, a greater fear of a managerial regime of quality assurance and neo-liberalisation. The few common exceptions to recognising excellent teaching were teaching awards, fellowships, and portfolios used for promotion. Research-intensive universities hoped these incentives, alongside national strategies, would motivate greater faculty involvement in improving teaching, while deans in the former polytechnics sought to participate in larger conversations around defining excellent teaching and teaching evaluation. In the meantime, all faculties continued with their own ideas and practices of good teaching.

(v) *Health and Social Care deans responding to the larger survey*

The online survey of deans reinforced findings characterising Health and Social Care as principally vocationally oriented in their aims, pedagogies, structure, and outcomes. For example, of the disciplines taught in the faculties of all surveyed deans, those that this report would categorise under Health and Social Care (of which there were 53), 47% were classified as mixed (vocational/professional as well as academic), and 45% were classified as vocational by the deans. Only a few Health and Social Care disciplines (8%) were categorised by deans as 'academic', such as 'Social Policy' and 'Health and Social Care'. So Health and Social Care disciplines were not understood to be exclusively vocational in focus, but they were portrayed, nevertheless, as tending towards the professional end of the spectrum. Furthermore, Health and Social Care deans surveyed ($n = 8$) on average thought that 83% of their graduates were employed in an area that required their disciplinary degree as a qualification ($n = 7$, $M = 83\%$, $SD = 18.8$). In comparison to the mean of 63% for all deans surveyed ($n = 72$, $M = 63\%$, $SD = 28.6$), this suggests that Health and Social Care deans see their cluster as having greater direct employment routes, likely tied to the professional outlooks of their programmes. It is important to note that these comparisons between groups' mean averages, and between other clusters' responses should not be taken to be conclusive, due the small cluster sample sizes and consequently restricted inferential analysis. They do provide potentially indicative differences, however, which serve to affirm or problematise results from the literature and interview analyses, triangulating overall findings.

The predominant orientation of Health and Social Care to vocational considerations was also reflected in the qualities and attributes of successful students that deans felt were valued by academic staff. All (100%) of the valid responses from deans in Health and Social Care showed that being 'capable practitioners', 'knowledgeable of field of practice', and 'adher[ing] to professional standards' were very important. This is considerably higher than the respective 59%, 70%, and 78% of valid responses from all deans who thought these attributes were very important (see Appendix 5 for detailed figures). This suggests a particular emphasis of Health and Social Care on professional and even externally defined competencies, as noted in the analysis of interview responses in deans' emphasis on other stakeholders and qualification standards. Similarly, Health and Social Care deans more frequently rated the qualities of 'technical skills', 'strong values', 'ability to empathise', 'competent verbal communicator', and 'emotional skills' as very important relative to all deans. More specifically, Health and Social Care deans described these qualities as very important 83%, 100%, 83%, 100%, and 83% of the time, respectively, in comparison to 58%, 45%, 28%, 58%, and 25%, respectively, across all deans surveyed. The clearly inter-personal descriptors, alongside technical skills, echo the findings from the interviews that Health and Social Care students were expected to develop a rich set of affective skills and

procedural abilities in order to meet professional qualification standards and to produce competent graduates. This did not appear to extend to more meta-social abilities, however, as qualities such as 'aware of wider social and economic context', 'cross-culturally capable', 'concern for social justice', or 'agents for social change' were less frequently rated as very important by Health and Social Care deans in comparison to the other listed qualities (although this did not necessarily differ from other clusters) (see Appendix 5 for detailed figures). Like the interviews, the survey results also illustrate how deans recognized the importance of more academic skills; all valid Health and Social Care deans' responses judged the attributes of 'critical and analytical skills', 'knowledgeable of discipline', and 'knowledgeable of field of study' to be very important, not unlike other deans. However, Health and Social Care deans understood there to be comparatively less value on 'research skills': 67% saw it as only somewhat important, versus 60% of all deans who saw it as very important. Thus, Health and Social Care deans understood that they needed to impart academic knowledge and intellectual skills, but this did not necessarily coincide with research training.

The range of professional, affective, and academic competencies that Health and Social Care deans saw as central to their cluster was echoed by a range of pedagogies which they understood to constitute good teaching. All of the valid responses from Health and Social Care deans categorised 'up-to-date and relevant curriculum', 'work-based learning', 'effective modelling of complex scenarios', and 'simulated experiences' as very important. With the exception of a relevant curriculum, these pedagogies were noticeably different from the typical importance given by all deans – only 51%, 38%, and 36% of deans classified them to be very important, respectively. The comparative emphasis of Health and Social Care deans on these pedagogies resonates with findings from the literature and interviews, as simulations, internships, and hands-on experience were described to be learning activities particularly useful for preparing students for the multi-faceted problems they would face in their professional field. Somewhat in contrast to these findings, however, survey responses also showed that from the listed pedagogies, Health and Social Care deans saw 'appropriate use of new learning technologies' as less important relative to the other items (67% categorised it as only somewhat important). This does not mean that learning technologies were unimportant (no Health and Social Care deans classified it as not important), just that other items were more important, possibly because learning technology is not considered to be an approach to teaching in its own right, but rather is understood to be a tool used to fulfil other pedagogies.

The conceptions of good teaching were by no means absolute or permanent. Half of Health and Social Care deans understood that major changes in the conception of good teaching have occurred in the last five years (greater than the mean of 35% of all deans who held this view).

Furthermore, all deans understood that at least some difference in teaching had to be made in order to address the diversity in the educational and social backgrounds of students, and varying inter-disciplinary or professional focuses of disciplines. The mutable ideas of good teaching are influenced by different stakeholders, the most important of which Health and Social Care deans most often identified as: external expectations (100% of Health and Social Care deans rated to be very important), the faculty's disciplinary traditions (86%), the faculty's leadership and policies (86%), and the preferences and expectations of students (71%). In contrast, institutional leadership, institutional culture, and staff preferences were less important (33%, 29%, and 29% of Health and Social Care deans rated these factors as very important, respectively). Thus, Health and Social Care deans understood that conceptions of good teaching were being directed more by their cluster faculty than their university as a whole, and more by student and external stakeholders than themselves.

(vi) Health and Social Care: some conclusions

One of the main themes emerging from the Health and Social Care pedagogical literature, interviews with deans, and online survey of deans associated with the HEA, was the orientation of the cluster towards employment. This alignment of university faculties with industry needs occurred through mechanisms such as professional qualification standards, presence of external stakeholders in boards, as well as recognition by the cluster of a mission to serve the wider community. In turn, the Health and Social Care cluster emphasised the importance of producing graduates who possessed a broad set of competencies, including technical, inter-personal, ethical, and even managerial skills. At the same time, imparting academic skills (such as critical thinking, decision making, analysis, and knowledge of the discipline) was an important feature of a Health and Social Care education that deans did not believe was mitigated by a professional outlook. Disciplines related more to social care continued to occupy a more confused space on the academic–vocational spectrum, as seen in the pedagogical literature. These multi-dimensioned aims were met with pedagogies that were more focused on real and practical contexts, engaging students in the multi-faceted aspects of human health through simulations, placements, internships, or other projects. Similar pedagogical approaches were found in the interviews with deans and the Health and Social Care literature, although these sources revealed potentially related concerns with student engagement and keeping up with the evolving demands of the workplace. Given the external pressures deans understood to exist on Health and Social Care teaching, their perception of major changes in conceptions of good teaching is perhaps unsurprising. As Health and Social Care continues to respond to what were often portrayed to be over-inflated student expectations; professional requirements and community needs; faculty (and to a lesser extent institutional) leadership and policies; and forthcoming national quality assurance frameworks, there can be little doubt that this cluster will continue to seek pedagogical

approaches that effectively and efficiently teach their students the ranging and deep skill sets required of them.

3.3. Social Sciences cluster

Social Science faculties tend to embrace a range of academic disciplines – for example, Economics, Political Science, Anthropology, Sociology – together with traditional professional fields such as Law, Accountancy and Education, and new vocational areas such Hospitality, Leisure, Sports and Tourism. However, the institutional breakdowns differ considerably. In many cases, professional fields such as Law and Business are in separate faculties and, in others, Social Sciences may be combined with disciplines from the Humanities.

The literature review reported that the Social Sciences were seeking to develop students who were intellectually competent, socially astute and able, morally responsible and politically engaged critical thinkers. In the more professional and vocational courses, this was generally linked to the achievement of professional standards and competences. There was often need for courses to cross disciplinary and professional boundaries, which further stretched the conceptions of teaching excellence. Overall, however, most Social Science disciplines seemed to be attempting to combine elements of critical thinking and engagement with elements of employment relevance, though the forms that these would take differed considerably between disciplinary and institutional contexts.

Three of the interviewed deans in the Social Sciences were from post-92 universities that had been polytechnics previously, and three were from pre-92 universities, two of which would be considered to be research-strong institutions. The disciplinary spreads across the different faculties differed with the former polytechnics combining academic disciplines with a range of vocational and professional courses, generally with the latter dominating in terms of student numbers. In one of the institutions, the faculty was actually named a Faculty of Business, Law and Social Sciences. At another, the faculty was divided into four schools, three of which were related to health services. And at the third former polytechnic, the faculty contained schools of Business, of Applied Social Science, of Education, and of Sport and Service Management, with student numbers lowest in the Applied Social Sciences school. In one of the pre-92 universities, the faculty combined Social Sciences with languages and two of its four schools were concerned with Social Sciences, one with politics and international relations and one with Sociology and Policy, and the other two were concerned with languages. One of the other pre-92 universities combined Social Sciences with Humanities in the same faculty while the other one focused entirely on Social Science disciplines with a mix of critical academic and more applied professional approaches. Thus, in most of the institutional contexts, there was a mix of the academic, the vocational, and the professional, with quite strong elements of multi-disciplinary and inter-disciplinary teaching.

The main points emerging from the interviews with the Social Science deans will be summarised under three broad headings: (i) the assessment of teaching, (ii) conceptions of good teaching, (iii) learning outcomes, including employability. There will then be a brief review of findings from the online survey of deans associated with the HEA relevant to the Social Sciences.

(i) The assessment of teaching

In most of the universities, university wide procedures for the monitoring and assessment of teaching quality had been introduced in recent years and took little or no direct account of disciplinary characteristics. At one of the pre-92 institutions, 'excellence rewards' were available to teaching staff based on results from questionnaires given to students covering teaching, teaching materials, assessment and feedback provided by teachers. At this university, there was also an institutional policy of requiring marking and feedback to students on assessments to be completed within four weeks and there was a module reflection form which staff themselves were required to complete. However, although a university wide policy, the faculties are centrally involved in its operation. Student feedback forms went anonymously to teachers, module leaders, managers and associate deans. The associate deans were expected to deal with any problems but also to disseminate any examples of 'excellence'. However, recently, a more collegial approach had been introduced with peer review of teaching and a greater emphasis on student engagement. Students are now viewed as 'partners' rather than consumers, sitting on boards, attending departmental meetings, getting involved in curriculum development.

At another pre-92 university, institutional procedures had also been introduced but there was also recognition of 'variation' across the institution in the criteria and processes used in assessing and rewarding 'good teaching'. Individual departments had some choices in what to use from a 'portfolio of measures' that were available to them. This particular institution recruited 'good students', a high proportion of whom were international and from different parts of the globe. This had implications for the assessment of teaching excellence. On the one hand, excellence was being achieved in terms of the excellent learning outcomes these students were producing. On the other hand, the considerable variation in the previous educational experiences which the students brought with them from their different international locations led to different student expectations of their teaching and to considerable challenges to teaching staff in meeting those expectations. Where there are considerable differences between students in their conceptions about what constitutes a 'good lecture', it can be very difficult to satisfy the student body as a whole.

At one of the former polytechnics, both staff and students could nominate teaching staff for 'excellence in teaching' awards. Nominations were judged by a university panel and, at faculty level, staff could apply for fellowships, which provided them with a small amount of funding to

resource the development of their teaching. At another institution (again a former polytechnic), there was a general university system of teaching observations carried out by a central service and these did not take any account of disciplinary differences. At the same time, at faculty level, there were awards to staff based on student nominations.

Staff responses to these kinds of institution-wide processes were generally regarded by the deans as mixed – welcomed by some and criticised by others. One of the deans interviewed was quite critical of these university processes, as they tended to place too much emphasis on student satisfaction and teaching performance. This dean advocated a greater emphasis to be placed on learning outcomes as a measure of teaching excellence, using these to identify and then to investigate the teaching processes that had produced them. There needed to be a debate across the institution about what 'good' teaching consisted of.

Thus, although there were institutional processes for assessing teaching at most of the universities, these generally did not appear to offer explicit definitions of what constituted 'good teaching'. And since these processes seemed mainly to be implemented at faculty levels – generally involving both students and staff – conceptions of quality would be likely to contain some disciplinary elements. In a majority of faculties, there were also more informal and discipline-relevant processes through which the quality of teaching was being judged and recognised. As one of the deans noted with regard to 'good teaching', "you can recognise it when you see it." Another of the Social Science deans felt that ill-defined conceptions of teaching quality were being imposed by the university and risked replacing the discipline-based conceptions:

if you're a teacher in the university, part of your perception of what's good is going to be your own discipline-based ideas in terms of an academic in economics will have an idea of what a 'good economics' graduate looks like, what sort of knowledge they should have, what sort of theories they should have, etc. So that would be one level. You'll then have transposed on that the more university-level kinds of questions about expectations. So, focusing on the NSS, employability data, retention etc. ... In many ways, the contemporary academic is faced with a range of different definitions of what's good teaching or what good outcomes are, and it's in many ways trying to combine those and make sense of them. (Social Science dean at a post-92 university)

There was both anxiety about the effects of the introduction of the TEF, and especially the reliance on metrics, along with some hopes that it would lead to some useful changes in institutional cultures, raising expectations and posing new questions about what constituted teaching excellence and how it could be delivered. The teaching function was universally considered to be important but there were differences in approach at different institutional levels. A growing

diversity in the backgrounds of students was a further complicating factor at several institutions, as was the balance, and to some extent the tensions, between 'individual' and 'shared collective' forms of excellence. An excellent lecture? An excellent course? An excellent experience? Excellent outcomes? All were required.

(ii) Conceptions of good teaching

So what were the conceptions of good, or even excellent, teaching within the Social Sciences? There were disciplinary differences within faculties, generally reflecting the differences between the academic disciplines and the more vocational or professional fields. In the latter, there were frequently externally set standards that needed to be achieved in order to meet the requirements of future employment. Employment concerns were not entirely absent from the more academic disciplines as well, but they were expressed differently, as "professional skills for life", in the words of one pre-92 university dean. And in the more vocational and professional fields, generic qualities such as flexibility and critical reflection were still required. As one of the deans from a former polytechnic remarked, many law graduates would not obtain employment in the legal profession and would need the more generic academic qualities that would be relevant to employment across a wide range of occupations.

Features of good teaching, which appeared to be relevant across the Social Sciences appeared to be the development of engaged, critical students and this was often seen to be best achieved through more interactive forms of teaching encounter. Indeed, the generally one-way transmission of knowledge by means of a traditional lecture was, for some staff, something that could be replaced by the Internet and new information technologies. One of the post-92 university deans remarked, with regards to 'good teaching', that:

You have content which is engaging, you are respectful of the students, you build a series of tasks which allow for appropriate integration and facilitation between the member of staff and the students, and you work together. (Social Science dean at a post-92 university)

The same Dean went on to emphasise that good teaching did not necessarily equate to student satisfaction. Indeed, good teaching could make students feel quite uncomfortable:

Most of us do most of our really high-end learning when we are outside of our comfort zone, and that's part of the job of higher education, to push people into that area. In those moments, we are not hugely satisfied but that's a means to an end to get them to be satisfied because you've moved their thinking on. Some students don't quite get that in that moment of time. (Social Science dean at post-92 university)

Several deans also noted that good teaching entailed overcoming particular obstacles to good teaching. These tended to include larger class sizes and more diversity in student backgrounds, but could also include the effects of greater managerialism and consumerism within institutional and student cultures. In relation to the latter, student fees could be having an effect. In the words of one of the post-92 university deans:

If students perceive they are paying for something ... there is an expectation that they get good quality ... and I think that's the right thing. So, the teaching and learning needs to be engaging, the infrastructure around them needs to be appropriate for what they are doing ... The slightly negative side of that is that they still have to engage with the process ... It's not the paying for the membership and going to the gym that gets you fit, it's you engaging with the activities when you're in the gym ... There is a bit of a perception from the students of, "I've paid my money. I want my degree". If they don't engage and turn up, we can't deliver that. (Post-92 university Social Science dean)

And as a Dean from a pre-92 research university remarked, there was also a conception of 'good teaching' as 'good theatre'. Different institutional contexts and different kinds of students valued different things.

Conceptions of good or excellent teaching in the Social Sciences, therefore, tended to be multi-faceted and sometimes quite complex. They could not be reduced to student satisfaction or classroom practice, although both were relevant. Across the whole range of disciplinary and professional skills, there were broad notions of student engagement and interaction, of criticality and independence in learning, all qualities that students would need to take with them into their future lives beyond graduation.

(iii) Learning outcomes, including employability

As noted above, the Social Science faculties where the interviewed deans were located tended to possess a broad range of disciplines plus inter-disciplinary groupings bound together by vocational or professional linkages. In most of the institutions, courses and students in the traditional Social Science disciplinary fields such as Economics, Politics and Sociology tended to be in the minority. But what tended to link a lot of the statements about university teaching were concerns about students' futures, which included the jobs they would get, but were not limited to employment. There was a recognition of uncertainty, change and risk for students in their future lives, and a main purpose of a good higher education lay in enabling students to overcome uncertainty and risk, and to be able to change and develop themselves in response to changing external circumstances. These were the 'professional skills for life' that one of the deans had referred to.

One of the Deans, at a pre-92 university, emphasised a sense of citizenship. The faculty wanted to produce “critical thinkers and global citizens”. “Social awareness and responsibility” were also mentioned. And employability was also relevant to all students, not just those on the more vocational and professional courses. Part of the challenge of good teaching was to successfully combine “employability skills at the same time ensuring the quality of the academic rigour”. A Social Science degree needed to be relevant to you for the rest of your life, wherever that life took you. That was the message that, to different degrees, came out of the interviews with the Social Science deans. And in consequence, as emphasised by some of the deans, conceptions of teaching excellence did need to place a lot of emphasis on the learning outcomes that the teaching had produced.

(iv) Summary

From the interviews with the Social Science deans, a picture emerged of increasing institutional demands on teaching processes that required serious responses from faculty members. But there was a fair degree of compliance in the nature of the responses. And there were a number of tensions evident in institutional contexts: between teaching and research excellence, between the student as ‘learner’ and ‘consumer’, between formal ‘managerialist’ and informal ‘collegial’ approaches, and so on. However, alongside the institutional-level requirements, there did seem to be a serious awareness by the deans of the changing needs of their students and the importance of equipping them for possibly quite uncertain futures. Both individually and collectively, the Social Sciences appeared to be responding to those changing needs and circumstances, in different ways and to different extents in different disciplinary fields and different institutional contexts, but broadly sharing the view of critical and interactive academic engagement and social responsibility as core features of the Social Science student experience.

(v) Social Science deans responding to the larger survey

In the larger sample of deans responding to the online survey, Social Science deans placed most emphasis on the importance of quite traditional teaching factors. Ninety per cent of the Social Science respondents regarded as ‘very important’ the factors of ‘up-to-date and relevant curriculum’, ‘well-prepared lectures’, and ‘feedback to students’. While these factors were also emphasised by deans across all disciplinary groupings, the importance assigned to them by Social Science deans was greater than for the sample as a whole. Seventy per cent of the Social Science deans placed a similar emphasis on ‘opportunities for discussion and debate’. While other factors were assigned some importance, they received greater emphasis in other disciplinary fields. For example, 57.1% of the overall deans’ survey gave a rating of ‘high importance’ to ‘effective technical or practical training’ and 51.2% gave a similar rating to ‘work-based learning’ and 52.4%

to 'strong research skills' while the figures for the Social Sciences were 40% for each of these factors (see Appendix 5 for more detailed figures).

With regard to the student qualities and attributes most valued by academic staff, all of the Social Science respondents indicated that 'critical and analytic skills' were very important. This confirmed the emphases coming out of the interviews with Social Science deans. Critical and analytic skills were accorded considerable emphasis across the survey as a whole, but not quite to the extent that they were from the Social Science deans. The other factors given high importance by the Social Science deans were in line with these values. Being 'knowledgeable of the field of study' was highly important to 88.9% of Social Science deans, 'competent written communication' 77.8%, 'questioning' 66.7%, 'competent verbal communication' and 'professional standards' both 55.6%. All of these factors were also important to deans from other disciplinary fields, but the other deans emphasised a wider range of qualities and attributes. Thus, 59% emphasised 'capable practitioners' (Social Sciences 37.5%), 47.5% emphasised 'creativity' (none of the social scientists did), 57.5% emphasised 'technical skills' (Social Sciences 33.3%), and 70% emphasised 'knowledge of a field of practice' (Social Sciences 44.4%) (see Appendix 5.)

Many of the above differences might be regarded as predictable and reflective of the intrinsic features of different disciplinary fields, as well as different relationships to the world of work. However, there were also some differences that were less easily explained. Thus, no Social Science deans accorded high importance to 'individualistic' attributes in graduates or 'experienced in field of employment' whereas 15.4% and 22.5% respectively of deans overall did so. Other factors where there were quite large differences between the responses of the Social Science deans and the deans' responses overall were in 'emotional skills' (25% compared to 11.1% for social scientists), 'concerned with practical problems (45% compared to 11.1%), and 'flexibility' (35% compared with 22.2%). Even with certain factors which might be expected to be valued highly by social scientists – 'aware of wider social and economic context', 'cross-culturally capable', and 'concern for social justice', they received less emphasis from the Social Science deans than they did from the deans overall (see Appendix 5).

However, caution is necessary in the conclusions drawn from these figures. It was not a very large sample and, as we have discussed earlier, there is also considerable internal variation in emphasis within the four disciplinary clusters. Nor should these disciplinary differences necessarily be regarded as weaknesses within the Social Sciences. The strong emphasis on 'critical analysis' reflected in both the interviews and the survey data may be something that brings greater criticality to assessments of the quality and attributes of graduates within the Social Sciences.

Insofar as the Social Science disciplinary fields possess some distinctive features, it also appeared that they were generally being applied to most Social Science teaching, irrespective of context. None of the Social Science deans surveyed believed that considerable differences were required in teaching their disciplines on multi-disciplinary or vocational courses, whereas 30% of the deans overall believed that such differences were required.

Finally, there were two questions where Social-Science dean responses were broadly in line with those of other deans. 12.5% of Social Science deans, and 18.4% overall, believed that diversity in educational and social backgrounds of students required different approaches to teaching. And 35.1% of Social Science deans, and 35.1% overall, believed that there had been major changes in conceptions of 'good teaching' within their faculties over the last five years.

(vi) Social science deans: some conclusions

From both the interviews and the survey data, there is a strong picture of an emphasis placed within the Social Sciences on issues of 'criticality' and 'social responsibility' as central features of a Social Science education. However, from the interviews with the deans, there is also a picture of diversity within the Social Sciences, partly reflecting differences in academic/professional balance and partly reflecting differences in institutional contexts. Also from the interviews, there is some indication of tensions between internal and external drivers of change with the latter reflecting forces both within and beyond institutional contexts. Viewed in their more extreme forms, these external forces are seen as potentially dangerous and damaging to essential features of a Social Science education: the criticality and social responsibility as referred to above. Thus, responses in some contexts may take the form of minimum compliance with the formalities of external requirements while informal practices within faculties and departments remain shaped by disciplinary traditions and values.

However, it must also be remembered that change can be 'bottom up' as well as 'top down' in all organisations. A message that came out of several of the deans' interviews was of considerable social and economic changes bringing with them quite uncertain futures for their students. Thus, higher education needed to prepare students for future lives that were largely unknown at the time of their studies. Students needed a higher education experience that would prepare them for flexibility, criticality and uncertainty in their future lives.

3.4. STEM subjects cluster

We carried out eight STEM interviews in total with seven deans or equivalent from different institutions and one full-time member of academic staff. Two of the deans were from pre-1992 intuitions, one of which is considered research-intensive. Of the four deans interviewed from post-

1992 institutions, three were from institutions that are former polytechnics and one was from a specialist research-focused institution. The member of full-time academic staff was from a post-92 university focused on adult learning.

The HEA's STEM cluster includes the following disciplines: Biological Sciences, Built Environment, Computing, Engineering, Geography, Earth and Environmental Sciences, Mathematics, Statistics and Operations Research, Physical Sciences, and Psychology. The targeted literature analysis of STEM-focused journals identified distinctions between STEM subjects in terms of their academic and practical focus. This ranged from strongly academic (Mathematics, Physics, and Biological Sciences) to strongly vocational disciplines (Engineering, Built Environment, Statistics and Operations and Computing). The findings of the literature analysis suggest that STEM subjects endeavoured to generate pragmatic, critical and analytical students. However, vocational disciplines were more concerned with practical skills and professionalism, and were interdisciplinary. Students of vocationally focused disciplines were expected to be professional and highly skilled. Approaches to teaching and learning varied. For example, engineering was the most active discipline in terms of introducing and testing a wide range of innovative pedagogic approaches. There was evidence of use of learning technologies across almost all disciplines, including computer/web-based simulations (Physics, Statistics, Computing and Engineering); discipline-specific software (Physics, Maths, Biology, Geography, Statistics and Computing); animation/video annotation software application (Physics, Biology, Psychology and Geography); 3D visualization/3D geo-visualization (Built environment; Biology and Geography); and mobile learning application/I-pads (Biology and Geography). Inquiry based learning (IBL) is an emerging trend in STEM pedagogy, especially in the pure sciences, but teachers do not feel well equipped and well trained in the use of IBL methods in teaching contexts.

Interview participants from STEM subjects were not typically confined to one faculty. Instead, they were distributed across a range of faculties, colleges, schools and departments, sometimes alongside disciplines from other HEA clusters. Two institutions included in the study had faculties that were entirely or almost entirely made up of STEM subjects but STEM subjects were also situated in other faculties. For example, Psychology is often placed with Social Sciences. In one institution, some STEM subjects, including Biosciences, were in the same faculty as Health, Social Sciences, and Humanities, while Engineering, Computing and Maths-based programmes were in another faculty. In another, STEM subjects spanned four faculties. The inconsistent distribution of STEM subjects across institutions meant that the deans interviewed did not necessarily oversee teaching and learning for all disciplinary areas included in the cluster, even if they were taught within their institution.

All institutions offered both vocationally/professionally oriented and theory heavy courses. However, the former appeared to outnumber the latter in terms of number of courses available, according to deans' accounts of student numbers and course size. However, the distinction between academic and vocational courses is not clear-cut: disciplines typically considered academic, such as Maths, were delivered through programmes comprising of both theory heavy modules and practical/vocationally oriented modules.

(i) Pedagogic approaches and techniques: reality versus expectations/hopes/aims

In this section we discuss the range and variety of pedagogic approaches currently employed in UK institutions, based on the deans' interviews. We also discuss deans' perceptions of 'good teaching' in light of the disciplinary, institutional and other contextual factors that shape their ideas and those of staff and students within their institutions.

The traditional didactic lecture format was the most consistently employed pedagogic approach across all institutions, according to the deans that participated in the study. It was considered to be the default approach. STEM subjects were also taught in lab sessions, smaller discussion groups, and programmes included distance learning and placement components. Interwoven through these various teaching formats were a variety of teaching and learning approaches, including flipped classroom, problem-based and inquiry based learning, simulations, and use of real "things and data". Institutions used technology to create new learning experiences for students (e.g. virtual labs), and to enhance teaching approaches already in place (e.g. the use of technology to make simulations more realistic). While the interviews suggest a general move away from didactic lectures to other teaching approaches across STEM, we also found there were differences in deans' accounts relating to disciplinary orientation, course type (e.g. vocational) and institution.

At the discipline level, 'pure', theory based disciplines such as Physics and Maths tended to employ informal, interactive and flexible teaching approaches. It is unclear if this is the result of pedagogic traditions within the discipline, or other factors, including resources and student expectations. One dean in the study stated that the small number of students on Maths programmes facilitated small-group, discussion-based teaching formats. Across the board, smaller group sessions, including experimental laboratories and discussion groups, were seen as more desirable. However, limited resources prevented wider use of such formats, particularly for courses with high student numbers, such as engineering.

Discipline-specific student expectations also influenced pedagogic approaches between Maths and Physics students, as observed by one of the deans discussing student feedback:

The Maths students will give really poor ratings, in some modules, and the physics students will absolutely love it, and vice versa. The Maths students really want the traditional, didactic. All they want in a room is a white board and for the lecturer to be going through all the theories, explaining and drawing them out in that lecture. If they are taught in a different way, like some of the other disciplines, physics is a bit more applied, it's more PowerPoint, or it's more didactic from that point of view, they do not like it.

Student types also reportedly differ between the disciplines according to "sector norms" which influenced the kind of teaching approaches considered appropriate and effective. For example, one dean explained that Archaeology students are a lot more laid back than engineers, and that learning approaches and expectations match this (e.g. by being more or less formal).

There was little consensus on differences between undergraduate and postgraduate courses. One dean (pre-1992, research) thought that undergraduate courses were about developing "amphibious" students that are comfortable in more than one place and who are expecting more than one career, whereas postgraduate study was more about research and students are expected to do a substantial project. In contrast, another dean stated that the UK was moving towards a system of much broader science postgraduate courses and more specific undergraduate degrees, driven by demands from employers, so that they understand exactly what a Chemistry, Forensic, or Biomedical Science graduate can do. For another dean, the disciplinary differences were less pronounced at postgraduate level, as employment became the overarching concern across the board.

One dean thought that the pedagogic approaches employed in single and multi-disciplinary courses differed: project-based and team work were more prevalent among multi-disciplinary courses, which also included a more vocational or professional reference point with implications for the content and method of knowledge transmission to be employed.

Institutional context was found significantly to shape the range and balance of teaching approaches employed and ideas about 'good' teaching. These differences were connected to three factors: (a) the extent to which teaching was valued in the institution and the allocation of resources to teaching, (b) types of students and (c) institutional objectives.

Typically, research-focused universities were more reliant on traditional, didactic based lectures. In these contexts, there are fewer resources than needed to implement other, more costly approaches, such as smaller group sessions. In contrast, in former polytechnics and other post-1992 universities, where teaching is valued in relation to research, there was much less discussion

of resource-related barriers to implementing a range of teaching approaches. In some instances, investment in infrastructure and facilities was awarded on the condition that faculty employ more innovative pedagogic approaches and move away from traditional lectures. These universities also invested in training and development for staff to research and develop their pedagogic approaches.

(ii) Learning outcomes/objectives, including employability

The pedagogic approaches and strategies in place and desired varied according to learning outcomes/objectives, which were found to align with the level of vocational/professional orientation of courses rather than discipline per se. In one university (pre-1992, research-focused) Bioscience students were expected to go into a wide range of careers. In the past, the courses would be geared towards developing “white coat scientists” following the PhD route. But with the widening of employment outcomes, programmes now include optional modules and late specialisation and seek to develop generally applicable skills – such as critical analysis – and thereby smaller, discussion-based formats were deemed more effective. Another dean gave a similar account of life sciences in his faculty (post-1992). He added:

it becomes much harder in actual teaching programmes to identify specific skills, as you would with engineering and computer science, where there are precise skills that employers want students to gain.

Focusing on Biology, the same dean said:

we are very focused on the academic disciplines’ notions of knowledge, there is less emphasis on the practical skills, even though there is a very strong practical component within that.

One dean discussed the variety of approaches employed across Computer Science courses depending on the emphasis on theory or practical skills, with the latter requiring more laboratory-based teaching.

In contrast, where courses had a strong and relatively fixed vocational/single professional trajectory, deans favoured pedagogies that developed specific knowledge and skills in students. In some instances, a common first year had been created to make sure that students become, “first and foremost, engineers.” For vocationally oriented subjects, hands on, practical experience was paramount and some schools were reforming how they deliver practical training. In the words of one dean, it was imperative to “get the practical in first” and then underpin it with theory

afterwards, in place of the traditional formats whereby discussion precedes the practical application of knowledge.

There were, however, disciplinary differences within this driven by subject and professional identities. For accredited courses, professional accreditation bodies influenced teaching, including the allocation of resources for facilities, and, in many cases, employers directly influenced learning objectives. For example, the pharmaceutical bodies require Pharmacy students to learn using clinical practice facilities. Likewise, a dean with a Computer Science background said that different teaching approaches were needed to prepare students for the sector, but also commented on the complexity of addressing employers' (varying) expectations:

It is not a single thing: it is not even a list of three or four, you know, problem solving, communications, and team working. It is actually far more complicated than that. So we got requirements from small tech start-ups which are completely different from big financial technology companies. It's actually very difficult identifying a core group of skills. ... One comes up, I am afraid, is cultural fit, that is again something they can't prepare our students for.

While the objective of making students employable was common across most disciplines, it was felt that teaching approaches needed to respond to different benchmarks between, and sometimes within, disciplines.

We found that different kinds of institutions had different objectives, including ideas about their role as educators, and the kinds of skills and knowledge they should equip students with, requiring different pedagogical approaches. They were very mindful of their students, and pedagogy was often aligned with students' needs and demands. Post-1992 universities generally focus more on employability and developing soft-skills in students, as they are perceived to be lacking in these when they arrive. In less research-focused universities, teaching was shaped by partnerships with employers and student employment in the sector aligned with the discipline was seen as the ultimate goal.

(iii) The status and challenges of teaching and learning

A reoccurring theme throughout interviews with deans in the STEM cluster was changes to the assessment of teaching excellence and the increased emphasis on teaching within universities. Deans reported greater focus on teaching and learning in the past two years, including an increase in the perceived value and status of teaching, from management, staff and students. These changes were attributed to sector-wide changes, such as the introduction of £9,000 fees (in England), the TEF, and the NSS. While deans were generally very positive about teaching's

increased status within universities, external pressures that have contributed to this were not regarded as wholly positive, and deans dwelled on the negative impact of these changes. For example, almost all interviewed STEM deans mentioned the impact of a consumerist student mentality – caused by the increase in tuition fees in 2012 – on learning and teaching approaches. In the words of one dean (pre-92):

Students have become sponges. They ask us to tell them answers and get cross when we tell them to find out. The learning process is about them finding out but if we don't give it them you pay. Reading towards a degree means different things now as you see in NSS. Students no longer invest in a degree beyond the monetary investment.

Across all institutions, the interviews revealed that deans felt that their faculties faced a number of shared challenges to providing excellent teaching. These include facilities, resources, student kickback, staff technological competence, staff resistance, and meeting and managing the expectations of students, professional bodies, and/or employers' expectations. The extent to which these challenges prevented the uptake of other pedagogic approaches was tied to institutional factors, such as resources and strategic objectives.

Some deans found that students' teaching and learning experiences prior to higher education influenced receptiveness to different pedagogic approaches and techniques, and that this varied across disciplines. For example, in one university, Engineering and Computer Science students were generally accepting of non-traditional approaches. Yet the introduction of these into Life Sciences or Chemistry had a disorientating effect on students. The dean felt this was because in Life Sciences or Chemistry students are taught predominantly in a lecture-based format, so when they are asked to do something different, they lack confidence. The solution? "I think we need to do much more in the way in which we help students' transition to university."

Many deans reported that responsiveness and willingness to incorporate different teaching approaches varied at the individual staff level, with some staff very motivated and proactive with regards to teaching and learning, and others not. Another dean (post-1992) spoke of more widespread negative attitudes among faculty:

There is a perception that if we move from content delivery to learning by doing, we are dumbing down. This is a very common perception. In many of the STEM disciplines, there is this issue about the use of soft skills, soft employer skills. Many staff do not see the value in that, even though it is very valuable for students to develop those skills.

Deans also addressed the issue of gender inequality and lack of Black and Minority Ethnic (BME) students in STEM, which some thought needed to be addressed at least in part by approaches to teaching (along with other things, such as student recruitment and marketing). Across all institutions, deans were aware of skills that some students were lacking, including basic Maths and English.

(iv) The assessment of 'excellent teaching'

A wide range of metrics, measures and indicators were discussed in relation to excellent teaching. There was a general consensus of the dangers of over-reliance on one measure as there is no 'gold standard'. Almost all deans talked about issues with satisfaction surveys. The majority thought that peer evaluations were meaningful and useful. Attendance and exam scores, engagement, student evaluations, employers' perspectives were perceived to be problematic, especially when used as a sole measure of teaching excellence (particularly, post-1992). Most wanted a combination of measures of good teaching and were mindful of the need for peer review, statistical data (that includes institutional, programme, and discipline-level data) and indications of student engagement (that are not over-influenced by students' enjoyment).

(v) STEM deans responding to the larger survey

The survey collected responses from a larger sample of deans responsible for STEM clusters: 25% ($n = 18$) of the sample selected STEM as the subject grouping that aligned with the subjects they are responsible for. When asked about factors regarded as constituting good teaching within their faculty, deans in this cluster placed the most emphasis on 'good critical feedback to students' (91.7% of valid responses). However, this was rated as 'very important' by 85.7% of deans (valid responses for Q7), and STEM deans were not unique in valuing this aspect of teaching. However, important factors for STEM deans when compared to the wider sample include 'effective technical or practical training' (75%), which was rated as 'very important' by just over half of the sample overall (57.1%) and 'strong research skills (66.7%), which was emphasized as very important by 52.4% of the wider sample. These results align somewhat with the findings from the interviews, particularly the emphasis on practical and technical training. Only 25% of STEM deans placed high importance on 'appropriate use of new technologies' for good teaching and 'effective use of new learning technologies', both of which received greater emphasis by deans from the other disciplinary clusters. Compared to other discipline clusters, STEM deans placed less emphasis on the importance of an 'up-to-date and relevant curriculum' (58.3% STEM; 78.6% overall). STEM deans also placed the least emphasis on 'opportunities to discuss and debate' (41.7%) compared to other clusters. This contrasts, somewhat, with the findings from the interviews, whereby the deans appeared to value smaller, discussion-based formats even though there were practical barriers to the use of these approaches (see Appendix 5, Table 3.1).

All of the STEM deans responding to Question 8 (see Appendix 5, Table 4.1) regarded as 'very important' a number of student qualities and attributes highly valued by academic staff, including 'knowledge of discipline' and 'adhering to professional standards.' This partly aligns with findings from the interviews, whereby deans spoke of the influence of professional standards on teaching and learning. In addition to 100% for 'knowledge of discipline', 91.7% of deans thought that 'knowledgeable of field of study' was an attribute and skill in students valued by staff in their field. The findings from the survey surrounding knowledge support findings from other parts of the study about the top-down nature of knowledge in STEM subjects. However, interestingly, just 58.3% of STEM deans emphasised the importance of 'knowledge of field of practice', the second lowest of all three disciplinary clusters. 'Research skills' were emphasised most by STEM deans compared to other disciplinary clusters (91.7% STEM, 60% overall). 'Technical skills' were also considered very important by the majority of STEM deans, which is unsurprising given the technical focus of many subjects in this area. However, broader skills such as 'critical and analytical skills' and 'competent written communicator' were also regarded as very important to staff from the viewpoint of the deans.

The qualities and attributes in students that were not perceived to be 'very important' by STEM deans when comparing with the sample as a whole were somewhat predictable based on disciplinary traditions including vocational trajectories, such as 'emotional skills' (0% STEM vs. 25% overall), 'ability to empathise' (8.3% vs. 27.5% overall), 'creativity' (25% vs. 47.5% overall) and 'concern for social justice' (16.7% vs. 30% overall).

Interestingly, when asked about influences on conceptions of 'good teaching' within the faculty, STEM deans placed less emphasis on the importance of 'the faculty's disciplinary traditions': 25% of STEM deans considered it to be a 'very important' compared to 85.7% of Health and Social Care deans, for example.

STEM deans also differed from the other clusters in the emphasis placed on 'the institution's current leadership and policies' which were considered 'very important' influences on conceptions of good teaching within the faculty by 75% of STEM deans responding to the question, compared to 46.3% overall. And 'the faculty's current leadership and policies', which was considered very important by 83.3% of STEM deans compared to 67.4% overall. Yet, STEM deans placed less emphasis (33.3%) on the importance of 'the institution's traditions and culture' than respondents from other disciplinary clusters (e.g. 70% for Social Science deans).

STEM deans aligned with other disciplines when asked whether disciplines on multi-disciplinary/inter-disciplinary courses or on vocational/professional courses require difference approaches: 30% stated 'considerable differences' and 70% responded 'some differences'. There

were also differences in the extent to which diversity in the educational and social backgrounds of students require different approaches – more STEM deans responded 'no differences' (27.3%) compared to 16.4% overall.

However, given the small sample size, it is important that all of these results be treated with some caution.

(vi) STEM deans: some conclusions

In sum, the interviews with deans from the STEM cluster illustrated the subjectivity of conceptions of good teaching and much emphasis was placed on what students from different subjects expect and respond well to, with apparent divisions between subjects that were more heavily vocational or academic. The practical aspects of different subjects – such as student numbers and amount of practical, skills-based training – also influenced the type of teaching and learning approaches deemed necessary. Despite differences, employability was one of the key learning objectives across all boards. Even when developing specific knowledge, deans talked about the institution-wide and sector-wide skills, characteristics and attitudes they sought to instil in their students. The dominance of traditional teaching approaches was attributed mostly to barriers to implementing a diverse range of approaches, including limited resources, institutional context, disciplinary traditions, student expectations and staff resistance. Newer pressures, such as the consumerist mentality of students and limiting assessments of teaching, were also found to create an environment that dampened creativity and innovation in teaching in some respects, although the status of teaching had increased. However, for institutions where teaching is valued as much as or above research, there were greater resources allocated to teaching, learning and facilities, which was perceived to be a positive outcome. Deans favoured a range of metrics for assessing excellence teaching, in order to facilitate experimentation and the development of innovative teaching approaches, and so as to adequately take into account the broad range of factors that make teaching 'good'.

3.5. Disciplinary and institutional differences in the perspectives of deans

There were differences in emphasis in the perspectives of deans both within and between the four disciplinary clusters and between the different types of institutions in which they were based. But there were also similarities in priorities and concerns, and in some patterns in the reported differences, for example, between the more vocational/professional fields and the more academic. Although concerns about academic rigour and relevance to employment were present across all disciplinary fields, they were expressed in different ways.

Below, we attempt to summarise some of the main similarities and differences between disciplines using the project's five main research questions.

(i) *What is the range and balance of pedagogic approaches employed by teaching staff within their discipline?*

Pedagogic approaches reflected disciplinary traditions, but they also showed the effects of the expansion and differentiation of higher education in recent years and its changing policy and regulatory contexts. Particularly in some of the well-established universities, emphasis on the transmission of knowledge content remained in particular subjects, particularly the STEM fields. In other disciplinary fields, approaches were more interactive and student-centred, emphasising the critical engagement of students and independence in their learning. The Arts and Social Science fields, in particular, tended to emphasise this kind of approach. A similar pattern was evident in newer universities, although here there was a greater emphasis on employability considerations, and these took different forms according to academic, vocational and professional contexts. Concern about students' futures, in employment and more generally, were expressed in pretty well all institutions. For students taking more academic courses, employment futures were often not easy to predict, although the same was true for students taking more vocational or professional courses, in fields where the numbers of students graduating each year were exceeding the job vacancies in the particular professional or vocational field. For these reasons, there was a lot of emphasis on pedagogic approaches that emphasised the development of 'soft' and generic skills, which would be widely applicable in the labour market and not limited to specific vocational fields. Many of these approaches emphasised student interactive learning, independence and engagement. Generally, courses were more student-centred than subject-centred, taking account of factors such as employability and widening participation considerations, and often with interdisciplinary and multi-disciplinary content in order to meet student needs. However, in some of the professional fields, strong external requirements and expectations from a professional body tended to override local institutional considerations.

There were also clearly growing pressures from the institutional levels in many places to shape pedagogic approaches in directions felt to be beneficial to institutional reputations. These concerned student satisfaction levels, in particular, and several institutions had introduced new institutional procedures in attempts to improve teaching quality. These included student evaluations, teaching observations, various forms of staff development and reward systems based on achievements in the teaching function. Some deans expressed doubts about the effects of some of these processes. The emphasis on satisfied and 'happy students' was felt to be misguided by some of the deans and carried the danger of undermining the challenging and demanding nature of a higher education degree course.

Turning to the pedagogic techniques employed in different disciplinary contexts, there was an expected variety between and within the disciplinary clusters. These included traditional lectures and seminars, most commonly found within the 'pure' disciplines, and more innovative simulation activities in many of the more vocational and professional fields. There was also considerable use made of information technology across all disciplines and institutions.

Institutional differences appeared to be considerable, reflecting factors such as the status, focus and resource devoted to the teaching function by the institution, the types of students recruited, and the institution's overall mission and objectives. Post-92 universities did appear to devote more of their available resources to developing innovative pedagogies, while pre-92 universities placed more emphasis on traditional lectures. That said, since the post-92 universities tended to have less resource overall, they were more likely to face problems of overcrowded lectures and classes. In some places, digital lectures appeared to be the solution to the latter problem.

The range and balance of pedagogic approaches employed reflected a variety of factors, including institutional priorities, student demands, 'pure' and 'applied' fields of study and the extent of inter-disciplinarity in course designs. There were also differences in the emphasis placed on independent learning by students, the importance of student engagement, and the extent of the criticality expected of students and provided by their teachers. Critical perspectives were particularly emphasised by deans within the Social Sciences and the Arts and Humanities disciplines.

(ii) What is considered to reflect excellent teaching in the disciplines?

Here, there were considerable differences between individual deans as well as between disciplines and institutions in the perspectives on 'excellent teaching'. The measures used ranged from student 'satisfaction' to teaching 'performance' to learning 'outcomes', with a varying mix of emphasis in the latter between 'criticality' and 'relevance'. But there were also concerns expressed about all of these factors. Where student 'satisfaction' was equated with student 'happiness', there were sometimes concerns that students were not being sufficiently intellectually challenged and that too much emphasis was being placed on the short-term rather than the long-term. Similarly, with teaching 'performance', some deans expressed the view that teaching should be demanding and sometimes uncomfortable for students. Several deans preferred to emphasise 'student engagement' as the central aim and indicator of excellent teaching.

In some institutions, and among some deans, there were doubts expressed about the effects of recent institutional policies and initiatives to encourage and reward 'excellent' teaching. The doubts did not concern the aims of such exercises – everyone approved of 'teaching excellence' – but the effects. Some deans felt there was a danger these produce compliance and conformity in

teaching, undermining the essential 'professionalism' of academic work. Essentially, system and institutional conceptions of teaching excellence could shift authority away from the disciplinary contexts of university teaching. For example, where observation of teaching practice was carried out under a system of peer review, sharing of good practices among academics within the discipline, this was welcomed, but it was suggested that where it was undertaken by 'managers' using generic, though often vague and ill-defined criteria, this could be, at best, irrelevant and, at worst, damaging.

Where deans emphasised the importance of learning outcomes and the effects on students, there could be differences in emphasis given to curriculum knowledge, critical perspectives on that knowledge, soft skills or generic skills, employability, and personal developments involving factors such as adaptability and identity. But what was a broadly shared view was the importance of university teaching in preparing students for their future lives, possibly quite uncertain futures within a fast-changing world.

Returning to some of the concerns expressed by certain deans, there was a belief in the importance of a good university education – to both the individual student and the larger society – and the danger that the 'wrong' measures of teaching excellence could damage and even undermine that 'good university education'.

(iii) How does this vary across disciplines and higher education providers?

In a sense, aims were almost universal but how they were to be achieved could differ considerably. The aims concerned, as noted above, the future lives of the students, and the knowledge, skills and attitudes they would need to live those lives successfully. Some disciplines emphasised the employment dimensions of those lives while others placed their emphasis on broader conceptions of personal development, though not to the exclusion of employment.

One of the interesting dimensions of the differences concerned the balance and relationships between the academic, the professional and the vocational in different disciplinary fields. But the differences were not as clear-cut as might have been expected. In some vocational or professional fields, there was recognition that many of the students would not go on to take employment in the relevant vocational/professional field. This might be because of a lack of suitable jobs or simply the changing preferences of the student. So even on vocational/professional courses, teaching had to take account of a diversity of possible employment outcomes. Not all law students become lawyers. Thus, for some disciplines, there was a felt need both to provide a vocational preparation for entry to a chosen profession or employment field, and to provide a broad education that would be relevant across a wide range of employment fields. And not all students would be sure about their direction of future travel at the time of their studies.

There were similar 'future' concerns expressed by some of the deans in the more academic disciplinary fields. Most of their graduates would certainly be getting jobs in the future. And the job market was changing and individual jobs would also be changing. Thus, courses needed to equip students with the capabilities to succeed in uncertain and unknown futures. Thus, conceptions of 'criticality', of 'independence', and of 'engagement' were likely to be relevant to all students in their futures, as well as being central to the academic disciplines they were studying at university.

Returning to disciplinary differences, it was clear from the interviews with the deans that some disciplines were more outward-facing, closely linked to employer needs and professional standards. Academic staff teaching in these disciplines often had experience of work outside of higher education. Health and Social Care was a particular example of this. It drew strongly on disciplines within STEM and the Social Sciences, but it drew equally strongly on a range of professional fields external to higher education. The perceived movement away from a subject, content-driven curriculum to more vocational, inter-disciplinary, inter-professional, and technology driven provision was a strong feature of some disciplines but was largely absent from others.

As one of the Social Science deans observed, "Conceptions of good or excellent teaching are generally multi-faceted and sometimes quite complex!"

(iv) Are there distinctive disciplinary or 'signature' pedagogies?

As we have already noted, there are disciplinary differences in pedagogies. Yet, at the same time, a lot of university courses are inter-disciplinary or multi-disciplinary. Many university academics spend much of their time teaching their discipline to students who are not taking specialist courses in the discipline but are studying it as part of a broader educational programme.

Insofar as there are some distinctive or 'signature' disciplinary pedagogies, they are probably to be found in some of the more professionally focused disciplinary fields, perhaps especially in the Arts and Humanities in areas such as Dance and Drama. Though more broadly, and returning to our literature review, Becher and Trowler's (2001) 'academic tribes and territories' should never be forgotten. For most academics, disciplinary identity remains central to their professional lives.

(v) Which pedagogic approaches are the most effective in terms of impact on defined student learning outcomes?

As already indicated, across a number of disciplinary fields, there was an emphasis on active student engagement and independence. One dean saw a movement from student as 'learner', to student as 'consumer', to student as 'partner' in the higher education enterprise. In reality, of course, the student may need to be all of these things.

However, an important question to ask here concerns the 'defined' student learning outcomes referred to in the question itself. Can all learning outcomes be defined? And whose definitions are to count? And might the most important outcomes be ones that are not defined? The evidence base for many of the claims being made about the relationships between pedagogic approaches and student learning outcomes appeared to be weak, especially when the diversity of students and the differentiation of institutions were taken into account. Part of the reasons for the doubts expressed by some of the deans about the desirability of some of the broader institutional strategies for improving teaching quality was that they did not see a sufficiently convincing evidence base for their effectiveness in improving learning outcomes.

4. Conclusion: Things we know and things we don't know about disciplinary differences in 'teaching excellence' in higher education

4.1. Things we know

- There are significant differences in the pedagogic approaches of different disciplines, both between and within the four HEA disciplinary clusters;
- There are significant differences in the pedagogic approaches of different disciplines, both between and within the four HEA disciplinary clusters;
- these reflect differences in traditions, in knowledge content, and in relationships of disciplines with the wider society. There are differences between academic, vocational and professional disciplinary approaches within all four clusters;
- these reflect differences in traditions, in knowledge content, and in relationships of disciplines with the wider society. There are differences between academic, vocational and professional disciplinary approaches within all four clusters;
- pedagogic approaches differ in terms of factors such as the roles and relationships between teachers and students, the degree of independence and engagement expected of students, the sources of knowledge and their modes of transmission, and the balance between a subject-centred and a student-centred emphasis;
- there tends to be greater variety of pedagogic forms in vocational and professional courses where academic and practitioner sources of knowledge become blended in various ways;
- within some of the vocational and professional fields, a significant number of graduates do not enter the relevant field of employment and this is often recognised in the pedagogic approaches employed, for example, by giving more emphasis to the development of 'soft' and 'generic' skills;
- in the more academic subjects, there is generally greater emphasis on the transmission of knowledge content using quite traditional pedagogic methods. Although in some fields, especially in the Arts and Humanities and the Social Sciences, there is a strong emphasis on the encouragement of 'criticality' and 'independence' in student learning, partly in relation to their employability but more broadly to their future lives as 'engaged citizens';
- there are also significant differences between types of higher education institution, partly reflecting differences in the students' educational backgrounds and aspirations, and partly reflecting institutional cultures and priorities. There is a tendency for the longer-established 'pre-92' universities to emphasise traditional didactic approaches and for the newer 'post-92' universities to be more innovative and to employ mixed-methods of pedagogy. However, this might also reflect the greater emphasis on student employability considerations by the 'post-

92' universities. There may also be differences in the balance between 'subject centred' and 'student centred' pedagogies in the different types of institution;

- > in many institutions, there appears to be a growing tension between disciplinary approaches and the requirements set centrally by the institution, the latter reflecting external regulatory and reputational factors, for example, the institutional rankings based on the NSS. There may be a danger of compliance in the responses of academic staff to these requirements. This could lead to an undermining of the professionalism and academic autonomy of the individual university teacher as well as a weakening of the distinctive disciplinary traditions in different subject fields. On the other hand, the increasing external expectations and requirements regarding the teaching function of higher education are raising the priorities being accorded it in most institutions, and this seems to be generally welcomed by academic staff;
- > another near universal trend is the increasing use of new technologies in learning processes, though there are also disciplinary differences here, not least in the extent to which academics are acquiring at least the equivalent levels of technical competence to those already possessed by their students;
- > overall, teaching excellence is multi-faceted, and many of its features are not easily measurable.

4.2. Things we don't know

- > Several of the deans interviewed as part of the study emphasised the relationship between pedagogic processes and learning outcomes as an area where reliable evidence was often lacking, especially with regard to the longer-term outcomes of higher education. There was a danger of focusing on the things that were more easily measurable, sometimes at the expense of other things that were equally, or more, important (e.g. the difference between 'getting a job' and 'doing the job');
- > this related to a lack of clarity about causality, especially in distinguishing between the effects of input and process factors. For example, were excellent student outcomes a product of excellent teaching or of the recruitment of excellent students? Some measures favour one interpretation over the other. Recruiting excellent students helps achieve good outcomes but it can make it more difficult to demonstrate 'learning gain';
- > there is very considerable diversity in the higher education student population, in relation to social and educational backgrounds, aspirations, support networks, nationality, age, race and gender and so on. To what extent do different students require different pedagogic approaches and different measures of 'teaching excellence'?
- > several of the deans interviewed mentioned the uncertainty of students' futures. They would be living in a fast-changing world. Higher education was an important preparation, but a preparation for what? There are two important questions to be asked of all students when

considering their pedagogic needs. The first is, 'Where are they coming from?' The second is, 'Where are they going to?' It is much easier to find evidence to answer the first question.

4.3. Recommendations

The increasing emphasis being given to the assessment of teaching in higher education is partly about restoring a more even balance of attention between the research and the teaching functions of higher education. But it is also recognition of the growing importance of higher education, both to the lives of individuals who experience it, and to the futures of the societies to which they belong. 'Quality matters' in both these respects. Below we list some recommendations of actions that should be taken to ensure and enhance the provision of the multi-faceted quality required of today's higher education. However, before listing them, we should repeat a point made previously in this report: the evidence base for any actions has its limitations. This report bases its conclusions and recommendations on research findings on teaching processes within different academic disciplines and on the views and experience of university deans. However, other actors – students, their teachers, their subsequent employers – may have other perspectives and, again as we have already noted, research perspectives can be biased in favour of innovatory and contextual features of teaching and learning rather than the diversity of 'typical' practices.

Here are some recommendations:

- > courses of initial and continuing development for teaching in higher education should have a strong disciplinary/professional element, while recognising the value of generic components that encourage the cross-fertilisation of ideas;
- > conceptions or measures of good teaching should take into account the knowledge-specific/disciplinary specific nature of what students gain from attending university;
- > the multi-faceted natures of these gains should be recognised and not distorted by reliance on measures based on a very limited set factors;
- > the disciplinary identities that graduates leave with are articulated in a way that makes it clear to the public and employers what knowledges and identities graduates will have developed. At the moment, a generic concept of employability obscures differences and fails to draw attention to what is distinctive about engaging with particular disciplines;
- > that research into teaching in the disciplines is shared more widely across disciplines so that cross-disciplinary learning is possible;
- > the implied dichotomy between subject-centred and student-centred approaches should be resisted, and courses designed so that student skills are developed in disciplinary, professional and personal development contexts, whenever possible;
- > that new research facilities be designed with teaching in mind, so that as far as possible teaching and research are co-located;

- > recognition and reward arrangements in universities should, in particular, recognise those staff who make productive links between research and teaching (noting that if research is thought of as a learning process rather than as the generation of new knowledge, then all teaching staff can be so recognised);
- > that the HEA continues to support teaching in the disciplines by identifying and disseminating best practice;
- > finally, that the increasing diversity of higher education provision is necessary and needs to be recognised and reflected in differences in the qualities of different disciplines, types of institution, and types of graduate.

As the philosopher, Alan Ryan, once noted in a THE article, he was quite certain that “all higher education institutions are excellent ... at something!”

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Appendix 1: Methodology for selecting and analysing academic journals

Part 1

- 1. Make a list of the disciplines that are relevant to your HEA grouping.**
- 2. Try to identify the journals most relevant to the discipline as it is taught in the UK:** if there are several choose one with the highest impact factor that includes relevant material and is aimed at those working in the discipline. If there are no UK journals, pick it based on impact factors from Sci Val. If there are no resources of this nature look for Internet resources starting with professional associations.
- 3. Once the journals are identified write a short paragraph that describes it and its stated aims.**
- 4. Looking at content this year and five years previously:** write a summary of the core concerns of the article. Begin with keywords and abstracts and then skim the article based upon the criteria in Part 2.
- 5. Write a paragraph or two summarising any important trends or key features.**

Part 2

- 1. For each discipline – core concerns; teaching methods; evaluation methods; theories and concepts:** The rationale for this is that we want to identify differences within the HEA clusters: please put the number of articles underpinning each category next to it in brackets.
- 2. Core concerns:** This is a case of identifying what underlying problem articles are trying to address. The idea is that this will give us insight into the current position of the discipline and the pedagogical issues that arise from it.
- 3. Teaching methods:** this is a case of identifying the number and type of pedagogies that are discussed in connection with each of the disciplines. The purpose is that we can map the disciplines and see how much similarity and difference there is in terms of pedagogical approaches that are discussed. This will help us answer the question: 'What is seen as good pedagogy in the disciplines?'
- 4. Evaluation methods:** identify how the success of particular teaching methods is measured within articles. This will help us answer questions around how teaching excellence is thought about and understood in each of the disciplines.
- 5. Theories and concepts:** identify theories and concepts that are discussed in the articles – divided into educational theories and the theories of the disciplines. This will help us understand if disciplines are using specific educational theories and concepts. We will also understand the

extent to which the theoretical lenses of the disciplines are being brought into discussions of teaching and learning of them.

Based on the analysis and further research, disciplines were characterised using the dimensions described in Appendix 3.

Appendix 2: Disciplinary journals analysed

STEM

Maths

Eight journals on Mathematics education were found. Most of these journals cover a diverse range of Maths education research in the international context, focusing on Maths teacher education and secondary level Maths education, so it was challenging to find specific articles on teaching and learning approaches in the UK higher education context. More relevant articles were found in *Journal for Research in Mathematics Education* and *ZDM – International Journal on Mathematics Education*. The most relevant articles in the last five years' issues were reviewed:

- > *Journal for Research in Mathematics Education*. US. SJP 1,976;
- > *Journal of Mathematics Teacher Education*. 0,874 impact 1259 Springer;
- > *International Journal of Science and Mathematics Education*. Netherlands. 0,688;
- > *ZDM - International Journal on Mathematics Education*. Germany. 0,647;
- > *Educational Studies in Mathematics*. Electronic. 0,518;
- > *For the Learning of Mathematics*. Canada. 0,474;
- > *International Journal of Mathematical Education in Science and Technology*. UK. 0,336, issues;
- > *Research in Mathematics Education*. US. 0,224.

Physics

Two journals were found specifically focusing on Physics education: *Physical Review Physics Education Research* (US); and *Physics Education* (UK). The most highlighted articles of the last five years were reviewed. The journals cover the full range of experimental and theoretical research, related to the teaching and/or learning of Physics. Physics education research impacted on more innovative teaching in physics.

- > *Physical Review Physics Education Research*. US. SJR 0,564;
- > *Physics Education*. UK. SJR 0,247.

Biology

Several journals on Biology education were found, and three higher ranked journals were chosen for the review. One of them is a UK-based journal. These journals discuss teaching and learning approaches extensively, and there were many innovative teaching and learning approaches, especially technology enhanced methods and tools. The last three years' issues were reviewed:

- > *Cell Biology Education—A Journal of Life Science Education* (CBE). Canada. Impact – 1.890;
- > *Journal of Biological Education*. UK. 0,409;
- > *Biochemistry and Molecular Biology Education*. US. 0,394.

Geography

Two journals were found specifically on teaching of Geography, and both were reviewed. Sixty-one relevant articles were found from the last five years' issues. The journals were HE specific and covered a full range of teaching and learning topics:

- > *Journal of Geography in Higher Education*. UK. SJR 0,369;
- > *International Research in Geographical and Environmental Education*. UK. SJR 0,271.

Psychology

Only one journal was found on teaching of Psychology. One hundred and one teaching-and-learning related articles were found in the last five years' issues. This journal offers creative and hands-on articles on teaching and learning approaches:

- > *Teaching of Psychology*. 2014 impact factor: 0.667

Engineering

Several journals were found on Engineering education. Three of them were US-based and two were UK-based. These journals cover a wide range of research on Engineering education and there were many articles on innovative teaching and learning approaches. The most highly ranked international journal was chosen for the review and 105 teaching-and-learning related articles were reviewed from the last five years' issues. Engineering education is the most active in producing innovative teaching and learning approaches. Additionally, UK-based *Engineering Education: A Journal of the Higher Education Academy* was reviewed (the current issue, and an issue from five years ago):

- > *Journal of Engineering Education (JEE)*. US. SJR 1,705. Impact factor: 2.059;
- > *European Journal of Engineering Education*. UK. SJR 0,419;
- > *Journal of Professional Issues in Engineering Education and Practice*. US, 0,449;
- > *Advances in Engineering Education (AEE)*. US;
- > *Engineering Education: a Journal of the Higher Education Academy*. UK.

Statistics

Two journals on teaching of statistics were found and reviewed. Thirty-six articles on teaching and learning in the higher education context were reviewed from the last five years' journals.

- > *Journal of Statistics Education*. US. 0,287, 3 issues per year;
- > *Statistics Education Research Journal*.

Built environment

Only one journal specifically on education in the Built Environment was found, and it was a UK-based journal. This journal is now *Higher Education Pedagogies*. The last five years' issues were reviewed, and 20 articles were reviewed for the scoping:

- > *Journal for Education in the Built Environment.*

Environment

Three journals were found on environmental education research but none of them explicitly discuss pedagogies. They mostly discuss the content side of the discipline. Therefore, only a few articles were found and reviewed:

- > *The Journal of Environmental Education;*
- > *Environmental Education Research;*
- > *International Journal of Environmental and Science Education.*

Computing

Two journals were found with a specific focus on teaching and learning within the Computing discipline. Twenty-seven relevant articles from the last five years' issues of the both journals were reviewed.

Arts and Humanities

Archaeology and Classics

- > *N/A*

Area Studies

- > *Czech-Polish Historical and Pedagogical Journal;*
- > *Education About Asia.*

Art and Design

- > *International Journal of Technology and Design Education;*
- > *International Journal of Art and Design Education.*

Cinematics and Photography

- > *N/A*

Dance

- > *Research in Dance Education;*
- > *Theatre, Dance and Performance Training.*

Drama and Music

- > *British Journal of Music Education;*
- > *Research in Drama Education.*

English

- > *Research in the Teaching of English;*
- > *College English.*

History

- > *The History Teacher;*
- > *Teaching History.*

Journalism

- > *Journalism Studies;*
- > *Journalism and Mass Communication Educator.*

Languages

- > *Language Learning;*
- > *Language Teaching Research.*

Linguistics

- > *Annual Review of Applied Linguistics;*
- > *Journal of English for Academic Purposes.*

Media Communications

- > *Journalism and Mass Communication Educator;*
- > *College Composition and Communication.*

Philosophical and Religious Studies

- > *Religious Education;*
- > *Teaching Philosophy.*

Social Sciences

Anthropology

- > *Anthropology and Education Quarterly;*
- > *Teaching Anthropology.*

Business and Management

- > *Academy of Management Learning and Education;*
- > *E-Journal of Business Education and Scholarship of Teaching;*

Economics

- > *Journal of Economic Education;*
- > *International Review of Economics Education.*

Education

- > *Teaching and Teacher Education;*
- > *Journal of Education for Teaching.*

Finance and Accounting

- > *Issues in Accounting Education;*
- > *Accounting Education.*

Hospitality, Leisure, Sport and Tourism

- > *Journal of Hospitality, Leisure, Sports and Tourism Education;*
- > *Sport, Education and Society.*

Islamic Studies

- > *N/A*

Law

- > *Journal of Legal Studies Education;*
- > *Journal of Legal Education.*

Marketing

- > *Journal of Marketing Education;*
- > *Marketing Education Review.*

Politics

- > *European Political Science;*
- > *Journal of Political Science Education.*

Sociology

- > *Teaching Sociology;*
- > *The Sociology Teacher.*

Health and Social Care

Health

- > *Advances in Health Sciences Education;*
- > *Pedagogy in Health Promotion.*

Social Work and Social Policy

- > *Journal of Social Work Education;*
- > *Social Work Education: The International Journal.*

Veterinary Medicine

- > *Journal of Veterinary Medical Education;*
- > *Equine Veterinary Education.*

Medicine and Dentistry

- > *Medical Education;*
- > *European Journal of Dental Education.*

Nursing and Midwifery

- > *Nurse Education Today;*
- > *Journal of Nursing Education.*

Appendix 3: Academic to vocational mappings

Humanities and Arts categorisations

	Vocational	Academic	New	Established	Inter-disciplinary	Singular	Vertical	Horizontal
Drama and Music 10	Strong	Strong	Medium	Strong	Medium	Strong	Strong	Medium
Drama and Music 15	Strong	Strong	Medium	Strong	Medium	Strong	Strong	Medium
History 10	Low	Strong	Low	Low	Low	Medium	Low	Strong
History 15	Low	Strong	Low	Low	Low	Medium	Low	Strong
Media and Communications 10	Medium	Strong	Strong	Medium	Strong	Low	Medium	Strong
Media and Communications 15	Medium	Strong	Strong	Medium	Strong	Low	Medium	Strong
Area Studies	Low	Strong	Medium	Medium	Strong	Low	Medium	Strong
Art and Design	Medium	Strong	Medium	Strong	Strong	Strong	Strong	Medium
Dance	Strong	Low	Medium	Strong	Medium	Strong	Strong	Medium
English	Low	Strong	Low	Strong	Strong	Low	Medium	Strong
Journalism	Strong	Low	Low	Low	Strong	Low	Low	Strong
Languages	Medium	Medium	Low	High	Strong	Strong	Strong	Medium
Linguistics	Medium	Strong	Low	Strong	Strong	Medium	Strong	Medium
Philosophical and Religious Studies	Medium	Strong	Low	Strong	Strong	Low	Low	Medium

Health and Social Care categorisations

	Vocational	Academic	New	Established	Inter-disciplinary	Singular	Vertical	Horizontal
Health	Strong	Strong	Medium	Strong	Medium	Strong	Strong	Medium
Medicine and Dentistry	Strong	Strong	Medium	Strong	Medium	Strong	Strong	Medium
Nursing and Midwifery	Low	Strong	Low	Low	Low	Medium	Low	Strong
Social Work and Social Policy	Low	Strong	Low	Low	Low	Medium	Low	Strong
Veterinary Medicine	Medium	Strong	Strong	Medium	Strong	Low	Medium	Strong

Social Science categorisations

	Vocational	Academic	New	Established	Inter-disciplinary	Singular	Vertical	Horizontal
Finance and Accounting 10	Strong	Strong			Low	Medium	Low	Strong
Finance and Accounting 15	Strong	Strong			Low	Medium	Low	Strong
Law 10	Low	Strong	Low	Strong	Medium	Low	Low	Strong
Law 15	Low	Strong	Low	Strong	Medium	Low	Low	Strong
Politics 10	Low	Strong	Low	Strong	Strong	Low	Low	Strong
Politics 15	Low	Strong	Low	Strong	Strong	Low	Low	Strong
Anthropology	Low	Strong	Low	Strong	Strong	Medium	Medium	Medium
Business and Management	Strong	Medium	Low	Strong	Strong	Low	Low	Strong
Economics	Low	Strong	Low	Strong	Low	Medium	Low	Strong
Education	Strong	Strong	Medium	Strong	Strong	Low	Low	Strong
Hospitality, Leisure Sports and Tourism	Strong	Strong	Strong	Low	Strong	Low	Low	Strong
Marketing	Strong	Strong	Strong	Medium	Strong	Low	Low	Strong
Sociology	Low	Strong	Medium	Medium	Strong	Medium	Low	Strong

STEM categorisations

	Vocational	Academic	New	Established	Inter-disciplinary	Singular	Vertical	Horizontal
Earth and Environmental Sciences10	Medium	Strong	Strong	Strong	Strong	Medium	Medium	Strong
Earth and Environmental Sciences 15	Medium	Strong	Strong	Strong	Strong	Medium	Medium	Strong
Computing 10	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Computing 15	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Engineering 10	Strong	Medium	Medium	Strong	Strong	Medium	Medium	Low
Engineering 15	Strong	Medium	Medium	Strong	Strong	Medium	Medium	Low
Physics 10	Medium	Strong	Medium	Strong	Low	Strong	Strong	Low/Medium
Physics 15	Medium	Strong	Medium	Strong	Low	Strong	Strong	Low/Medium
Biology	Low	Medium	Low	Strong	Medium	Medium	Medium	Low
Built Environment	Strong	Medium	Strong	Medium	Strong	Low	Medium	Medium
Geography	Medium	Medium	Medium	Strong	Medium	Medium	Medium	Medium
Maths	Medium	Strong	Low	Strong	Low	Strong	Strong	Low
Psychology	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Strong
Statistics	Medium	Medium	Strong	Medium	Medium	Medium	Medium	Strong

Appendix 4a: Interview schedule for senior faculty responsible for learning and teaching

The interviews are qualitative and the wording of the questions is indicative only.

1. Are there formal institutional and/or faculty criteria and processes for assessing and rewarding 'good teaching'?
 - If so, what are they?
 - What consequences follow from them?
2. Can you say whether the different disciplines in the faculty are trying to achieve similar or different things with their students?
 - What kinds of people do they want them to become?
 - Does this differ for undergraduate (UG) and postgraduate (PG) students?
 - What kinds of knowledge/skills?
 - Do these differ between single and multi-disciplinary courses?
3. What are the major pedagogic challenges that academics in the different disciplines face with regard to teaching their students (e.g. practical and professional orientation; different types of students; difficult and different forms of knowledge)? And how are they overcome?
4. Have there been any changes over the last two years in the importance attached to 'good teaching' and the approaches taken to assessing and achieving it?
 - If so, what are they and how have staff (and students) responded to them?
 - Are there differences between the views of academic staff, students and management in what constitutes 'good teaching'? (And do these differ between different disciplines?)
5. How accurate and credible do you believe assessments of 'good teaching' to be?
6. Can you comment on the report we sent you? How far do the practices and issues summarised in it reflect or differ from practices and issues within the faculty here?

Appendix 4b: Information sheet and informed consent form

1. Information about the project

This project is exploring the way that teaching excellence or good teaching is conceived of in the different academic disciplines that are taught in universities in the UK. It is using three methods to interrogate this question: (1) a survey of recent relevant pedagogical literature in 34 disciplines; (2) short qualitative interviews with deans (or equivalent) who are responsible for teaching and learning at faculty level; and (3) a survey of a wider group of deans (or equivalent) with responsibility for learning at teaching at faculty level. Deans have been chosen because of their perceived position in having a comparative overview of the disciplines in their faculty.

2. What you are being asked to do

You are being asked to participate in a confidential 20-minute to 30-minute recorded interview in which we will ask you to reflect on the range of different disciplines and students in your faculty and the ways in which they conceptualise good teaching. We are interested in key similarities and differences in this respect and the factors that you believe shape this. We would also like you to comment on whether you think there are differences at undergraduate and taught postgraduate levels in this respect. And we will ask you to spend a few minutes reflecting on some of our findings from the literature review, which we will send to you at least 24 hours before the interview.

3. What we will do with your recorded interview data

We will transcribe your tape and will store the transcriptions in anonymised form on password-protected computers. We will remove any identifying material (names, places, institutional information) prior to storage of the written transcriptions. We will destroy the recordings by two months after the end of the project (September 2016). We will keep the anonymised transcriptions for up to three years to allow for further analysis.

4. If you agree to participate

If you decide to participate you will have the right to withdraw at any point through the interview. Just let us know and we will turn off the recording device, stop the interview and destroy any data we have. You can also withdraw after the interview for up to two weeks after the day of your interview. To do this, please contact Katharina Ehrhart by email (k.ehrhart@lse.ac.uk). You may also contact Katharina if you have any further questions.

If you wish to say anything that you do not want recorded, please ask us to turn off the tape and we will proceed in that way. At this stage we will take notes if you agree that we can do this. If not, we will just listen.

Informed consent

Please read the above then tick and sign in the appropriate places below to indicate that you understand what we are asking you to do and that you are happy to participate and for us to use your data.

I understand that I am being asked to undertake a recorded interview.	
I understand that I can withdraw during the interview and for up to two weeks after the interview.	
I understand that a transcription of my interview will be stored anonymously on password-protected computers by the research team.	
I understand that the recording of my interview will be deleted within two months of my interview.	
I understand that my anonymised interview data will be used in reports, academic and other written outputs.	

Appendix 4c: Survey questionnaire

Q1 Introduction to the survey

Dear Madam or Sir,

The HEA has commissioned a project on 'Teaching Excellence in the Disciplines'. Its aim is to enhance our understanding of the distinctiveness and effectiveness of different pedagogic approaches to higher education in its different disciplinary fields. The project is being undertaken by a project team led from the London School of Economics by Professor John Brennan and Dr Andrea Abbas. We have interviewed a large number of university deans but would like to complement our findings on what constitutes 'good teaching' in the disciplines through responding to this survey. The survey should last no more than 10-15 minutes and we would be grateful for your input. If you have any questions, Katharina Ehrhart at LSE (k.ehrhart@lse.ac.uk) would be happy to provide you with further information.

Q2 Which university do you work at?

Q3 Which of the following subject groupings fit most neatly with the disciplines you are responsible for?

- Arts and Humanities (1)
- Health and Social Care (2)
- Social Sciences (3)
- STEM (4)
- Other (5) _____

Q4 Are the disciplines taught within your faculty more academically or vocationally/professionally focused? Please list the disciplines and select on the scale.

	Academic (1)	Vocational/Professional (2)	Mixed (3)
Discipline 1 (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline 2 (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline 3 (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline 4 (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline 5 (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline 6 (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline 7 (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline 8 (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discipline 9 (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5 What proportion of the Faculty's graduates proceed to employment for which their degree discipline is a required qualification? Please give an approximate percentage.

Overall % (1) _____

Q6 Who or what do you think exerts most influence on conceptions of 'good teaching' within your Faculty? Please indicate on the scale below.

	Very important (1)	Somewhat important (2)	Not important (3)
The institution's traditions and culture (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The institution's current leadership and policies (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Faculty's disciplinary traditions (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Faculty's current leadership and policies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The preferences of individual academic staff (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The preferences and expectations of students (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
External expectations (please specify) (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 What would be regarded as constituting 'good teaching' within the Faculty? Please indicate on the scale below. If there are specific disciplines for which an item is especially important, please name the discipline alongside the item.

	Very important (1)	Somewhat important (2)	Not important (3)
Up-to-date and relevant curriculum (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Well-prepared lectures (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good critical feedback to students (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appropriate use of new learning technologies (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Effective group work by students (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work-based learning (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Effective modelling of complex scenarios (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Simulated experiences (e.g. case studies) (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Effective technical or practical training (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Opportunities to discuss and debate (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong research skills (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 Which qualities and attributes of successful students do you feel are most valued by your academic staff? Please indicate on the scale below.

	Very important (1)	Somewhat important (2)	Not important (3)
Capable practitioners (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agents for change (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concern for social justice (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cross-culturally capable (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Creativity (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Critical and analytical skills (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technical skills (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong values (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexibility (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to empathise (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research skills (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prepared for a portfolio career (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledgeable of field of practice (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledgeable of discipline (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adheres to professional standards (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competent verbal communicator (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competent written communicator (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional skills (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Experienced in field of employment (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Aware of wider social and economic context (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concern for environmental issues (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Questioning (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledgeable of field of study (23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concerned with practical problems (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good team player (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individualistic (26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 Do the above answers apply well to all the disciplines in your faculty or are there some disciplines which are not effectively included? Please indicate below.

Q10 To what extent does the teaching of the Faculty's disciplines on multi-disciplinary/inter-disciplinary or on vocational/professional courses require different approaches?

- considerable differences (1)
- some differences (2)
- no differences (3)

Q11 If possible, please provide an example of the kinds of the resulting adaptations which have been made in the teaching of one of the Faculty's disciplines below.

Q12 To what extent does diversity in the educational and social backgrounds of students require different approaches to teaching?

- considerable differences (1)
- some differences (2)
- no differences (3)

Q13 If possible, please provide an example of the kinds of the resulting adaptations which have been made in the teaching of one of the Faculty's disciplines below.

Q14 To what extent have conceptions of 'good teaching' changed within the Faculty over the last five years?

- major changes (1)
- some changes (2)
- no changes (3)

Q15 Please specify any major changes below.

Q16 What do you feel have been the major drivers of changes in the conception of good teaching?

Q17 THANK YOU for completing the survey. If you would like to make any further observations about the survey or the topic of 'teaching excellence in the disciplines', please do so below.

Appendix 5: Summary of statistical data

Table 1: Sample characteristics				
Institution type				
		Frequency	Percent	Valid percent
Valid	Pre-92	22	30.6%	40.7%
	Post-92	32	44.4%	59.3%
	Total	54	75.0%	100.0%
Missing		18	25.0%	
	Total	72	100.0%	
Discipline cluster				
Valid	Arts and Humanities	21	29.2%	33.3%
	Health and Social Care	8	11.1%	12.7%
	Social Sciences	15	20.8%	23.8%
	STEM	18	25.0%	28.6%
	Other	1	1.4%	1.6%
	Total	63	87.5%	100%
Missing		9	12.5%	
	Total	72	100%	

Table 2.1: Cross tabulation – factors considered 'Very Important' for Q6 (Who or what do you think exerts most influence on conceptions of 'good teaching' within your Faculty?) and discipline cluster										
	Arts and Humanities		Health and Social Care		Social Sciences		STEM		All	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
The institution's traditions and culture	8	61.5%	2	28.6%	7	70.0%	4	33.3%	21	50.0%
The institution's current leadership and policies	3	23.1%	2	33.3%	5	50.0%	9	75.0%	19	46.3%
The Faculty's disciplinary traditions	11	78.6%	6	85.7%	3	30.0%	3	25.0%	23	53.5%
The Faculty's current leadership and policies	9	64.3%	6	85.7%	4	40.0%	10	83.3%	29	67.4%
The preferences of individual academic staff	9	69.2%	2	28.6%	5	50.0%	4	33.3%	20	47.6%
The preferences and expectations of students	10	71.4%	5	71.4%	4	40.0%	6	50.0%	25	58.1%
External expectations	8	88.9%	6	100.0%	2	28.6%	4	57.1%	20	69.0%
Valid responses only. Percentages are of valid responses for individual factors.										

Table 2.2: 'External expectations' and 'Other' for Q6 (Who or what do you think exerts most influence on conceptions of 'good teaching' within your Faculty?)

External expectations	Reputation; stakeholders; accreditation bodies; PSRB's; commissioners; sector expectations; QAA/HEA; QAA benchmarks; NSS; HEA; HEA; emergent TEF; professional bodies; QA; professional regulatory bodies; NSS; TEF; accrediting bodies; Professional recognition (e.g. HEA fellowship, SF, PF); professional bodies; Views of NHS stakeholders; accreditation by professional bodies; accreditation by professional bodies; professional requirements; university level plans; accreditation by professional and industry bodies; GMC/GDC/GPhC; profession; Welsh Government; PSBs and trade bodies; TEF; professional career
Other	Subject discipline traditions; other universities; industry; TEF; staff/student relations; industry; HEA; colleagues' expectations

Table 2.3: Cross tabulation – factors considered 'Very Important' for Q6 (Who or what do you think exerts most influence on conceptions 'good teaching' within your Faculty?) and Institution type

	Pre-1992		Post-1992		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
The institution's traditions and culture	11	61.1%	6	33.3%	17	47.2%
The institution's current leadership and policies	11	61.1%	7	41.2%	18	51.4%
The Faculty's disciplinary traditions	9	50.0%	10	52.6%	19	51.4%
The Faculty's current leadership and policies	12	66.7%	12	63.2%	24	64.9%
The preferences of individual academic staff	8	44.4%	8	44.4%	16	44.4%
The preferences and expectations of students	8	44.4%	12	63.2%	20	54.1%
External expectations	5	45.5%	10	83.3%	15	65.2%

Valid responses only. Percentages are of valid responses for individual factors.

Table 3.1: Factors considered 'Very Important' for Q7 (What would be regarded as constituting 'good teaching' within the Faculty?) and discipline cluster

	Arts and Humanities		Health and Social Care		Social Sciences		STEM		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Up-to-date and relevant curriculum	11	78.6%	6	100.0%	9	90.0%	7	58.3%	33	78.6%
Well-prepared lectures	7	50.0%	4	80.0%	9	90.0%	9	75.0%	29	70.7%
Good critical feedback to students	11	78.6%	5	83.3%	9	90.0%	11	91.7%	36	85.7%
Appropriate use of new learning technologies	6	42.9%	2	33.3%	4	40.0%	3	25.0%	15	35.7%
Effective group work by students										
Work-based learning	4	30.8%	6	100.0%	4	40.0%	7	58.3%	21	51.2%
Effective modelling of complex scenarios	5	35.7%	6	100.0%	2	20.0%	3	25.0%	16	38.1%
Effective technical or practical training	7	50.0%	4	66.7%	4	40.0%	9	75.0%	24	57.1%
Opportunities to discuss and debate	13	92.9%	5	83.3%	7	70.0%	5	41.7%	30	71.4%
Strong research skills	7	50.0%	3	50.0%	4	40.0%	8	66.7%	22	52.4%
Other	5	83.3%	0	0.0%	1	100.0%	1	50.0%	7	77.8%

*Percentages of valid responses for each factor

Table 3.2: Cross tabulation – factors considered 'Very Important' for Q7 (What would be regarded as constituting 'good teaching' within the Faculty?) and institution type

	Pre-1992		Post-1992		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Up-to-date and relevant curriculum	11	61.1%	16	88.9%	27	75.0%
Well-prepared lectures	12	66.7%	13	72.2%	25	69.4%
Good critical feedback to students	16	88.9%	15	83.3%	31	86.1%
Appropriate use of new learning technologies	5	27.8%	8	44.4%	13	36.1%
Effective group work by students	4	22.2%	12	66.7%	16	44.4%
Work-based learning	6	33.3%	11	64.7%	17	48.6%
Effective modelling of complex scenarios						
Effective technical or practical training						
Opportunities to discuss and debate	11	61.1%	14	77.8%	25	69.4%
Strong research skills	8	44.4%	11	61.1%	19	52.8%
Other	2	66.7%	5	83.3%	7	77.8%

*Percentages of valid responses for each factor

Table 4.1: Factors considered 'Very Important' for Q8 (Which qualities and attributes of successful students do you feel are most valued by your academic staff?) and discipline cluster

	Arts and Humanities		Health and Social Care		Social Sciences		STEM		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Capable practitioners	9	69.2%	6	100.0%	3	37.5%	5	41.7%	23	59.0%
Agents for change	7	53.8%	2	33.3%	3	33.3%	3	25.0%	15	37.5%
Concern for social justice	6	46.2%	2	33.3%	2	22.2%	2	16.7%	12	30.0%
Cross-culturally capable	7	53.8%	1	16.7%	1	11.1%	2	16.7%	11	27.5%
Creativity	13	100.0%	3	50.0%	0	0.0%	3	25.0%	19	47.5%
Critical and analytical skills	12	92.3%	6	100.0%	9	100.0%	9	75.0%	36	90.0%
Technical skills	6	46.2%	5	83.3%	3	33.3%	9	75.0%	23	57.5%
Strong values	7	53.8%	6	100.0%	2	22.2%	3	25.0%	18	45.0%
Flexibility	7	53.8%	2	33.3%	2	22.2%	3	25.0%	14	35.0%
Ability to empathise	4	30.8%	5	83.3%	1	11.1%	1	8.3%	11	27.5%
Research skills	7	53.8%	2	33.3%	4	44.4%	11	91.7%	24	60.0%
Prepared for a portfolio career	6	46.2%	1	16.7%	0	0.0%	3	25.0%	10	25.0%
Knowledgeable of field of practice	11	84.6%	6	100.0%	4	44.4%	7	58.3%	28	70.0%
Knowledgeable of discipline	12	92.3%	6	100.0%	8	88.9%	12	100.0%	38	95.0%
Adheres to professional standards	8	61.5%	6	100.0%	5	55.6%	12	100.0%	31	77.5%
Competent verbal communicator	5	38.5%	6	100.0%	5	55.6%	7	58.3%	23	57.5%
Competent written communicator	6	46.2%	4	66.7%	7	77.8%	9	75.0%	26	65.0%
Emotional skills	4	30.8%	5	83.3%	1	11.1%	0	0.0%	10	25.0%
Experienced in field of employment	4	30.8%	3	50.0%	0	0.0%	2	16.7%	9	22.5%
Aware of wider social and economic context	8	61.5%	1	16.7%	2	22.2%	3	25.0%	14	35.0%
Questioning	10	76.9%	4	66.7%	6	66.7%	7	58.3%	27	67.5%
Knowledgeable of field of study	11	84.6%	6	100.0%	8	88.9%	11	91.7%	36	90.0%
Concern with practical problems	8	61.5%	4	66.7%	1	11.1%	5	41.7%	18	45.0%
Good team player	6	46.2%	3	50.0%	2	22.2%	6	50.0%	17	42.5%
Individualistic	4	30.8%	0	0.0%	0	0.0%	2	16.7%	6	15.4%
Other	1	50.0%	0	0.0%	0	0.0%	1	100.0%	2	66.7%

*Percentages of valid responses for each factor

Table 4.2: Q9 – Do the above answers apply well to all the disciplines in your faculty or are there some disciplines which are not effectively included?

Free text answers	Fine art, which is much more collaborative and vocational.
	All
	More geared to vocational courses
	All
	These answers are for my discipline, architecture
	No
	Yes
	Yes all areas
	These apply to all disciplines
	Not experienced in all disciplines difficult to comment
	Inclusive
	There are strong themes across the faculty. Staff commonly teach on a range of programmes, and professional values are therefore applied across disciplines.
	Where I put somewhat, the importance varies between more academic and more practical courses
	'Purer' social science broadly such as criminology and sociology less concerned with practice elements/empathy and more with intellectual rigour, etc. but still largely same pattern
	Applies to all disciplines but the emphasis between 'very' and 'somewhat' would change with the discipline
	Professional Standards are more important in Law and Education
	All included
	With the exception of maintenance engineering, which is practitioner-based, the above applies to all the others subjects.
It does vary between discipline, sometimes very significantly. For example the more academic-focused disciplines are less bothered about field of practice or citizenship/ethical practice/applied issues	
Biomedical Science	
These questions are beginning to make no sense – how do I take an average across polar opposites? Whose academic staff (the ones in my Centre or the least engaged?)	

Table 5: Cross tabulation Q11 (To what extent does the teaching of the Faculty's disciplines on multi-disciplinary/inter-disciplinary or on vocational/professional courses require different approaches?) and discipline cluster

	Arts and Humanities		Health and Social Care		Social Sciences		STEM		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Considerable differences	7	53.8%	2	33.3%	0	0.0%	3	30.0%	12	32.4%
Some differences	4	30.8%	4	66.7%	7	87.5%	7	70.0%	22	59.5%
No differences	2	15.4%	0	0.0%	1	12.5%	0	0.0%	3	8.1%

Table 6: Cross tabulation Q12 (To what extent does diversity in the educational and social backgrounds of students require different approaches to teaching?) and discipline cluster

	Arts and Humanities		Health and Social Care		Social Sciences		STEM		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Considerable differences	3	23.1%	2	33.3%	1	12.5%	1	9.1%	7	18.4%
Some differences	7	53.8%	4	66.7%	6	75.0%	7	63.6%	24	63.2%
No differences	3	23.1%	0	0.0%	1	12.5%	3	27.3%	7	18.4%

Table 7: Cross tabulation Q14 (To what extent have conceptions of 'good teaching' changed within the Faculty over the last five years?) and discipline cluster

	Arts and Humanities		Health and Social Care		Social Sciences		STEM		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Considerable differences	3	23.1%	2	33.3%	1	12.5%	1	9.1%	7	18.4%
Some differences	7	53.8%	4	66.7%	6	75.0%	7	63.6%	24	63.2%
No differences	3	23.1%	0	0.0%	1	12.5%	3	27.3%	7	18.4%

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