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Graduates’ experiences of, and attitudes towards, the inclusion of employability-related support in undergraduate degree programmes; trends and variations by subject discipline and gender

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ABSTRACT
Enhancing graduate employability is a priority for many stakeholders in higher education and this research explores graduates’ experiences of, and attitudes towards, the inclusion of employability-related support in undergraduate degree programmes. A literature review is supplemented by primary research on a targeted sample of 104 graduates from humanities, sciences, engineering and social sciences, who span several generations and have over 2250 years of employment experience. The findings are triangulated to a workshop with 23 graduate careers advisory professionals. The results signal some important trends in experiences and attitudes, as well as variations by discipline and gender. While one in 10 graduates prefer a disciplinary focus with just indirect attention to employability, nine in 10 want employability to have greater emphasis, albeit those preferences vary between optional and integrated approaches. Experiences of employability-related support signal a significant shift over recent decades in how that support is provided, with professional service groups such as careers taking a much more active role and the overall level of provision rising. A cautionary note however is that the link with the discipline remains critical and the right balance needs to be struck between the provision of such support and embedding it into the curriculum.

Introduction to graduate employability
A widely accepted definition of employability has been developed by the UK Higher Education Academy (Pegg et al. 2012), building upon earlier work by Moreland (2006):

A set of achievements, skills, understandings and personal attributes that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy.

The phrases ‘chosen occupations’ and ‘more likely’, as well as the breadth of stakeholders described, indicate that its purpose is to enhance the likelihood of success in achieving suitable employment and that the beneficiaries are widespread. Nevertheless, distinctions between different graduate types are not made, and indeed concerns exist as to whether the expectations of industry are actually being met...
(Hinchliffe and Jolly 2011; Jackson 2014; Wilton 2012), if gender is being sufficiently considered (Gracia 2009; Moreau and Leathwood 2006; Wickramasinghe and Perera 2010) and if disciplinary variations are adequately addressed (Jackson and Chapman 2012; Stiwne and Jungert 2010).

Graduate employability is an issue of growing importance in higher education internationally and is of relevance to each of the principal stakeholders; students, their families and sponsors, higher education institutions, employers, professional bodies, national governments and regional entities. Higher education institutions compete on a national and international basis, particularly as new performance measures, including employability, emerge (Smith, McKnight, and Naylor 2000). Many universities now have explicit employability strategies in place (University of Bristol 2014; University of Kent 2014; University of Leeds 2014; University of Manchester 2014; University of Oxford 2014). Other initiatives expected to catalyse the translation of employability strategies into practice include the use of the National Student Survey to assess the performance of higher education institutions in the UK (Department for Business Innovation and Skills 2010). In addition, Salter et al. (2010) argue that linking university funding to research shifted a third of academics away from practitioner-oriented outlets.

Consequently, graduate employability is a complex issue and needs to be addressed in many ways. Doubts have existed that employability can be effectively enhanced in the classroom alone (Cranmer 2006) and so it is often tackled in a variety of ways, such as through the curriculum, through career services groups, with personal development plans, via external speakers, in case studies, in consultancy projects, in voluntary work experience and in placements of various types and durations (Becket and Kemp 2010). Graduate employability also tends to form part of a broader focus on ‘graduate attributes’ (Barrie 2004, 2007; Bridgstock 2009; Donleavy 2012; Green, Hammer, and Star 2009; Tomlinson 2007) that extends into issues such as global citizenship, ethics and culture. In England, from 2005 to 2011, the Centres for Excellence in Teaching and Learning CETLs explored employability and enterprise-related activities (Butcher et al. 2011) highlighting the impact on UK higher education policy and practice. This report acknowledges such research but concentrates on employability by focusing on searching for variations in employability experiences and demand by graduates across generations, in different disciplines and by gender.

**Employability research**

As identified by Johnston (2003), much graduate employment research can be categorised into groups that are still generally valid today; such as large-scale statistical analyses of graduate experiences through surveys, interpretations of government statistics, employer perception studies, evaluations of links with social or economic factors, and studies of professional socialisation and learning. Gaps therefore exist between the macro-quantitative studies and specialist qualitative research, including research on the experiences and views of graduates post-graduation, and this research aims to start filling the gap in knowledge on the consideration of trends and variations across subject disciplines and by gender.

**Skills, attributes and competencies**

Much of the research and debate around graduate employability has centred on the development of student and graduate skills, attributes and competencies. The Council for Industry and Higher Education (Archer and Davison 2008) highlighted good communication skills, ‘soft’ skills such as team working abilities and professional work experience. Other examples from the Higher Education Careers Services Unit & Association of Graduate Careers Advisory Services (2010) are outlined in Appendix 1. A comprehensive review of industry-relevant competencies identified by employers internationally (Jackson 2009) reveals a confusing range of definitions and degrees of overlap and repetition, concluding that the four key stakeholders (governments, industry, higher education institutions and graduates) need to reach agreement on profiling the competencies required of a modern graduate.

The balance between soft skills and hard business knowledge has been appraised by Andrews and Higson (2008), where soft skills cover areas such as reliability, professionalism, working under pressure,
coping with uncertainty, planning, strategic thinking, interpersonal interactions, communications, teamwork, networking, creativity, self-confidence, self-management, time-management, willingness to learn and acceptance of responsibility, while hard business knowledge refers to issues such as business qualifications and expertise, abilities to present arguments, analytical and problem-solving skills, coping with complexity, working alone and in teams. Clearly, some areas of overlap exist between these skills and Bill and Bowen-Jones (2010) link their development to customised programmes of personal development and work placements. In research on personality traits (Ahmetoglu, Leutner, and Chamorro-Premuzic 2011), emotional intelligence, EI, is ranked alongside the better known measure of IQ, the intelligence quotient. Critical thinking (Burbach, Matkin, and Fritz 2004) is another active avenue of research into employability-related matters.

Knight and Yorke (2002) indicate that employability can be incorporated into higher education teaching and highlight the importance of the personal and behavioural attributes of the student as well as the skills. Holmes (2001) suggests that it is competence and effectiveness that produces performance for employers. Leggott and Stapleford (2007) confirm this in research on internationalisation and employability where it is found that attributes are just as important as skills for those seeking opportunities for international employment. Toland (2011) outlines that many professional bodies offer support on student employability matters, but it is unclear to what extent higher education institutions make use of these services. Professional recruiters too (Chesworth 2012) highlight a ‘vital dozen’ core competencies of communication, commerciality, achievement-driven, flexibility, customer focus, developing others, teamwork, problem solving, leadership, analytical thinking, organisation and relationship building, highlighting the balance that graduates need to achieve between soft and hard skills and attributes.

The overall critique is that although graduate skills, attributes and competencies are clearly important for enhancing employability, insufficient attention has been given to how these vary according to the subject discipline and the gender of the graduate, and therefore, it is worth exploring these subtleties further.

**International perspectives**

In the UK, Greene and Saridakis (2008) determine that the benefits of developing employability-related skills last on average for four years following graduation. Cranmer (2006) identifies the benefits of employer involvement in higher education. Johnston (2003) highlights the need for research on graduate perceptions of their employment experiences after they have completed their degree and signals the limited amount of analytical triangulation and lack of corroborative evidence provided. Hinchliffe and Jolly (2011) outline the importance of graduate capability in terms of value, intellect, social engagement and performance, concluding that universities should promote employability indirectly through the promotion of graduate identity and the provision of opportunities for functioning rather than directly through an employability skills agenda. Henry (2013) considers that the expectations of outcomes from the inclusion of entrepreneurship and enterprise education in higher education may have spiralled beyond what is realistic and that policy in this area is in need of realignment. Hannon (2004) indicates that such policies often result in non-integrated stand-alone enterprise or entrepreneurship modules. Brooks, Waters, and Pimlott-Wilson (2012) highlight how an international education can play an important role, concluding that more can be done to educate employers about the value of such experiences and qualifications.

In Australia, Jackson and Chapman (2012) describe non-technical competencies as those soft skills required to successfully apply disciplinary knowledge in the workplace, that these are key to producing work-ready graduates and are of equal importance to disciplinary knowledge and skills (Business, Industry and Higher Education Collaboration Council BIHECC 2007; Confederation of British Industry CBI 2008). Barrie (2007) addresses generic graduate attributes and concludes that further research is on disciplinary differences. In Asia, Ren, Zhu, and Warner’s (2011) study of employability issues in higher education in China highlights the need for other strategic actors to play a role as government controls are relaxed, particularly given the volume of graduates entering the workforce. In Sri Lanka,
Wickramasinghe and Perera (2010) find differences by gender, with the most important attributes required of graduates overall being noted as problem-solving, self-confidence and team-work, each of which is best achieved through closer collaborations between industry and academia. For Chinese students studying abroad, Li (2013) highlights the importance of the ‘soft currencies’ to raise employability prospects.

In Europe, the Bologna Process (European Ministers of Education 1999) places special emphasis on the outcomes of higher education in terms of employability and key competencies. Indeed, some characterise employability as the principal driving force of the Bologna Process (Haug and Tauch 2001; Kohler 2004; Yorke 2006). In Schaeper’s (2009) study of the development of key competencies in higher education in Germany, the trend has been for new bachelor programmes to integrate such initiatives into the curriculum rather than have them as isolated activities. In Estonia, Saar et al. (2014) highlight how employers view specific skills as an indication of a graduate’s ability to learn in other areas.

In North America, a Canadian study (Finch et al. 2013) concludes that employers are most interested in five particular employability attributes: soft skills (such as effective communication and interpersonal skills), problem-solving skills (such as critical thinking), pre-graduate experience (such as placements and work experience), functional skills (such as job-specific knowledge) and academic reputation (such as degree classification and reputation of institution). In the United States, Rosenberg, Heimler, and Morote (2012) recommend that faculty across the academic disciplines teach and develop the soft skills that industry expects of graduates and also that the level of communication between industry and academia improves so that degree programmes are more suited to industry needs. In an appraisal of how educators should approach the current generation of students in the US (Feiertag and Berge 2008), it is determined that, as employees, the current generation is often not as independent as prior generations and require more structure, guidance and feedback. In addition, they prefer working collaboratively, do not respond well to the traditional lecture and require technology available to use.

These international studies highlight the breadth of attention being paid to graduate employability research. However, despite the depth of that research, conclusions about disciplinary and gender variations are often drawn based on inferences rather than direct analyses. Therefore this study, with its focus on trends and variations across discipline and gender can add to the existing wealth of accumulated knowledge.

Employers, enterprise and employability models

A review of business-university collaboration (Wilson 2012) highlighted the relevance of placements, work experience, internships and other employer-based initiatives in developing the skills and knowledge required for employment. Other research supports this: Stiwe and Jungert (2010), Driffield, Foster, and Higson (2011), Reddy and Moores (2006), Confederation of British Industry and Universities United Kingdom (2009), Andrews and Higson (2008), Archer and Davison (2008), Rae (2007), Little and Harvey (2006), Milburn (2006) and the National Council for Work Experience (2002). Research on work placements highlights the development of generic employability skills such as communication, motivation, independence, analysis, confidence and problem solving (Department for Business Innovation and Skills 2010; Wilton 2012). These address some of the areas often cited as lacking in graduates (Burgoyne and Perren 2002), including commercial awareness, team working, interpersonal skills, problem solving and analytical thinking. Hallier (2009) concludes that, given the recent and continuing expansion in higher education, there is a need for employers to help shape employee expectations of the employment experience. Mason, Williams, and Cranmer (2009) studied university-, departmental- and graduate-level information and conclude that structured work experience and employer involvement have a positive impact on graduate employability and that many employability skills may be better learnt in the workplace rather than in classroom settings, thus confirming the need for employer involvement in higher education. Roulin and Bangerter (2013) emphasise the employability benefits of engagement in relevant extra-curricular activities during degrees.
Enterprise and entrepreneurship education is often promoted almost as a ‘silver bullet’ for enhancing employability, and a recent parliamentary report (Anderson et al. 2014) on employability and enterprise across the whole UK education system concludes that enterprise education is often confused with work readiness but that there is nevertheless an overlap in that an enterprising individual is likely to be an innovative and forward thinking team player who helps seize upon opportunities, attributes of value in both established and start-up ventures. Specific recommendations include the provision of an introductory module on entrepreneurship or enterprise for students of all subject disciplines, ideally offering the opportunity to practise as well as to learn, this initial module potentially acting as a trigger for further curricula development. For success, Gibson (2014) emphasises the importance of embedding enterprise into both the curriculum and the institutional ecosystem.

Researchers have developed several models to support the development of employability. Tomlinson (2007) constructed an ideal-type model based on a graduate’s market orientation and degree of ownership. Dacre Pool and Sewell’s (2007) ‘CareerEDGE’ model is designed to enhance both employability of the link between academia and employers. The model incorporates experience, generic skills and emotional intelligence into a reflective process to develop graduate self-efficacy, confidence and esteem. Jackson (2014) focuses on a model of graduate competence in employability skills. An ‘Employability Strategy Matrix’ model (O’Leary 2013) aims to monitor a graduate’s readiness for employment in an identified role, and is based on evaluations of a student or graduate’s 3C’s of Content, Capability and Character (O’Leary 2012): content being the accumulation of relevant knowledge; capability, the ability to apply that knowledge in a relevant way; and character, the personal qualities to work effectively alone and in teams. Creasey’s (2013) study corroborates this approach by identifying that employers need graduates with a sound education (content), demonstrable skills (capability) and personal attributes (character). Nabi, Holden, and Walmsley (2010) focus on the transition from student to entrepreneur with a model based on entrepreneurial maturity and business complexity. Gibson (2014) proposes an ELVIS model to institutionalise a focus on employability: Embedding enterprise; Linking to the education ecosystem; Valuing all resources; Innovative approaches; Student centred.

These studies highlight employers’ interests in graduate capabilities, illustrate the values of enterprise and entrepreneurship education, and demonstrate the potential for models of various types to help raise standards and provoke debate. However, these studies tend to consider graduates as a whole and the intention of this research is to extend this knowledge further by exploring if tailored approaches may work better in specific disciplines and for different gender.

**Research focus on trends, disciplines and gender**

Following on from this review of the breadth of research in the field, one of the consequent research questions concerns whether or not the experiences and views of graduates, on the inclusion of employability-related support during undergraduate degrees, have changed over time, and differ across disciplines and by gender. As outlined in the introduction and literature review, there appears to be scope to add more to the existing wealth of studies on graduate employability with the addition of some focused research on graduate preferences in the years after undergraduate graduation once various levels of accumulated years of employment experience exist. The research also offers the opportunity to conduct a systematic evaluation of variations that might emerge across generations, by subject discipline and by gender.

The aims of this research are to add to the accumulated knowledge in the field through an exploration of the experiences of, and preferences for, employability-related support during undergraduate degrees and to assess associated trends over the recent decades. This is a preliminary paper for a potential series of research papers on differences that may exist in this field over time, by subject discipline and by gender. The overall aim is to develop and validate a conceptual framework that illustrates various of employability-related support across the undergraduate population and to help identify ways of satisfying such demand where it exists in higher education. There have been many excellent academic research studies of employability, ranging from evaluations of specific institutional initiatives.
right through to comprehensive analyses of graduate employment databanks. Cranmer’s (2006) review aimed to bridge some of the gaps by exploring employability issues across 34 departments in eight universities, Morrison (2014) studied the transferability of education studies of students’ capabilities into other fields of work, Wilton (2008) addressed the skills developed by business graduates and their subsequent use in employment, while Nabi and Bagley (1998) found differences in attitudes towards employability skills between male and female graduates. The purpose of this study is to add to that bank of knowledge by focusing on the views of graduates, from a breadth of generations, disciplines and gender, towards the provision of employability support during undergraduate degree study.

The research objectives of this study are thus to identify if differences exist between graduates from different eras, disciplines and gender, in their experiences of and attitudes towards employability-related support in undergraduate degree programmes. Should the indications be that differences do appear to exist, the next step is to develop a more comprehensive programme of research to delve deeper into the matters identified. This study is therefore an attempt to highlight areas worthy of deeper investigation and exploration.

Research method

Johnston (2003) highlights the need for research on graduate perceptions of their employment experiences after they have completed their higher education, and signals the limitations of some areas of employability research, including the limited amount of analytical triangulation and lack of corroborative evidence provided. Therefore, this research has been designed to capture graduate perceptions in the years since graduation and after increasing years of employment experiences, and it is calculated that the 104 graduate respondents surveyed have between them 2258 years of employment experience since their graduations. A triangulation of evidence is sought through the graduates’ survey, the literature search and a workshop at a professional careers advisers’ conference. The literature survey is supplemented with the survey, undertaken in 2011 and analysed since 2012, of 104 selected graduates from different undergraduate eras, disciplinary areas and gender. In a search for corroborative or contrasting evidence, the findings have then been triangulated with the output of a related workshop with 23 professionals at the Association of Graduate Careers Advisory Services conference in 2013. This methodology follows Denscombe’s (2002) approach to social science research where the aim is to clarify the aim of the research, to interpret the results with accuracy and originality, and to develop findings from which cautious generalisations can be made in an objective and ethical way. Both deductive and inductive methods have been used in this multi-method approach (Bryman and Bell 2007; Saunders, Lewis, and Thornhill 2009), with the literature survey helping in a deductive manner, this being researched and developed further in an inductive manner through the graduates’ survey and the professionals’ workshop.

Research limitations

Clearly, when studying an issue such as graduate employability over a time span of several decades, it is important to reflect upon changing labour markets during that period. Some decades ago, particularly in the pre-1980s, it was possible to envisage a job-for-life with progressions within the same organisation. Since then, the labour market has changed significantly and today is vastly different with multiple roles and careers a more likely expectation for a contemporary graduate. Therefore, the transition between education and work is more fractured today than it was several decades ago and graduates’ experiences of higher education across that period can also be expected to be quite different. Although this research does not directly explore those changes, they are perhaps to some extent indirectly reflected in the experiences and views of the graduates surveyed. Nevertheless, the context of changes in the labour market during the period of study is a relevant factor to keep in mind should the findings stimulate further debate on the issue.
The sample size at 104 allows for results of statistical significance at the overall level although, inevitably, the sub-groups within the overall sample are smaller. They are also not completely evenly spread and this limits the potential for a fully statistically significant analysis at the sub-group level. Nevertheless, the results do provide indications and suggest that it may be worth investing in a larger study to confirm a number of interesting observations. There is also of course the fact that some respondents are reporting on experiences that may have occurred several decades ago and they may not recall the full details correctly. It would also be useful to have a richer picture of the graduates’ profiles, e.g. if the respondents had part-time jobs during their degree, what types of extra-curricular activities (music, drama, sport) they were involved in, their career profile to date and so on. Such supportive data from a larger sample size would help identify other significant relationships and trends.

### Employability survey with stratified sample of graduates

Following an initial pilot with colleagues to refine the questions, a questionnaire (Appendix 2) was prepared for a survey of graduates’ experiences of, and attitudes towards, employability-related support during undergraduate degrees. The first three questions provided a profile of the respondent; the next three addressed the respondent’s experience during their degree, highlighted specific initiatives related to employability and identified the deliverers of such support; while the last two questions sought views on the need for such support and the benefits it could provide. Mason, Williams, and Cranmer (2009) highlight the very rapid transition from elite to mass higher education in the UK in the late 1980s and early 1990s. Hence, the survey was focussed on graduates who spanned this transitional period but attended the same group of higher education institutions, the universities established in the UK before the influx created in 1992 from the former polytechnics and colleges (Further and Higher Education Act 1992), many of whom have a long history of focusing on employability-related matters. To ensure institutional consistency, the graduates targeted had taken their undergraduate degrees in the ‘older’ universities, often tagged as the Russell, Red-Brick and Plate-Glass (University of Warwick 2014) groups of UK universities that includes, for example, graduates of the Universities of Leeds, Manchester, Oxford, Bristol and many others. A total of 318 graduates were targeted, based on the author’s network of graduate contacts developed during a career in industry and academia, and invited to participate in the survey. Each was informed of the nature and purpose of the study and directed to an electronic link to access the online survey instrument. These graduates were selected on the basis that they could provide information from across a spectrum of subject disciplines, having undertaken their undergraduate degrees at various periods across the last five decades. The returns were made anonymously and, given the targeting of the survey and the speed of the returns, it is reasonable to assume that any leakage to third parties was prevented or minimised. The response rate of 33% is a good online survey response rate compared to typical values of less than 25% (Kaplowitz, Hadlock, and Levine 2004) and is reflective of the targeted nature of the requests and the interest of the participants in the topic (91% of the total eight questions were answered in full).

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<th>Category</th>
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<td>During 1980s or 1990s</td>
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<td>Since 2000</td>
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The sample size at 104 allows for results of statistical significance at the overall level although, inevitably, the sub-groups within the overall sample are smaller. They are also not completely evenly spread and this limits the potential for a fully statistically significant analysis at the sub-group level. Nevertheless, the results do provide indications and suggest that it may be worth investing in a larger study to confirm a number of interesting observations. There is also of course the fact that some respondents are reporting on experiences that may have occurred several decades ago and they may not recall the full details correctly. It would also be useful to have a richer picture of the graduates’ profiles, e.g. if the respondents had part-time jobs during their degree, what types of extra-curricular activities (music, drama, sport) they were involved in, their career profile to date and so on. Such supportive data from a larger sample size would help identify other significant relationships and trends.

Table 1. Profiles of the graduates included in the employability survey.
Table 1 summarises the profiles of the sample in terms of undergraduate degree era, subject discipline area and gender. With over a 100 respondents, it is an acceptable sample size to identify issues of importance and it could also act as a platform for further and larger research studies.

The responses from these graduates provided the data required to address the research objectives of identifying indications of differences in experiences and attitudes amongst graduates, by era of study, discipline and gender, about the provision of employability-related support during undergraduate degree programmes. The sampling procedure can be described as a combined stratified and one-stage cluster sampling, taking degree programmes at the different higher education institutions as the primary sampling units, and the groupings of era, discipline and gender as strata. The subject disciplinary categories are essentially at a faculty level and therefore incorporate many separate individual degree subjects. To help preserve anonymity, and ensure that sufficient returns were made to make faculty-level assessments, the individual degree subjects were not recorded in the survey, but examples are outlined in Appendix 3.

Employability workshop with graduate career advisory professionals

The workshop took place at the Association of Graduate Careers Advisory Services 2013 conference, hosted at the University of Exeter and involving around 600 professionals from higher education institutions, employers, partners and related interested parties. This workshop was chosen by the delegates from a list of seven alternatives available at the same time, and the estimated attendance at all of the workshops in this session is around 230 delegates, 23 of whom, or 10%, chose this particular session (Table 2).

Although in this case the cohort extended beyond the pre-1992 UK universities, this group did nevertheless form the largest single group. The aim of the workshop was to explore graduate employability from the point of view of using enterprise education as a means of developing employability attributes. As such, it involved a presentation of the relevant issues, followed by discussions in smaller work groups to highlight key factors, and a summation of those highlights into a conclusive summary.

Results

Experiences of employability-related support during undergraduate degrees

Questions 4, 5 and 6 (Q4 Q5 Q6) were designed to capture the graduates’ experiences of the employability-related support available during their undergraduate degrees. Q4 focuses on the types of support provided, Q5 on any specific business-related content and Q6 on identifying the deliverers of that support. The results are presented in Table 3 and illustrated in Figure 1.

Support provided

The primary types of support provided (Q4) were of a business and management nature (41%), followed by the careers services (35%) and through external speakers (30%). Of particular note at a disciplinary level is that engineering provided notably high levels of support in business-related fields (58%) and via external speakers (58%), sciences appear to rely on careers services (57%) and social sciences use both business-related and careers services support, while the greatest deficit in support (27%) exists in
humanities. On a gender basis, both sexes appear to have experienced the same overall level of support although the experiences of females appear to lean towards the careers services, while for males the experience is more business-related. Of particular note is the trend identified between graduates from before the year 2000 and those after, where the careers services provision rose markedly by 49% (from 22 to 71%), while business-related support declined by 23%. An enhanced focus on employability-related support is also reflected in the reduction in those who expressed the view that no such support was provided (down from 21 to 5%).

### Business-related content

This question (Q5) focused in on the business-related content and is therefore a more detailed analysis of the primary area of support identified in Q4 and, consequently, there is a relatively high figure (38%) for those returning a none response. Nevertheless, the results are revealing and the principal component of the business-related support provided is shown to be in the area of economics, finance or accounting.
content (37%), particularly in engineering (53%). On a gender basis, females focus mostly (44%) on their managing people and teamwork experiences, while males highlight the business-related content (41%). The trend is again noteworthy with a fall in the level of economics, finance and accounting content by 31% from pre-2000 (45%) to post-2000 graduates (14%).

Deliverers of that support
In Q6, across the whole respondent cohort, departmental staff are the primary deliverers of such support (49%) and this is reflected in humanities (59%) and social sciences (50%), while in the sciences, it is...
professional staff such as careers as the principal deliverers (57%) with external speakers prominent in engineering (58%). Differences by gender are relatively small and reflect the overall picture. The trend from pre-2000 to post-2000 graduates is again revealing, with much of the delivery of employability-related support transferring from departmental staff (falling by 22%, from 55 to 33%) to professional staff such as careers (rising by 47%, from 24 to 71%).

**Views on the need for employability support and the benefits it could provide**

Questions 7 and 8 (Q7 Q8) were designed to seek the graduates’ views on the need for employability-related support during undergraduate degrees (Q7) and on the potential impact of such provision (Q8). The results on impact (Q8) are presented in Table 3 and illustrated in Figure 1. Here, it is clear that the primary benefit is seen to be a better understanding of employer needs (70%), with improved student capabilities (55%) and the development of character and confidence (49%) also highly rated. The results show no particular differences in these views across the disciplines, by gender or over time. For Q7 though, on the need for such support, significant differences do exist, particularly across the disciplines and over time. The results in Table 4 and Figure 2 indicate strong overall support for the notion that employability should be an aim within an undergraduate degree programme, with over 60% expressing a desire for it to be included in a well-managed manner and a further 32% indicating that it should be available, albeit on a more optional basis.

Detailed analyses on the trends over generations and with accumulated employment experience, by subject discipline and gender also reveal some significant variations.

**Trends over time and generational evolutions**

There appear to be some interesting changes over time as illustrated in Figure 3.
A very close association exists between the responses of graduates who took their undergraduate degrees before the 1980s and those from the 1980/1990s. However, the graduates from the more recent era, post-2000, have different views and, while the not-directly group is still the smallest, it has grown in size, and there is also a higher weighting given to the limited-optional approach than the well-managed basis.

**Variations by disciplinary area**

As illustrated in Figure 4, there are some significant variations in attitude by subject disciplinary area. There appears to be some remarkably close associations between some faculty groups, with sciences and humanities graduates sharing the same view that employability-related support should be available in undergraduate programmes, but that issues of optional choice are of more importance to them than they are to engineering and social science graduates who err strongly towards the well-managed approach. The results are essentially the same at the not-directly level, but variations emerge at the optional-limited and well-managed levels.
Influence of gender

Some subtle differences in attitude are also revealed by the analysis of the responses by gender (Figure 5).

While there is a close association at the not-directly end, differences by gender appear on whether the provision of employability-related support should be on a limited-optional or well-managed basis, with female graduates leaning slightly more towards the limited-optional approach than male graduates, while male graduates tend to favour the well-managed. Nevertheless, there are sizeable proportions in both camps and this suggests that although the demand is high, care needs to be taken in how employability-related support is packaged and presented to students.

Discussion

Overall

Brown, Hesketh, and Williams (2003) highlighted that the development of graduate employability cannot be directly linked to the attainment of employment as the availability of, and access to, suitable jobs cannot be guaranteed. This is re-emphasised in the subsequent book, The Mismanagement of Talent (Brown and Hesketh 2004), where it is intimated that the potential benefits of a university education
may be declining at just the same time as it being promoted to students as an ‘investment in your future’. Whether or not this is the case is perhaps a moot point as it may in any event be the best investment option available. Either way, the experiences of the graduates in this research vary but show a clear preference for the inclusion of employability-related support in undergraduate degree programmes. Experiences and views have changed over time and variations in preference exist across disciplines and by gender, suggesting that a one-size-fits-all approach to the provision of employability-related support would not satisfy all parties and that more nuanced and tailored approaches are important.

**Trends over time and generational evolutions**

The results signal a significant shift over recent decades in the way that employability support is provided across higher education. Professional service groups, such as Careers, are taking a much more active role and the overall level of provision rising. However, although this is to be welcomed, a cautionary note is that the link with the disciplinary department remains critical and the right balance needs to be struck between the provision of employability-related support and embedding such support into the disciplinary curriculum and aims. In terms of views towards the provision of employability-related support, a very close association exists between the responses of graduates who took their undergraduates degrees before the 1980s and those from the 1980/1990s. However, post-2000 graduates have different views and, while the not-directly group is the still the smallest, it has grown in size, and there is also a higher weighting given to the limited-optional approach. This could be due to generational differences such as those outlined in descriptions of Generation Y, N or Millennials (Feiertag and Berge 2008; Howe and Strauss 2000) or due to opinions evolving as the accumulated years of post-graduation employment experience increase. The pre-1980s graduates are likely to have been born mainly in the 1940s/1950s, the 1980/1990s in the 1960s/1970s and the post-2000 in the 1980s/1990s, and whether it is a generational or experience effect, the differences are stark. Trends in employability-related support over recent years have included increased levels of engagement by academia with industry (Salter et al. 2010) and a revitalisation for the inclusion of work placements and similar initiatives (Wilton 2012) in undergraduate programmes. In addition, comprehensive analyses of undergraduate competence in a range of employability skills (Jackson 2014) reveal further ways that curricula and pedagogy can be adjusted to suit the development of employability in students. Even if the beneficial impact lasts for just a few years, as identified in Wilton’s (2012) review of work placements and by Greene and Saridakis (2008) in their study of self-employment, it could still be the key foundation for establishing a foothold in the world of work.

The research here indicates that post-millennium graduates appear to be different from their predecessors and this is supported by studies of Generation Y (Feiertag and Berge 2008; Luscombe, Lewis, and Biggs 2012) which show that this generation, compared to prior groups, has a greater preference for collaborative work, want clear signposting of issues and is influenced by the technology used to deliver materials. Jackson (2009) also highlights the need for new profiles to be drawn up to reflect industry’s requirements of the modern graduate. Hinchliffe and Jolly (2011) take this further by arguing for a new set of themes to go beyond graduate skills, competences and attributes, and to focus on a graduate identity based on values, intellect, social engagement and performance. It is perhaps issues such as these that are reflected in the evidence here that the modern graduate is different and, although significant progress has been made in the provision of employability development opportunities, a new sense of direction may be required to fulfil the modern graduate and hence also fulfil the myriad of other associated key stakeholders, including employers, higher education institutions and government.

**Variations by disciplinary area**

In studies on graduate employability across several subject disciplines, Mason, Williams, and Cranmer (2009) identified the benefits of exposing students to employers’ involvement in the design and delivery of the curriculum. However, differences between disciplinary areas were not identified and, while
this work confirms the benefits to be gained in terms of graduate employability, it also highlights that differentiations across disciplines in the way those services are delivered is likely to result in more students harnessing those attributes. Research in specific subject areas has also yielded some supportive and contrasting evidence. For example, both Rosenberg, Heimler, and Morote (2012) and Jackson and Chapman (2012) addressed issues concerning the skills and competencies of business degree graduates and, although no particular sub-disciplinary variations were found, they did identify a need for further research in disciplines beyond the field of business; this study is one step in that direction. The findings here show that the graduates’ preference in engineering subjects is for a well-structured approach to employability-related support and this is reinforced by the work of Stiwe and Jungert (2010) who, in their study of engineering students and their experiences of the transition from study to work, found that the best learning experience was through a thesis project in a firm, an example of a well-managed approach to employability support. Nevertheless, the findings of the gender analysis presented in this paper are also worth bearing in mind as it may be that the inclusion of more optional approaches to employability-related support may help in the ongoing efforts to attract more females to the engineering profession.

Salter et al.’s (2010) review of academics collaborating with industry and entrepreneurship in the field of engineering and physical sciences also outlines some interesting differences between engineering and sciences, particularly in the apparent take-up of entrepreneurial activities. Further research to explore these differences is suggested and the research presented here starts to throw some light on the matter from the perspective of a graduate rather than an academic. Interestingly, Cranmer (2006) also focuses on academics’ attitudes towards employability issues and, although indications of disciplinary variations are commented upon, they are not analysed further. This study provides analysis and evidence that such variations do exist from the perspective of graduates.

Influence of gender

Moreau and Leathwood (2006) and Wickramasinghe and Perera (2010) outline in their studies of students in higher education that gender variations could exist in the development of suitable employability-related traits. This research supports those indications but extends it further by providing some further evidence for that view. The Nabi and Bagley (1998) study on graduates’ perceptions of their capabilities to deliver certain transferable skills highlights important gender differences, with females demonstrating less confidence in their problem-solving and communications skills. Those findings, coupled with this research indicating that female graduates prefer a more consultative approach to the inclusion of employability-related support during undergraduate degree programmes, suggest that modifications to the delivery method of such support could reap rewards. For example, to achieve success across the full body of students, it may be advantageous to offer an option for mandatory and elective provisions of employability-related support. The indication from this research, that there are potential benefits for each gender in adopting tailored approaches to the delivery of employability-related support, is reinforced by the work of Burbach, Matkin, and Fritz (2004) on critical thinking, Gracia (2009) on workplace experiences and Ahmetoglu, Leutner, and Chamorro-Premuzic (2011) on emotional intelligence where, in each case, differences by gender are shown to exist. Indeed, although popular public stereotypes also exist about females being more emotionally intelligent and males being more proficient in critical thinking, each individual person is exactly that individual. Therefore, achieving success across the board appears to require that subtleties in approach be adopted.
Triangulated evidence from the graduate career advisory professionals’ workshop

The workshop (Association of Graduate Career Advisory Services 2013) concluded with a compendium of key issues that supported in part both the literature review and the graduates' survey. Of the 13 issues highlighted, one (8%) directly supported the literature review findings on the importance of employability with regard to university rankings, four (31%) confirmed the need to allow for disciplinary variations and eight (61%) addressed the means of providing such support:

- **University rankings**: Delegates emphasised the rising importance of employability-related issues in university rankings through, for example, the National Union of Students NUS surveys.
- **Variations across subject disciplines and by gender**: The care required in the use of terminology across faculties was highlighted, as was tailoring employability support towards the degree subject and the need to support and train academics. No specific reference was made to variations by gender which is interesting if only for the fact that the delegates were primarily female (18 of 23; 78%) but neither the male nor female delegates raised any particular concerns about gender-related issues. Nevertheless, it may be that a suitable opportunity to raise such an issue did not arise in this forum.
- **Managing employability support**: It was agreed that a balance needs to be achieved between optional and mandatory approaches, that varieties in assessment methods help, and that a steady progression in employability-related support during the degree was sensible. Appropriate platforms could include initiatives involving enterprise, student societies, volunteering and skills.

The professionals' workshop has therefore reaffirmed some of the findings from the literature review and the graduates' survey, in particular the growing importance of employability-related support for both graduates and their institutions, the need to address disciplinary variations, and the balance that needs to be struck between mandatory and elective modes of approach.

Conclusions

The issue of enhancing graduate employability has been high on the agenda for multiple stakeholders in higher education internationally for some time now. This research confirms that, while there is a definite demand from graduates for the inclusion of employability-related support during undergraduate degrees, more account needs to be taken of some significant and subtle differences in how this may be best achieved, particularly with today's student body, in different subject disciplinary areas and across gender.

Of the graduates surveyed, their experiences of employability-related support during their undergraduate degree have shown some interesting variations and, in terms of views, one in 10 prefers concentration on the subject discipline, whatever their generation, discipline or gender. However, nine in 10 of graduates across generations, disciplines and gender want to see employability support on the undergraduate agenda, with significant variations around whether or not that support should be on an optional or well-managed basis. Within these groups of nine in 10 graduates, there has been a generational shift with six in nine of pre-2000 graduates preferring the well-managed option while post-2000 graduates are equally balanced between an optional and well-managed employability approach. Whether this is due primarily to generational evolutions or to views changing as employment experience increases is not clear at this stage and it may indeed be a blend of the two factors. Groupings of disciplinary preferences also exist, with eight of both social sciences and engineering graduates indicating a preference for the well-managed approach and one for optional while, for graduates of humanities and sciences, six prefer well-managed provision and three an optional approach. Differences in attitudes by gender also exist, with six in nine males leaning towards the well-managed route and three towards options while, with female graduates, five prefer well-managed provision and four the optional approach.

These graduates' actual experiences of employability-related support during their undergraduate degree signal a significant shift over the last two decades in the way that employability-support is
provided across higher education. Professional service groups, such as Careers, are taking a much more active role and the overall level of provision rising. However, although this is to be welcomed, care needs to be taken to ensure that the link with the academic disciplinary department is retained. The right balance needs to be struck between the provision of employability-related support and integrating that support into the academic aims and curriculum. Whether or not there is a correlation between the experiences and attitudes of graduates cannot be confirmed by this research. However, it is possible that such a correlation exists since the changes in experiences (an overall rise in employability support provision, with that increase coming primarily from professional service groups such as careers rather than from departmental academics) correspond with a change in attitudes (an enhanced preference for optional provision rather than provision integrated into the curriculum for example).

**Further research**

Experiences, trends and generational attitudes to graduate employability deserve further exploration, including appraisals of the impact of different higher education policies over the years. From a degree subject disciplinary area viewpoint, this study is essentially at a faculty level, and individual disciplinary studies within faculties are also needed to reveal specific issues at a degree programme level. In addition, confirmatory research is required on the gender-related aspects, as the differences identified here are relatively subtle rather than definitively significant. Confirmatory research is also needed on the potential correlation between the actual experiences of graduates of employability-related provision and their attitudes towards the extent to which employability support should be provided in undergraduate degrees. Such a correlation could be identified in a study of a larger sample.

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No potential conflict of interest was reported by the author.

**Notes on contributor**

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Appendix 1. What employers look for in graduates

Based on Higher Education Careers Services Unit and Association of Graduate Careers Advisory Services (2010) report on What Do Graduates Do? (Table A1).

Table A1. What employers look for in graduates.

<table>
<thead>
<tr>
<th>Skill required</th>
<th>What employers are seeking</th>
<th>Examples of how demonstrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-reliance</td>
<td>Self-awareness; proactivity; willingness to learn; self-promotion; networking; planning action</td>
<td>Duke of Edinburgh award; music band; competitive sports; public speaking; amateur dramatics</td>
</tr>
<tr>
<td>People</td>
<td>Teamwork; interpersonal skills; oral communication; leadership; customer orientation; second language</td>
<td>Working in a restaurant; charity fundraising; voluntary work; team sport; Air Training Corps</td>
</tr>
<tr>
<td>General</td>
<td>Problem-solving; flexibility; business acumen; computer literacy; numeracy; commitment</td>
<td>Young Enterprise award; project work; member of student societies and clubs</td>
</tr>
<tr>
<td>Specialist</td>
<td>Specific occupational knowledge skills; technical skills</td>
<td>European Computer Driving Licence; language skills; web design skills; writing articles; other qualifications</td>
</tr>
</tbody>
</table>

Appendix 2. The questionnaire used in the survey

The questionnaire and the response options available are set out below; Questions 1, 2 and 3 provide the profile of the respondents; Questions 4, 5 and 6, respectively, address the respondent’s experience during their degree, highlights specific initiatives related to employability, and identifies the deliverers of such support; Questions 7 and 8 seek views on the need for such support and the benefits it could provide.

Graduate profile (One choice only in each question):

1. What is, or was, the core of your undergraduate subject?
   b. Engineering
   c. Humanities.
   d. Other (please specify).

2. What is your gender?
   a. Male.
   b. Female.

3. Which era includes your undergraduate years?
   a. Before the 1980s
   b. In the 1980s or 1990s.

Experiences of graduate (Multiple choices available in each question):

4. Did, or does, your undergraduate course include any of the following?
   a. Business- or management-related content.
   b. External speakers from industry or business.
   c. Support from groups such as the university careers service.
   d. Other (please specify).

5. Did, or does, your undergraduate course include any of these subjects?
   a. Enterprise or entrepreneurship issues.
   b. Economics, finance or accounting.
   c. Marketing or sales matters.
   d. Business planning or strategy.
   e. Managing people or teamwork.
   f. Other (please specify).

6. Who delivered, or delivers, such materials?
   a. Academic staff from your department.
   b. Academic staff from a business or management department.
   c. Other professional university staff such as from the careers service.
   d. External speakers from industry or business.
   e. Representatives of professional bodies.
   f. Other (please specify).
Views of graduate (One choice only in Q7; multiple choices available in Q8):

7. Should developing employability be an aim for undergraduate university degrees?
   a. Not directly; concentrate on the core subject.
   b. To some extent, but in limited and optional way.
   c. Yes, and in a well-managed way.
   d. Other (please specify).

8. What do you think could be the main impact of such activities?
   a. A better understanding by students of potential employer needs.
   b. Further development of the student's character and confidence.
   c. Improvement in the capabilities of the student.
   d. Other (please specify).

Appendix 3. Undergraduate degree disciplines

The disciplinary subject area options available for selection in the question are at a faculty-level and include many different individual degree subjects. Within different universities, it is sometimes the case that certain subjects tend to be placed in different faculties, for example, law in humanities or social sciences. Typical degree subjects include:

   b. Engineering: chemical, civil, electrical, mechanical.
   c. Humanities: classics, languages, religion, arts, literature, music, philosophy.
   d. Social Sciences: psychology, economics, education, politics, geography, sociology, history, law.