

Students' reflections on an employability skills provision

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Abstract

For many years a key driver for Higher Education Institutions (HEIs) has been ensuring that students are prepared for employment post-graduation. This has often resulted in HEIs providing specific modules of study focussing on employability or soft skills. The existing research literature presents a variety of strategies for embedding employability within curricula, often focusing on frameworks to review the provision of employability opportunities within a degree programme. The authors have previously investigated an employability module within an Undergraduate Chemistry Programme at their own UK HEI, particularly focusing on students' perceptions – these coalesced around the themes of personal progression, relevance of the module and interactions. However, before using these findings to further develop the module, it was deemed necessary to investigate the module in a different context. This study investigates the employability module in an Australian HEI and its delivery to Undergraduate and Postgraduate students from a range of different disciplines. Free text comments from questionnaires answered by 85 participants were subjected to thematic analysis in order to understand students' perceptions of the module in this new context. The new thematic map was compared to that from the original study to reveal several key similarities and differences between students' perceptions. However, the most important finding was that employability modules should be tailored to the specific cohort to ensure it is aligned with their needs. This suggests that central university employability module providers should work closely with individual departments to maximise the impact of these for students.

Keywords

career development, career resources, employability, skills development

1. Introduction

1.1 The Definition of Employability and the Graduate Employment landscape in the UK and Australia

Compelling evidence supports the argument that a degree is no longer sufficient for employers (Tomlinson, 2008; Smith *et al* 2016) and that graduates must also possess an array of additional skills. This review considers the definition of employability and discusses the links between employability skills and graduate attributes. It compares graduate employment rates, in both the UK and Australia, and discusses the similarities and differences in each Higher Education (HE) sector. It also outlines a number of strategies for embedding employability in the curriculum, explores the practical resources which are available to support employability and outlines the aims of this study which compares the delivery of practical resources to both UK (specifically Scotland) and Australian students.

There have been a multitude of definitions of employability (Hillage & Pollard, 1998; Dacre Pool & Sewell, 2007; Bennett, 2016). Additionally, in the UK, employability has been defined in a number of ways including a set of achievements that makes graduates more likely to gain employment and be successful in their chosen occupations (Yorke, 2006). Harvey (2003) states that employability is more than just developing attributes to enable a student to get a job and emphasis should be on developing critical, reflective abilities, with a view to empowering and enhancing the learner. In Australia, Small *et al* (2018) proposed the definition of employability as the capacity to be self-reliant in navigating the labour market, utilising knowledge, individual skills and attributes, and adapting them to the employment context, showcasing them to employers, while taking into account external and other constraints. While these definitions vary, it is clear that students in both countries need to be able to reflect on their skills, articulate them to employers and adapt them appropriately for a variety of different contexts.

Preparing students for employment post-graduation has been a key driver for Higher Education Institutions (HEIs) for many years (Tomlinson, 2017; Succi & Canovi, 2020). In the UK, the CBI/Pearson Education and Skills Survey (2019), which represents over 190,000 employers, states ‘...Employers are also very clear about what they need from the education and skills systems: skills, behaviours and attributes that ensure... graduates, are ready for the world of work.’ Additionally, the concept of future-ready and globally-aware graduates has gained prominence (Hristov & Minocha, 2017; Moore & Morton, 2017) and is another factor HEIs must be aware of. The specific skills which employers most look for in the UK (Prospects: Student Career Guide, 2020) and Australia (Graduate Careers Australia)

are contrasted in table 1.

UK Student Career Guide	Graduate Careers Australia
Resilience	Adaptability
Leadership and Management	Time Management and Organisation
Dealing with conflict	
Good communication	Oral and written communication
Planning and Research skills	Creative problem solving, critical and analytical thinking, information gathering, evaluation and synthesis
Teamwork and interpersonal skills	Teamwork and interpersonal skills
	Initiative and enterprise
	Emotional intelligence

table 1: Specific skills which employers look for

Many of the skills which employers are seeking are similar in both countries. UK employers specifically desire skills in dealing with conflict which does not seem to carry the same importance in Australia. Australian employers rate both initiative and enterprise and emotional intelligence as being important while UK employers do not specifically mention these skills.

Emphasis on developing graduate attributes, often described as life-long learning, generic, transferable or soft skills, has emerged from the focus on graduate employability (Oliver, 2011). It is claimed that the boundaries between employability skills and graduate attributes has become so blurred that the terms are interchangeable (Oliver & Jorre de St Jorre, 2018).

In Australia, there have been numerous projects (Oliver, 2011 & 2015; Freeman & Ewan, 2014; Barrie *et al*, 2014) designed to identify graduate attributes. Indeed, the Higher Education Standards Framework (Commonwealth of Australia, 2015) stipulates that 'the learning outcomes for a course must include generic skills important to employment'. The graduate attributes in Australian institutions are frequently interrogated as part of the quality assurance process and institutions increasingly use them as a measure of attainment for successful students (Hill *et al*, 2016). A survey of graduate attributes in Australian HEIs (Oliver & Jorre de St Jorre, 2018) indicated that they were broadly consistent although some institutions emphasised certain attributes more than others. These attributes were summarised as follows: communication; critical thinking; global citizenship;

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3 teamwork; independence; problem solving and; information literacy. The authors of the survey
4 recommend that all institutions publish the attributes which they focus on and ensure that
5 attributes are explained, contextualised and communicated to students. They should also be
6 reviewed and refreshed regularly to ensure they are fit for purpose.
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10 Research on graduate attributes in the UK context appears to be much more limited. Eight
11 attributes were identified by Hounsell (2011) and include lifelong learning; research, scholarship and
12 enquiry; employability and career development; global citizenship; communication and information
13 literacy; ethical, social and professional understanding; personal and intellectual autonomy; and
14 collaboration, teamwork and leadership. In Normand and Anderson's (2017) study they outline
15 graduate attributes as: adaptable, agile, digital, empathic, ethical, learning, professional, reflexive
16 resilient and self-aware. More recent work (Wong *et al*, 2021) has attempted to fill this gap in the
17 UK literature by undertaking a systematic national mapping of graduate attributes as publicised by
18 UK universities. Findings outline the most prominent graduate attributes as: self-awareness and
19 long-life learning; employability and professional development; global citizenship and engagement
20 and; academic and research literacy.
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24 It is worth noting that the rates of graduate employment in each country are not dissimilar. The
25 most recent available figures for 2019 indicated that 73.0% of Scottish University graduates
26 (Universities Scotland, 2019) were in graduate level jobs six months after graduation while in
27 Australia 72.9% of undergraduates (Universities Australia, 2019) had gained employment. For UK
28 chemistry graduates specifically 2019 statistics show that 58.5% of chemistry graduates are
29 employed with 23% in further study while 8% are working and studying (Prospects, 2020). In
30 Australia, over 61% of chemistry graduates find full-time employment after graduation in a
31 chemistry field (gradaustralia).
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44 **1.2 Models and Frameworks for Embedding Employability**

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46 Ways in which to embed employability within curricula have been widely discussed. Numerous
47 approaches have been developed including: the DOTS model (Law & Watts, 1997) which guides
48 students through decision learning, opportunity awareness, transition learning and self-awareness,
49 and prepares them to cope with change; the USEM (Understanding, Skills, Efficacy and
50 Metacognition) model (Knight & Yorke, 2004) which suggests approaching tasks as opportunities for
51 learning rather than opportunities to demonstrate competency is more beneficial and; the
52 CareerEDGE model (Dacre Pool & Sewell, 2007) which, it is claimed, is more accessible to
53 stakeholders than USEM. The name is derived from the five components of the lowest tier of the
54 model: career development learning, experience, degree subject knowledge, generic skills and
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3 emotional intelligence. The concept of students developing capability (Stephenson & Yorke, 1998;
4 Stephenson, 2001) can also assist in embedding employability into programmes. It has been
5 suggested (CBI/Universities UK, 2009) that the focus should be more on graduate attributes rather
6 than employability skills and that any employability model should also involve career management
7 skills (Bridgstock, 2009).
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11 HEIs are keen that graduates are career equipped and it is crucial when developing and embedding
12 employability skills that the views of employers and recruiters are kept in mind. A survey of over 700
13 employers (CBI/Universities UK, 2009) found that 78% agreed that employability skills were their top
14 priority and 75% believe that universities should prioritise improving employability skills. More
15 recently a 2016 survey (CBI/Pearson Education, 2016) indicated that 30% of employers were
16 dissatisfied with graduates' international cultural awareness. While this is an improvement from the
17 previous year (43%) this lack of awareness must be addressed. Companies can assist with this and
18 84% of large businesses already have links with universities and employers can help to identify skills
19 which relate to long term employability (Cox & King, 2006). The creation of a forum for current
20 students, graduates, academics and practitioners (Gill, 2018) is allowing Australian HE students to
21 build their employability skills by direct engagement with industry leaders. Employers, however,
22 need to continue to take steps to better inform HEIs of their needs (Connor & Shaw, 2008).
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33 **1.3 Resources Available to Support Employability**

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35 A range of resources designed to support the embedding of employability skills into the curriculum
36 has been developed (QAA, 2006, Pegg *et al*, 2012). These includes contributions from a number of
37 individual institutions: an Employment Development Profile created at the University of Central
38 Lancashire; an Employability Development Opportunities Review Toolkit which supports course
39 teams in reviewing employability opportunities within programmes from the University of Ulster and
40 the Redesign of the Learning Experience resource from Birmingham City University engages students
41 and staff in reviewing employability. Other resources such as the employability toolkit (Clark *et al*,
42 2011) are useful in identifying where gaps occur in existing programmes and resources to encourage
43 students to take responsibility for their own employability skills (CBI/NUS, 2011) have been
44 developed. Employability activities in over 150 UK institutions were summarised in a QAA survey
45 (QAA, 2016). While the resources outlined above are useful in supporting institutions to develop
46 their thinking about embedding employability into their programmes, a review of the literature
47 indicates there is an apparent lack of specific practical resources which have been developed for in
48 class use and only two were identified. The PACE (Professional and Community Engagement)
49 programme (McLachlan *et al*, 2017), supports students in self assessing employability skills and uses
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an assessment centre model to develop their competencies in this area. The SEEN (specify, explain, embed, nudge) toolkit has been developed (Kensington-Miller *et al*, 2018) to help students reflect, articulate and actively develop 'invisible' attributes such as time management and work-life balance skills.

This scarcity of resources led to the development, by the authors, of a suite of practical employability tools (Scott *et al*, 2019).

While these resources were developed for delivery to students in our own discipline, Chemistry, they were designed to be non-discipline specific so that they could be used more generically. We were also keen to ensure that they were external-expert centric to support articulation of students into the working environment. Feedback from industry partners had indicated that our students would benefit from additional training in recognising and articulating their skills recognition to enhance their employability. The lack resources recorded in the literature coupled with this feedback encouraged us to create a toolkit to support students. The resource package contains 9 separate resources, see table 2, and was made available for use across all HEIs. Through dissemination, over 100 institutions worldwide have accessed the resources.

Session		Details
1	Baseline Employability	An instructional interactive session on skills recognition using a case study to encourage students to think about whether they are suited to a job and whether the job is suitable for them, plus activities to assist students to identify their baseline skills.
2	CV Writing	Workshop providing information on what a CV is, what should be included and how to improve their CV. After an initial presentation, students evaluate a mock CV and then use the information learnt to improve their own CV.
3	Assessment Centres	An interactive session that includes example activities that are included in assessment centres.
4	Business Culture and Ethics	An instructional interactive session on business organisations and culture and professional integrity. Students participate in a number of activities to put this into practice.
5	Self-marketing	Instruction on a broad overview of marketing concepts and then a series of activities on using these skills to apply these to their personal profile.
6	Psychometric Assessments – Taking the Fear Out of Assessments	An interactive session on psychometric assessments, including both ability and personality assessments. Students then put this training into practice through completing a range of example questions.

7	Developing a Social Media Plan – Focusing on Graduate Job Searching	A review of social marketing opportunities that will also provide students with instruction in good practice when engaged with social media, before focusing on activities that explore the role of social media in finding jobs.
8	Crisis Management – Its Importance and Your Role	Instruction in crisis management and then activities to explore the decisions and actions which need to be followed.
9	Preparing for Interviews	Initial instruction in interview technique, then several generic interview questions that students can use to practise their interview technique in groups, participating as both interviewer and interviewee.

table 2: Summary of resources contained in the toolkit

These resources have also been used to develop skills recognition competence at the University of Strathclyde, a Scottish Institution, since 2012 and we additionally carried out a four-year study of student feedback (Scott *et al*, 2019). A key finding of this analysis was a thematic map that captured students' reflections on these modules. Analysis revealed three key themes, each of which had further sub-themes. The interactive nature of the module was recognised and students highlighted the input of external experts and the opportunity to work in teams as particularly beneficial. The provision of instant feedback was also important and could lead to immediate improvements. The second theme focused on the relevance of the module and dichotomous views were expressed regarding the content. Some students expressed concerns that the module lacked focus on discipline specific material while others recognised the holistic approach to skills training in a wider context. These separate views also existed in the timing of the module with some students believing that they already knew much of the content while others commented that they wished they had received this instruction earlier in their studies. The third theme acknowledged that students had personally progressed through their engagement with the module. While most students indicated that they had grown in confidence, only a small proportion of students identified how they would act upon the skills they had gained with the majority of students at least recognising they had gained skills. They also acknowledged a clearer perspective on the qualities desired by employers and heightened confidence in considering whether particular companies were the 'best fit' for them.

1.4 The aims of this Study

Our expertise in this area led to a specific request to deliver specific parts of the resource package to students in the University of South Australia (UniSA), thus, allowing the opportunity to further analyse the general applicability of the resource package, specifically by examining it in a different context. There are a number of differences between this study and our previous one (Scott *et al*, 2019): the resource package used at the University of Strathclyde (UoS) is a compulsory part of the

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3 curriculum while in UniSA students attended voluntarily; all 8 resources within the toolkit are
4 delivered at UoS while at UniSA only those resources which were perceived to fill gaps in provision
5 were delivered, namely resources 4, 5, 7 and 8; the UoS cohort were all Chemistry undergraduate
6 students and at UniSA the class comprised a mixture of both undergraduate and postgraduate
7 students from all disciplines; the age profile of the class at the UoS was 19-23 while at UniSA it was
8 19-64; and the percentage of international students engaging with the module at Strathclyde in each
9 year of the previous study never exceeded 4.0% while at UniSA 31.6% of the cohort attending were
10 international.

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12 This small-scale exploration looks at the feedback on the resources which were delivered at both
13 Strathclyde and UniSA and carries out a comparative analysis to address the following questions:

- 20 1. What are students' perceptions of such a module and can these perceptions be used to
21 further enhance our student employability programme?
- 22 2. Do the students' perceptions between the two environments (Strathclyde and UniSA)
23 differ?
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29 30 2. Methods

31 32 2.1 Study Design and Participants

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34 In order to enable a transparent comparison between our previous study and the new study
35 contained herein, details of both are provided.

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37 In the previous study, the toolkit was implemented in its entirety across four academic years at UoS,
38 2012/13 to 2015/16, and the participants were principally final year students enrolled in BSc
39 (Honours) Chemistry degree programmes; however, some 4th year internal placement Chemistry
40 Masters students and Chemistry MSc students, were also included. Of the 116 students that
41 undertook the module 108 (93%) fully completed the questionnaire. The student cohort who
42 completed the questionnaire were primarily from the UK with 4.0% of students being identified as
43 international and with an age profile of 19-23.

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45 Colleagues at UniSA requested that 4 of the 9 resources (resources 4, 5, 7 and 8) be delivered to
46 their students: Self-Marketing; Creating a Social Media Plan; Business Culture and Ethics; and Crisis
47 Management. These topics were chosen by UniSA as they perceived them to be gaps which existed
48 in their own employability skills provision. The workshops were advertised to all students at UniSA
49 who were invited to sign up, on a voluntary basis, as part of the Aspire Programme. ASPIRE is a
50 development programme designed to increase self-awareness and develop the leadership skills and
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3 knowledge needed to thrive in a globally competitive economy. The Programme is in addition to the
4 established curriculum and there was no desire, on UniSA's part, to embed them into the
5 curriculum. Each workshop was a stand-alone session of 150 minutes and students could sign up for
6 more than one workshop. Each workshop therefore included both undergraduate and postgraduate
7 students from a wide range of subject disciplines. Of the 113 students who attended the workshops
8 85 (64%) fully completed the questionnaire. 31.6% of the student cohort who completed the
9 questionnaire indicated that they were international, originating from countries outside of Australia,
10 and with an age profile of 19-64.

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12 For this study, participants from UniSA were asked to complete a questionnaire reflecting on how
13 useful they perceived the workshops to be. Specifically, this comprised a free text response question
14 asking: "Overall, how useful would you rate the workshop?".

23 2.2 Data Analysis

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25 As in our previous study (Scott *et al*, 2019), our chosen approach to analyse the free text responses
26 was inductive thematic analysis (Braun & Clarke, 2006), which is an approach independent of theory
27 or epistemology. This is in contrast to approaches, such as grounded theory, that assume a particular
28 theoretical or epistemological position at the outset. Although we closely follow the inductive
29 thematic analysis approach set out by Braun and Clarke (2006), transparency of methodology is
30 crucial in qualitative analyses (Attride-Stirling, 2001) and so a detailed account of our approach is set
31 out below.

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33 The inductive thematic analysis was carried out by both authors. First, the researchers became
34 familiarised with the data, without explicit reference to literature theory, to ensure the analysis
35 formed an inductive approach (Tuckett, 2005). It should be noted that as both authors have
36 previously conducted research in this area, there was already a degree a familiarity with the
37 literature. However, the previous study both authors were involved with concluded several years
38 previously, and both authors specifically did not refamiliarize themselves with their previous work.
39 The data from the free text responses in the questionnaire was pooled to ensure that coding and
40 themes were not constrained by session topic and to promote the emergence of cross-cutting
41 themes. Early in the coding process, the authors decided to code on a sentence-level grain size
42 resulting in multiple 'units' of analysis for each free text response. Each of these 'units' was stored in
43 single cells in a Microsoft Excel spreadsheet and the identified codes placed beside the appropriate
44 response 'unit'. Each researcher carried out a round of independent code generation on the data set
45 before codes were compared. Where researchers used codes with the same meaning but different
46 designations, one was selected without issue. Where codes of different meaning had been used to
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3 describe the same statement, or where a statement had been assigned different codes between
4 researchers, discussion took place until agreement was reached. It should be noted that before
5 discussion, 82% of the statements were similarly coded and an approximately equal number of code
6 changes were made in favour of each researcher during discussions resulting in 100% agreement.
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8 Any generic positive or negative statements (e.g. “the session was fun”) that did not provide
9 insightful information about the data were coded as such but did not form part of the thematic
10 analysis.
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15 Once codes were agreed upon, both researchers independently grouped the codes into themes, and
16 created thematic maps, to find meaning in the data. These independent thematic maps were then
17 discussed to define a single consistent thematic map. Finally, each theme was analysed in detail, in
18 collaboration, in order to construct meaning from the data, and also to select representative data
19 items in support of these conclusions. This entire process took place over several months in order to
20 allow for sufficient reflection to minimise biases in the interpretation. Once the analysis and
21 discussions on the UniSA data set were concluded, they were contrasted with those from the
22 previous UoS study. As before, both researchers independently reflected on the two data sets, prior
23 to discussing and settling on a joint interpretation.
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31 Triangulation is important to ensure that the data and results are both reliable and valid, and we
32 sought to achieve this in several ways. Investigator triangulation (Denzin, 2009) mitigates bias
33 through involving different investigators who may not agree on the interpretation of the data. We
34 achieved this by having both authors equally involved in the data analysis process. This was further
35 improved by the team having varying degrees of closeness to the study, in that one author delivered
36 the training material in the research environment, whereas the other was only involved with data
37 analysis. This allows for multiple perspectives to be included in the data analysis, further
38 contributing to triangulation (Shenton, 2004; Krefting, 1991). Data triangulation (Denzin, 2009) was a
39 key driver for this study as we sought to understand student perspectives of employability in a
40 different physical environment (Australia) and different types of students (post graduates of multiple
41 disciplines) compared to our original study presented in Scott *et al.* (2019) (Scotland, and
42 undergraduate chemistry students, respectively). Therefore, we improve data triangulation by
43 presenting a comparison of both data sets within this study.
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54 3. Results

55 3.1 Thematic Coding of Australian Feedback

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3 Inductive thematic analysis of the student feedback collated from the questionnaires resulted in the
4 emergence of 3 themes. Each theme was further composed of a variety of individual codes (figure
5 2). Each of these themes will now be discussed in detail.
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8 **Reflections**

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10 A key aim during the design and development of the activities was to ensure they encouraged
11 students to reflect on their experience and skills set and to support them in planning how to improve
12 their skills as a result of their engagement with the resources.
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15 **Reflections: Change to be put into practice**

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17 It was clear from some student comments that this approach was recognised and valued by them
18 and that they would change their practices due to participating in the activities.
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22 *"I am looking to put what I learned into practice."*
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24 *"It helps me how to set up a social network."*
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27 *"The workshop reminded me that my personal values are important when looking at*
28 *employers."*
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30 **Reflections: Change acknowledged**

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32 A significant number of students, however, acknowledged that engagement with the activities had
33 made them aware of different approaches to thinking about employability although they were yet to
34 consider how to put this into practice.
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38 *"I thought about business culture and organisational values in a different manner."*
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40 *"We learn to be able to tackle the companies culture, their purposes, values and principles."*
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42 *"The workshop broadened my thought on how to market myself to potential employers."*
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45 *"Good to think about marketing with a different perspective. Changing weaknesses to*
46 *positives was good, looking at your attributes."*
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49 The broad range of subject disciplines, the significant number of international students involved and
50 the wide age profile within this cohort were reflected in some of the comments where students
51 identified specific activities which they had particularly welcomed.
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55 *"The level of importance placed on social media here is quite different from what I am*
56 *familiar with."*
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58 *"Crisis management, awareness and skills ought to be taught to all students. Very essential*
59 *skills to have in the workplace."*
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3 *"Helped me think like a PR agent."*
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5 One student acknowledged that the activities had challenged their perceptions on employability
6 completely.
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9 *"I thought I knew better before the workshop."*
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11 **Concepts**

12 Students have the opportunity to practice many of the skills within these activities in other modules
13 within their degree programmes and the resources were developed to not only highlight the
14 importance of these skills but to provide further opportunities to enhance them.
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18 **Concepts: Not new**

19 It is interesting to note therefore that a number of students commented that the concepts contained
20 within the workshops were not new but did not comment on whether this further engagement with
21 a concept they were already familiar with had enhanced their skills.
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25 *"Have attended workshops on this topic previously so no new information was presented."*
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27 *"Social media is something I am already familiar with."*
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29 *"Most stuff I already knew."*
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32 **Concepts: New**

33 Other students in the workshops commented that the concepts introduced were new to them and a
34 dichotomy of student experience clearly emerged. Many students recognised the importance of
35 possessing and improving their skills through the use of techniques acquired in the workshops.
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39 *"Now I know some techniques about marketing myself and start to recognise some practical
40 skills."*
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42 *"Knowledge on how to align my attributes with an organisation."*
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44 *"It teaches me ways to self advertise myself."*
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46 *"Marketing concepts explained well for job hunting purposes."*
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49 **Concepts: More wanted**

50 Some students felt that the activities could be broadened to include further concepts. The topics for
51 the workshops were chosen by the home institution as areas where they believed their students
52 were not receiving any support. They were also time bound to fit within a week-long programme for
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3 students and were to be no longer than 2 hours. It is encouraging that the concepts covered within
4 the workshops had stimulated the students to think about other concepts they wished to enhance.

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7 *“Include more info about how to design LinkedIn profile and create personal brand.”*

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9 *“Could you provide some concrete examples of how conflicting personal values versus
10 organisational values affects attitude.”*

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13 *“Help writing connection emails.”*

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15 These and other comments also helped the author to reflect on including further materials to
16 support the students’ experience after the workshops had been delivered.

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19 *“Maybe provide more suggestions on where to go from here, i.e. books to read.”*

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21 *“Delve deeper into how participants can work on their weaknesses and how to work on their
22 CV/resume etc.”*

23 24 25 **Concepts: Context**

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27 The context of the material in the workshops clearly carried importance for the students, although
28 their comments could be portrayed as positive or negative.

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31 *“Real life scenario”*

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33 Each workshop was framed around a situation or series of events which the students need to work
34 through. This comment could mean that students appreciated that the activities were based around
35 real life scenarios. Alternatively, the comment could indicate that the situations used in the
36 workshops were not realistic enough.

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41 *“Not tied to one industry.”*

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43 The students who attended the workshops came from a wide range of differing backgrounds and the
44 concepts for this particular delivery had been chosen to be wide ranging and illustrate situations in a
45 variety of business and industry settings. This comment could indicate that the students welcomed
46 this approach and opportunity to learn about a number of different industries. Alternatively, it could
47 mean that they did not relate to the concepts as well as they could have because they could not
48 recognise their own particular context.

49 50 51 52 53 **Pedagogy**

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55 The workshops were designed to be interactive and a number of students commented on this
56 method of teaching with opposing views.

57 58 59 60 **Pedagogy: Interactive**

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3 Some stated that the workshops had been interactive and therefore beneficial.

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5 *"Great interactive workshop."*

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7 *"Exercises provided an opportunity to practice."*

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9 *"Very practical and hands on. Can use for every day."*

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12 Other students, however, made the opposite observation.

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14 *"Not at all interactive."*

15
16 *"More interactive activities."*

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18 These views highlight the importance of recognising the perception of students around what
19 interactive means. Incorporating the opportunity for students to contribute to the development of
20 interactive activities during the workshops could enhance the experience for all involved.

21 22 23 **Pedagogy: Structure**

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25 Students also expressed differing opinions on the structure of the workshops. Some indicated that
26 they would have liked the workshops to be longer.

27
28 *"Increase duration of workshop. Workshop ran out of time towards the end."*

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30 *"Probably a longer workshop to go further in detail."*

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32 Others indicated that some of the activities could have been condensed.

33
34 *"Shorter scenario."*

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36 *"The lead in information seemed to drag a bit."*

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39 Some students made suggestions which they believe would have enhanced their experience.

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41 *"May the result of discussion written down on the white board to facilitate further discussion
42 if that company not discussed by your group."*

43
44 *"Confusing starting off with personal PR and then switching to crisis management."*

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46 *"Some class discussion before group discussion."*

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48 *"Icebreakers"*

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51 These comments could be related to the differing levels of experience within the cohort of students
52 who attended the workshops. Those who wanted the duration of the workshops to increase may
53 have had less experience of the concepts being introduced although the statement around running
54 out of time could indicate that delivery of the workshop could be better planned. This last point
55 could also be true of the comments around shortening the scenario used. One student submitted
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3 the comment 'icebreakers'. There were no icebreakers *per se* in the workshops as the interactive
4 activities themselves were designed to act as an icebreaker and the comment therefore suggests
5 that the student would like them to be included. The suggestions to enhance the workshops are
6 helpful and will support the further development of the materials for future delivery.
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10 **3.2 Comparison of Scottish and Australian Results**

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12 Earlier analysis of the student feedback collated from the Scottish cohorts also resulted in the
13 emergence of 3 themes: Interaction, relevance of module, and personal progression. Considering
14 each of these themes in turn, and comparing them to the themes which emerged from the
15 Australian study, highlights a number of similarities and differences.
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20 **Interaction**

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22 Within the theme of 'interaction', the importance of teamwork and feedback came through strongly
23 for the Scottish cohort (SC). Interaction was clearly important for the Australian cohort (AC) too and
24 although the terms 'teamwork' and 'feedback' were not used explicitly by them, they commented
25 that activities had been 'collaborative', implying that teamwork was welcomed, and 'they had
26 learned about their personal values' and 'were looking to put what they had learned into practice'
27 which was based on the feedback they received in the workshop. The concept of the workshops
28 being developed and delivered by experts was important for the SC but this did not feature in the
29 analysis of the Australian data. This is perhaps not surprising as a number of different presenters
30 delivered the workshops in Scotland while those in Australia were delivered by one person.
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38 **Relevance of Module**

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40 The relevance of the activities emerged as a theme for the SC with the content and timing of delivery
41 being important. Some Scottish students commented that they already knew the concepts being
42 delivered in the workshops and this was replicated by a number of students in the AC. Others from
43 the SC would have liked access to the workshops earlier in their studies. The AC did not articulate
44 that they would have liked the workshops earlier but did comment that the workshops 'touched on
45 somethings I would generally not think about' and 'could you provide more examples' indicating that
46 it would have been useful for them to engage with activities of this type at an earlier stage. Some in
47 the SC commented that the activities had not been chemistry centric and as chemists this gave them
48 some cause for concern. Others welcomed the fact that the activities provided holistic employment
49 advice. This did not come through as strongly for the AC which is not surprising since they were a
50 much more diverse cohort in terms of their subject disciplines. They did acknowledge, however, that
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3 'crisis management, awareness and skills ought to be taught to all students. Very essential skill to
4 have in the workplace.'

6 7 **Personal Progression**

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9 Personal progression was the third theme which emerged for the SC with employment skills,
10 confidence and perspectives being identified as lower order categories. In terms of employment
11 skills, the SC highlighted those which they had gained from participating in the activities and when
12 they would action those skills afterwards. This aligns with the theme of reflections for the AC where
13 a significant number of students acknowledged that they had learned from their involvement in the
14 activities, e.g. 'We learn to be able to tackle the companies culture, their purposes, values and
15 principles.' with a lower proportion of them stating that they would put what they had learned into
16 practice. The SC comments on perspectives from an employers' point of view and also their own
17 view of how they 'fit' with a company are similar to the comments made by the Australian students,
18 e.g. 'Good to reflect on values in relation to employment and how you want people to see you.' and
19 'Self reflection, being more self aware and thinking about my values and fit for business culturally
20 rather than just a job.' There was no mention of increased confidence from the AC although this
21 featured strongly for the SC. This is likely to reflect that the SC were undergraduate chemists who
22 had little experience of the activities in the workshops whereas the AC came from a multidisciplinary
23 background, had more work experience and a higher age profile which would have afforded them
24 more opportunities for exposure to these types of situations.
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38 **4. Discussion**

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40 Taken together, the results provide several indicators that the employability sessions were
41 successfully implemented in this new context. Broadly, students found the activities useful and
42 acknowledged that they had encouraged them to reflect on their skills. Pleasingly, as for the original
43 Scottish cohort, the Australian cohort reflected on understanding what employers looked for in their
44 employees but also recognised that there is a need for them to reflect on whether their own
45 individual values align with those of a company/business where they may be employed. These
46 findings are not surprising, nor particularly insightful, given that the sessions are specifically
47 designed to develop students' employability skills. However, a more detailed examination of the
48 nuances of the data reveal some interesting observations worthy of further comment. In particular,
49 these insights will be useful for many University teaching staff as the development of pedagogical
50 tools to help students acquire employability skills is seen as increasingly pressing (Archer & Davison,
51 2008; Kalfa & Taksa, 2015).
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3 Some students could immediately see how they could improve their skills by applying what they had
4 learned, while the majority of students acknowledged only that they had learned something. This
5 was true both of the Australian cohort, and the Scottish cohort in our original study. These
6 observations are important from an employer's perspective, as being able to improve one's skill set
7 is often cited by employers as a crucial skill for graduates due to the ever-changing nature of
8 graduate jobs. For example, the rapid evolution of technology is one that must constantly be
9 contended with. Therefore, graduates that are more reflective, and can self-assess their skills set,
10 are likely to be more sought after. These thoughts are consistent in a diverse range of contexts, for
11 example studies in both New Zealand (Hodges and Burchell, 2003) and Ghana (Damoah, Peprah and
12 Brefo, 2020) have highlighted that employers consider willingness to learn as a vital skill in the work
13 place. Within our study, it was clear that certain students were sufficiently reflective, those that
14 were able to anticipate how they could incorporate what they had learned in the workshops into
15 their future practice. This notion complements previous studies, in which graduates' demonstrated
16 awareness of the need to add value to academic credentials (Jackson, 2014; Nilsson, 2010;
17 Tomlinson, 2008). However, the other group of students were reflective to a lesser extent, those
18 who only acknowledged that they had learned something. For this group, it might be expected that
19 their lack of ability to anticipate how new skills can be applied in the future may challenge their
20 ability to meet employers' need for continual professional development. None-the-less, the limited
21 reflection this group of students has shown could be more easily nurtured, in order to develop their
22 long-term employability, than students that were completely lacking in reflective capacity. This may
23 suggest that future work on improving employability skills in students should move away from
24 simply attempting to enhance their present skills set, as we have done in our resources, and move
25 towards a model where reflection, and being able to survey the likely future skills landscape, is more
26 central.

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44 The sorts of students identified in the above discussion were able to enhance their employability
45 skills by participating in the workshops, regardless of their level of reflection. Indeed, those with a
46 greater propensity for reflection were able to identify further employability skills that the workshops
47 did not provide. On the other hand, several students commented that participating in the workshops
48 had not allowed them to develop new skills, and did not even comment on the value of being given
49 the opportunity to practise the skills they had already developed previously. These observations
50 were true in both the present study of the Australian cohort and our previous study with the
51 Scottish cohort. Taken together a key finding from this study is the need to be cognisant of students'
52 prior experiences when developing employability skills programmes.
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3 The presence of a diverse range of prior experiences around employability skills across both cohorts
4 does not only serve as an indicator that instructors must plan for this situation ahead of time to
5 ensure a meaningful learning experience for all, but also alludes to a potential imbalance of equity
6 around employability skills in Higher Education. The widening participation agenda is often focused
7 on access to University for under-represented groups, with the assumption that this will greatly
8 reduce any academic inequity by graduation. However, those from non-traditional educational
9 backgrounds may still have an employability skills deficit at the end of their Higher Education in
10 comparison to their more privileged peers. Thomas and Jones (2007) suggest that these students
11 experience a more challenging transition from University to the job market, and argue that these
12 students require tailored teaching practices to enable equitable participation. Indeed, regarding
13 pedagogy, in our present study, which the authors would suggest uses an interactive approach,
14 there was notable disagreement from the participants as to whether the sessions were interactive or
15 not. It is possible that some participants did not possess a threshold level of knowledge or prior
16 experiences within the subject matter leading to them being unable to fully participate, and leading
17 to the lack of recognition of interactivity of the sessions. This gives further impetus for ensuring that
18 employability skills programmes consider students' prior experiences and that access to them can be
19 achieved in an equitable way.
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32 Whilst the above discussions were consistent between both the original study and this new study,
33 there was also a notable difference between the two investigations. The Scottish cohort explicitly
34 commented on the importance of external experts in the various employability skills in the delivery
35 of the employability sessions; however, these comments were not made by the Australian cohort.
36 This is likely in part due to all the sessions for the Australian cohort being delivered by one of the
37 authors (an expert in all the areas of employability skills provision), whilst the sessions for the
38 original Scottish cohort (carried out in the Institution where both the authors are employed) were
39 delivered by a number of different experts. None-the-less, in both situations experts that could be
40 considered *external* to the cohorts were used to deliver the employability sessions, but this was only
41 identified as important by the Scottish cohort. A further understanding of this observation could be
42 provided by considering the demographics of both cohorts. The Scottish cohort was comprised of
43 undergraduate chemistry students whose future employment is likely to be within a fairly narrow
44 area of the jobs market (assuming they stay within their discipline). The Australian cohort for this
45 new study, however, was composed of undergraduate and postgraduate students from a wide range
46 of subject disciplines, including those with more diverse discipline-specific employment prospects,
47 such as marketing or business. Science graduates have previously been found to place a greater
48 emphasis on the importance of their technical skills, and less emphasis on soft skills, compared to
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3 relevant employers (Saunders & Zuzel, 2010). Therefore, the Scottish cohort, entirely composed of
4 science undergraduates, are likely to derive greater benefit from being exposed to employers'
5 perceptions in order to realign their views on soft skills with those of the employers in the science
6 sector. This is not to say that expertise in employability is not appreciated in all potential cohorts of
7 students undergoing employability skills training, merely that it may be more relevant for some
8 cohorts.
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13 Again, this observation could be viewed through a lens of the importance of considering the prior
14 experiences of students undergoing employability skills training, and that 'catch all' programmes
15 may not be as effective as more bespoke provision.
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20 5. Strengths, Limitations and Implications for Future Work

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23 It was pleasing to note the similarities in the feedback from students from both Scotland and
24 Australia. This emphasised that a strength of the resources is the transferability to different
25 audiences with a limited amount of adjustment required. A limitation of this study was that the
26 sessions which were delivered to the Australian cohorts were chosen by the institution and students
27 were therefore not able to have access to the full range of activities which the Scottish cohort
28 engaged with. This limitation meant that it was not possible to address the interconnectivity with
29 the resources which were not delivered. Additionally, the delivery of the resources had to adhere to
30 the time slots which the Australian universities made available and this was sometimes not
31 optimum, meaning longer activities had to be curtailed. This could account for some of the
32 comments from students around wanting the sessions to be longer.
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40 The Scottish cohorts were all chemists, primarily in the final year of study on undergraduate
41 programmes and in the main in their early twenties. The profile of students in the Australian cohort
42 was much broader: a mix of undergraduate and postgraduate students; wide representation of all
43 age groups; broad mix of disciplines; greater proportion of international students; and a mix of
44 career experience with students who had never had a job through to students who had previously
45 successful careers and had returned to study. Our earlier work (Scott *et al*, 2019) had indicated that
46 being cognisant of prior experiences of students within the Scottish cohort was important to inform
47 future delivery of the resources. This was emphasised even more clearly from the feedback from the
48 more diverse Australian cohort and suggests that modules focused on employability skills provision
49 should be bespoke for their target audience, placing great emphasis on understanding prior
50 experiences, to ensure fair and equitable levelling up of employability skills across a cohort.
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Therefore, central/professional services, with employability remits, should liaise heavily with colleagues when employability skills provision is delivered to individual departments.

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For Peer Review Only

UK Student Career Guide	Graduate Careers Australia
Resilience	Adaptability
Leadership and Management	Time Management and Organisation
Dealing with conflict	
Good communication	Oral and written communication
Planning and Research skills	Creative problem solving, critical and analytical thinking, information gathering, evaluation and synthesis
Teamwork and interpersonal skills	Teamwork and interpersonal skills
	Initiative and enterprise
	Emotional intelligence

table 1: Specific skills which employers look for

Session		Details
1	Baseline Employability	An instructional interactive session on skills recognition using a case study to encourage students to think about whether they are suited to a job and whether the job is suitable for them, plus activities to assist students to identify their baseline skills.
2	CV Writing	Workshop providing information on what a CV is, what should be included and how to improve their CV. After an initial presentation, students evaluate a mock CV and then use the information learnt to improve their own CV.
3	Assessment Centres	An interactive session that includes example activities that are included in assessment centres.
4	Business Culture and Ethics	An instructional interactive session on business organisations and culture and professional integrity. Students participate in a number of activities to put this into practice.
5	Self-marketing	Instruction on a broad overview of marketing concepts and then a series of activities on using these skills to apply these to their personal profile.
6	Psychometric Assessments – Taking the Fear Out of Assessments	An interactive session on psychometric assessments, including both ability and personality assessments. Students then put this training into practice through completing a range of example questions.
7	Developing a Social Media Plan – Focusing on Graduate Job Searching	A review of social marketing opportunities that will also provide students with instruction in good practice when engaged with social media, before focusing on activities that explore the role of social media in finding jobs.
8	Crisis Management – Its Importance and Your Role	Instruction in crisis management and then activities to explore the decisions and actions which need to be followed.
9	Preparing for Interviews	Initial instruction in interview technique, then several generic interview questions that students can use to practise their interview technique in groups, participating as both interviewer and interviewee.

table 2: Summary of resources contained in the toolkit