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Focusing on the golden skills of effective communication and collaboration to further enhance graduate employability attributes

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Abstract: Based on a trilogy of related studies over the last decade, this longitudinal appraisal of graduate employability provides empirical evidence for higher education (HE) to focus on developing graduates with particular strengths in communications and collaborations to enhance graduate employability attributes. For the last decade, a dozen individual employability skills have been promoted by AdvanceHE (formerly the Higher Education Academy) and many HE Institutions (HEI) have since made significant progress in adapting their provisions and opportunities accordingly. This empirical study identifies common ground across that dozen and highlights communications and collaborations to be the next priority for graduate attribute focus. This research is part of a longer-term study of the evolution of graduate attributes to help finesse such provision so that it reflects the changing world that HEI students enter at the time that they graduate. The first study of the trilogy identified primary baseline empirical data to confirm a series of disciplinary variations in employability-related support across HE. The second complementary study highlighted that gendered inconsistencies in such provision were of an indirect nature and reflected variable provision across disciplinary subject areas. This third study establishes future priorities for HE based on four key findings. First, that gaps previously exposed, particularly for females have closed significantly. Second, that there are now clear preferences for employability-related activities to be further integrated into the curriculum. Third, that opportunities continue to exist in raising the visibility and awareness of employability-related support. Fourth, that the focus for future course developments should be on developing graduates with clear skills in communication and collaboration, the golden skills that help make the most of strengths in subject capability, community values and career aspirations.

Keywords: Graduate; Golden Skills; Attributes; Communication; Collaboration; Capability; Community; Career.

Word count: 4,071.

Introduction

There has been a focus on graduate attributes, skills, and employability for some years now and it remains a priority issue at the Office for Students (2024) for each HEI. As technology and working patterns evolve, it is essential that graduates reflect those changes and have the skills needed to tackle new opportunities and meet employer needs. The challenge for this study is how to enhance such opportunities and provision in HE and build upon the progress made over recent years.

Literature

Graduate employability often highlights the development of soft- and hard-skills (O'Leary, 2017 and 2021); the former covering 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 the latter includes qualifications and expertise, abilities to present arguments, analytical and problem solving skills, coping with complexity, working alone and teamwork. In a similar vein, emotional intelligence (El) is often raised as an alternative to IQ (intelligence quotient). Many contributors specify attributes such as critical thinking, behavioural capabilities, cultural awareness, and others such as communication, commerciality, achievement-driven, flexibility, customer focus, developing others, teamwork, problem solving, leadership, analytical thinking, organisation and relationship building. There is in essence no single recipe but a whole portfolio of potential ingredients that make up the most suitable amalgamation for an individual. Nevertheless, attributes once considered 'relatively soft' are key to ensuring that those attributes, considered in comparison to be 'relatively hard', have the chance to flourish.

The United Kingdom (UK) Engagement Survey (UKES), leading to its revision in 2016

To help enhance and optimise the student experience in UK HE, AdvanceHE (then the Higher Education Academy) piloted the UKES in 2013 and 2014, prior to its official launch in 2015 and its subsequent annual distribution since then. By 2016, a dozen key attributes or skills had become established in the UKES and these had been progressively grouped with skills' designations of Hard/Soft and Academic/Career/Active/Civic, as outlined in Table 1.

Skills item	2015 factor grouping	2016 factor grouping	
Writing clearly and effectively.			
Speaking clearly and effectively.		Academic skills	
Thinking critically and analytically.	Hard skills	Academic skins	
Analysing numerical and statistical information.	I Iai G SKIIIS		
Acquiring skills to help you get a job such as CV writing or career planning.		Career skills	
Becoming an independent learner.		Active learning skills	
Being innovative and creative.			
Working effectively with others.			
Developing or clarifying personal values or ethics.	Soft skills		
Understanding people of other backgrounds.	SOIL SKIIIS	Civic skills	
Exploring complex real-world problems.		CIVIC SKIIIS	
Being an informed and active citizen.			

Table 1: The 12 key skills identified by AdvanceHE (Neves, 2016).

These skills formed the foundation for the empirical research undertaken thoughout this longitudinal research, including the survey used in the current study. As outlined later, a new set of groupings are suggested as the priorities for further student experience enhancements.

First empirical study in this longitudinal series, published in 2017

The findings from the earlier foundational studies are outlined in Figures 1 and

The findings from the earlier foundational studies are outlined in Figures 1 and 2.

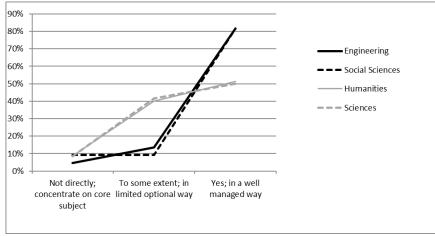


Figure 1: Illustration of variances in preferences for how employability-related support is offered across subject disciplines (O'Leary, 2017).

While the vast majority have a desire for employability-related support to exist in their degree courses, this research illustrated that UK students in some subject areas wanted to be able to choose how best to access such support, while others wanted it to be directly integrated into their course (O'Leary, 2017). Such findings were later confirmed in other studies (Quinlan & Renninger, 2022), and internationally ((Jackson & Bridgstock, 2021).

Second empirical study in this longitudinal series, published in 2021

This study addressed the gender impact of disciplinary variations in the delivery and experiences of employability-related support.

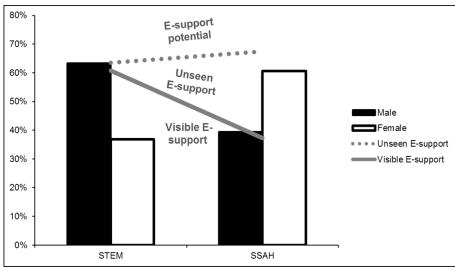


Figure 2: Illustration of how experiences of the delivery and visibility of employability-related support vary across disciplines and the greater impact this has on females (O'Leary, 2021).

Despite continued efforts to ensure that all subject areas remain attractive to all potential participants, persistent variations in gender preferences for certain subject areas continued to exist. Therefore, it is important to address any variations that exist in the delivery of employability-related support, as well as many other provisions and opportunities associated with higher education degree courses. This earlier study (O'Leary, 2021) identified variations, not in the delivery of employability-related support across subject areas, but in its perceived visibility, particularly in degree courses in the Social Sciences, Arts, and Humanities. Therefore, a greater impact on females existed as they predominate in these fields, with some such support remaining unseen and consequently not having its intended impact had it been made more obvious or prominent. This issue of the visibility of employabilty-related support was further explored and highlighted in later studies (Healy, Hammer & McIlveen, 2022) and internationally (Maina, Guàrdia Ortiz, Mancini & Martínez Melo, 2022).

Third empirical study in this longitudinal series, for dissemination in 2024-25

This third study complements its predecessors by revisiting the original foundations laid down a decade ago by AdvanceHE when it developed and launched the now well-established UKES undertaken annually across UK HE.

Recent developments in graduate employability research

In recent years, graduate employability research ranging from literature reviews to empirical studies, in regions across the world, and across the disciplinary spectrum (Scott & Willison, 2021; Mtawa, Fongwa & Wilson-Strydom, 2021; De Prada, Mareque & Pino-Juste, 2022; Bhati, Alyahya, Alshiha, Qureshi, Juhari & Aldossary, 2023; Tushar & Sooraksa, 2023) have assessed the continual evolution of this topic and identified key areas for future focus. These studies and this research add to that bank of knowledge and propose that the original dozen individual employabity skills set out by AdvanceHE can be incorporated into a handful of key areas; the 5C's of Communications, Collaborations, Capability, Community, and Career, as profiled in Table 2.

Evolution of skills to 2024		As reflected in the original specific skills items			
Communications	Abilities to communicate	Speaking clearly and effectively.			
Communications	effectively.	Writing clearly and effectively.			
Collaborations	Understanding and	Working effectively with others.			
Collabol ations	working with others.	Understanding people of other backgrounds.			
Capabilities	Capabilities in the subject	Thinking critically and analytically.			
Capabilities	discipline.	Becoming an independent learner.			
	A clear fit with societal	Developing or clarifying personal values or ethics.			
Community		Exploring complex real-world problems.			
	issues and priorities.	Being an informed and active citizen.			
	Career-specific skills and	Acquiring skills to help you get a job such as CV writing or career planning.			
Career	•	Being innovative and creative.			
	support.	Analysing numerical and statistical information.			

Table 2: The 5C's of the next phase in enhancing graduate employability.

Therefore, this study constructed its survey based upon the original dozen, but then viewed its outcomes through the lens of the 5C's.

The following sections outline the research methodology, findings, and conclusions arising.

Research Methodology

To complement those earlier studies, an online survey (JISC, 2023) was undertaken with students and graduates from multiple disciplines to address the issue of what the priority skillsets should now be. The survey received University Ethics Approval (ETH2324-0003) and was distributed to several hundred later-year students and graduates from across a variety of courses. An internal University Learning & Teaching Grant (LTE2022/23) allowed for the provision of small-value vouchers to incentivise participating students and graduates. The survey (see Appendix I) profiled the participant and explored how important they rated the twelve employabilty essentials outlined earlier, their preferences for the provision of employability-related support, and their awareness and experience of its visibility. Over one hundred surveys (116) were completed and subsequently analysed. Table 3 outlines the profiles of the respondents.

Survey Responses		
Overall	116	100%
By Subject field		
Social Sciences, Arts, and Humanities	82	71%
Business & Management courses 48		
Range of SSAH ¹ courses 34		
Health-related/STEM	34	29%
Health-related courses 16		
Range of STEM ² courses 18		
<u>By Gender</u>		
Self-identified as Female	70	60%
Self-identified as Male	42	36%
Self-identified as Non-Binary	4	3%
By Degree Status		
Graduate	43	37%
Undergraduate	73	63%
By Age Group		•
Over 25 years old	44	38%
Up to 25 years old	72	62%

¹ History, Education, Psychology, Arts, Law, Sociology

Table 3: The profiles of the survey respondents.

In terms of statistical significance at the 95% and 80% confidence levels, the size of the response pool generates a margin of error of ±9% and ±6% respectively, and this is accounted for in the analysis of the resuts generated. It is also worth noting that the profiles of the respondents shows an approximately two-thirds/one-third split in each of the categories oulined: SSAH versus Health-related/STEM courses; Self-identified as Female versus Male; Undergraduate versus Graduate; and Up to 25 years old and over 25 years old. While this does reasonably reflect the overall profile of the pool targeted, the limitations imposed by these weightings towards one side is also reflected in the significance afforded to the results presented. Differentiations by Gender are only possible in comparing Female to Male, as the size of the Non-Binary pool is too small for meaningful mathematical analysis. However, it is interesting to note that its population size of 3% is representative of the worldwide average (Statista, 2024). To generate percentages, the survey responses were analysed by attaching weightings to the answers given, as outlined in Appendix II.

Results and Discussion

The results from the survey are presented along three lines: Firstly, in terms of what the respondents believe are the most important employability-related skills that need to be focused on in higher education; secondly, how best such support can be provided; and thirdly, their experiences in terms of their awareness of, and the visibility of, such opportunities.

The importance of specific graduate attributes associated with employability

These overall results are presented in Table 4 and illustrated in Figure 3, demonstrating that the proposed 5C's of graduate skills and competencies that is based on the original dozen established by AdvanceHE, all continue to be considered highly important. Three of these (Communication; Colleaboration; and Capability) stand out as very highly important, while two (Community; and Career-specific) provide further highly important foundations. It is interesting to note that, taking subject knowledge and expertise (Capability) as an important pivot point, the abilities to effectively communicate that knowledge and expertise in spoken and written form (Communication) and the abilities to understand and work with others (Collaboration), are seen as absolutely essential abilities. To a lesser extent, though still highly important, come skills linked with connecting with local and broader society (Community) and particular sets of abilities that address certain roles (Career-specific).

² Sciences, Technology, Engineering, Mathematics

Importance of specific Graduate Attributes											
Commu	All Responses Communication Collaboration Capability Community					Car	Career-specific				
86			3%)%	71%		70%		inc	
90%	81%	85%	81%	83%	76%	76%	72%	66%	77%	70%	63%
									5		
akir	Writing	Μ	People	Thinking	nde	Values	wor	Citizen		ati	era
Speaking	≥	Teamwork	Ь	Ξ	Independent	>	Real-world	S		Innovative	Numeracy
		Ĕ			Inde		æ			<u>_</u>	Z
	·				By Subj	ect field					
			Sc	cial Scie	nces, Ar	ts, and F	lumaniti	es			
89	1%	84	1%	80)%		73%			71%	
93%	85%	86%	81%	83%	77%	78%	73%	68%	80%	70%	61%
				He	ealth-rela	ated/STE					
78	3%	82	2%	79	9%		67%			69%	
84%	72%	83%	81%	83%	75%	73%	67%	62%	69%	71%	67%
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87	•		5%	_	2%		74%			72%	
91%	82%	88%	82%	85%	79%	80%	73%	70%	77%	73%	66%
0.4	0/	0.0	20/		f-identifi	ed as M				670/	
84	, -)%		5%	740/	68%	620/	700/	67%	F70/
89%	80%	80%	80%	79%	74%	71%	70%	62%	78%	65%	57%
					By Degre Grad		s				
87	1%	70	9%	80)%	uate	74%			69%	
88%	85%	79%	79%	81%	79%	81%	74%	68%	70%	72%	65%
3070	0370	7570	7570	01/0	Underg		7470	0070	7070	72/0	0370
85	3%	86	5%	80)%		70%			71%	
91%	79%	89%	83%	84%	75%	73%	70%	65%	81%	69%	62%
By Age Group											
Over 25 years old											
86	5%	84	1%	82%			73%			71%	
89%	83%	84%	83%	86%	79%	77%	70%	72%	75%	69%	68%
Up to 25 years old											
86	5%	83	3%	78	3%		70%			70%	
91%	81%	86%	80%	81%	75%	76%	72%	63%	78%	71%	60%

Table 4: Levels of importance associated with the various employability skills outlined in the survey.

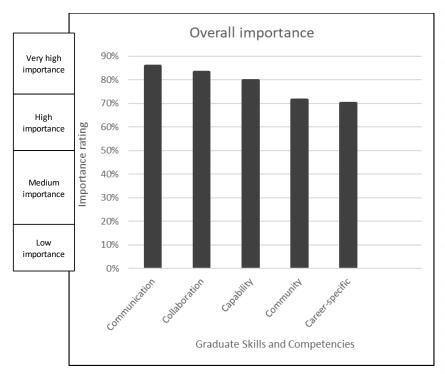


Figure 3: Illustration of the levels of importance associated with the 5C's of employability-related skills; communications, collaborations, capabilities, community, and career-specific.

Variations across sub-groups

Across the sub-groups (by subject, gender, status and age group), the most notable variation in terms of the graduate skills and competencies considered most important is that those from Social Sciences, Arts and Humanities particularly value Communication skills (speaking and writing), while those in Health-related and STEM courses emphasise Collaboration skills (teamwork and people), although note that each still considers the other very highly important. However, this can only be stated with 80% confidence due to sample sizes and there are no other statistically significant variations by gender, degree status, or age group. The overall 5C's profile holds true across each sub-group.

Views on preferred delivery mode, awareness of delivery, and perceived visibilities

These are presented in Table 5 and Figures 4, 5 and 6. Table 5 outlines the prefered delivery mode for employability-related support on an overall basis and across the sub-groups of subject, gender, status and age group.

Overall responses								
Preferred delivery mode	Preferred delivery mode Current awareness		ness	Current visibility				
More integrated with curriculum	58%	Good to excellent	75%	Good to excellent	76%			
Blend of curriculum and options	32%	Some	5%	Some	5%			
More through optional choices	10%	Quite limited	20%	Quite limited	19%			
SSA	H compa	red to Health-relate	ed/STEM					
Social So	iences, A	rts, and Humanities (S	SAH) cou	rses				
More integrated with curriculum	60%	Good to excellent	79%	Good to excellent	72%			
Blend of curriculum and options	32%	Some	4%	Some	7%			
More through optional choices	9%	Quite limited	17%	Quite limited	21%			
	Health-	related and STEM cour	rses					
More integrated with curriculum	55%	Good to excellent	65%	Good to excellent	85%			
Blend of curriculum and options	33%	Some	9%	Some	0%			
More through optional choices	12%	Quite limited	26%	Quite limited	15%			
		Gender						
	Self	f-identified as Female						
More integrated with curriculum	54%	Good to excellent	70%	Good to excellent	79%			
Blend of curriculum and options	39%	Some	9%	Some	9%			
More through optional choices	7%	Quite limited	21%	Quite limited	13%			
	Se	lf-identified as Male						
More integrated with curriculum	69%	Good to excellent	88%	Good to excellent	74%			
Blend of curriculum and options	17%	Some	0%	Some	0%			
More through optional choices	14%	Quite limited	12%	Quite limited	26%			
		Degree Status						
		Graduate						
More integrated with curriculum	57%	Good to excellent	70%	Good to excellent	88%			
Blend of curriculum and options	29%	Some	9%	Some	2%			
More through optional choices	14%	Quite limited	21%	Quite limited	9%			
		Undergraduate						
More integrated with curriculum	59%	Good to excellent	78%	Good to excellent	68%			
Blend of curriculum and options	34%	Some	3%	Some	7%			
More through optional choices	7%	Quite limited	19%	Quite limited	25%			
Age Groups								
Over 25 years old								
More integrated with curriculum	60%	Good to excellent	61%	Good to excellent	82%			
Blend of curriculum and options	28%	Some	14%	Some	2%			
More through optional choices	12%	Quite limited	25%	Quite limited	16%			
Up to 25 years old								
More integrated with curriculum	57%	Good to excellent	83%	Good to excellent	72%			
Blend of curriculum and options	35%	Some	0%	Some	7%			
More through optional choices	8%	Quite limited	17%	Quite limited	21%			

Table 5: Results on preferred delivery mode, awareness and visibility.

Highlights and variations in terms of the preferred delivery mode, awareness of the support, and its visibility are described in the following sections.

The preferred delivery mode for employability-related support

As illustrated in Figure 4, there is a clear and statistically significant demand for employability-related support to be more integrated into degree courses. Within a group of ten students/graduates, six would want that fuller integration, three would like it to be more of blend of integrated and optional choices, and one prefers it to be separate from the course itself. It is interesting to note that this corresponds very closely to the data from a decade ago (O'Leary, 2017), as illustrated in Figure 1. However, one notable change is that there are now no significant variations by subject area and the overall picture is consistent across the disciplinary fields.

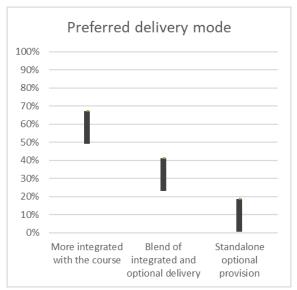


Figure 4: The preferred delivery mode for employability-related support.

Variations across sub-groups: The only statistically significant difference in delivery mode preference is found by gender. Both males and females still prefer more integration with the course generally, but males even moreso than females, the latter seeing benefits in blended optional approaches as well.

The awareness of employability-related support being delivered

Figure 6 illustrates the level of awareness of the delivery of employability-related support and it is clear that awareness is very high overall, so the concerted efforts across HE over the last decade are bearing fruit. However, there is still work to do as one in five is still not cognisant that employability-related support is around.



Figure 5: The level of awareness of the delivery of employability-related support.

Variations across sub-groups: Awareness is high overall in all the sub-groups (by subject, gender, degree status, and age group), but particularly high in the social sciences, arts and humanities, with males, and for the younger age groups.

The visibility of the employability-related support being delivered

Figure 7 illustrates assessments of the visibility of the delivery of employability-related support and the visibility overall is very high. However, as with awareness, there are still opportunities and one in five still feels that it is practically invisible.

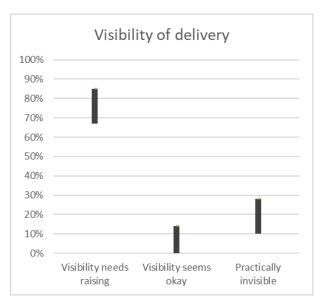


Figure 6: The visibility of the delivery of employability-related support.

Variations across sub-groups: Visibility is good to excellent overall in all the sub-groups (by subject, gender, degree status, and age group), but particularly in health-related and STEM, with graduates, and in older age groups, the latter factors perhaps reflecting the experiences of longer periods in the workforce. This is a notable improvement in social sciences, arts and humanities who have in the past (O'Leary, 2021) had visibility gaps in their provision, but those have now closed. Therefore, the employability-related support efforts across HE are making an impact. Note note though that there is a low but statistically significantly difference by gender, with more males than females feeling that the visibility of employability-related support is limited; this maybe highlights a potential target area.

Conclusions

While capability in a subject disciplinary field can be taken as a fundamental foundation for HE students and graduates, the ability to be an effective communicator (oral and written) and collaborator (team player and understander of people) are critical and become increasingly important as time goes by. Integrating such activities into course delivery is paramount and describing such skills as 'golden' (O'Leary, Ward & Jackson, 2024) is preferable to 'soft' as it better reflects their importance in complementing and catalysing subject knowledge and expertise).

It is clear that there have been successes over recent years across HE in establishing employability-related support and many identified gaps in provision have now been filled. Nevertheless, small gaps continue to exist and there are still opportunities to ensure that the awareness of, and visibility of, such important matters is raised.

Future research

The next phase of the research is to embellish the quantitative empirical data by incorporating a series of qualitative reflections and views from experienced HE staff on the potential implications of this work. It is expected that this would then form a submission to a suitable academic journal.

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Appendices

Appendix I: Survey on employability-related support in degree courses

Introduction

You are being invited to complete an online survey as part of research being undertaken by an academic in the Graduate College at this University. Please read the following before deciding whether to take part. You are eligible if you are aged 18 or over, and a student or graduate of this University.

The Study: The purpose of the study is to explore potential enhancements to student/graduate employability support.

What does taking part involve? If you agree to take part, you will be asked to complete this online survey/questionnaire. This survey/questionnaire will ask about your views and experiences of employability-related support during your degree and it may take you approximately 20-30 minutes to complete.

Do I have to take part? No, it is up to you and you are free to withdraw from the study at any time and without reason. If you choose not to take part, you do not need to do anything further.

Are there any benefits or risks for me if I take part? You may not directly benefit from this research. However, we hope that your participation may broaden your horizons and help others. There are no expected risks for participants. Any data that you provide will be treated as confidential and the questionnaire is anonymous. All data from the study will be stored securely on my university One Drive cloud storage system which only I have access to and any identifying factors will be deleted.

What will happen to the findings of this study? The findings will be used to prepare reports and publications that will hopefully enhance the topic.

Has this study received ethical approval? Yes, this study has been approved through the University's Ethical Approval process, with approval code ETH2324-0003.

If you would like to receive more information and for any other queries about this project you can contact me by email: email.address@provided.ac.uk - if you do not wish to participate, just close your browser.

If you are interested in taking part, please read the statements below and then click 'Yes' to record your consent to participate:

- I confirm that I have read the study information.
- I have had the opportunity to consider the information and ask questions.
- Any questions have been answered satisfactorily.
- I understand that my participation is voluntary, and I am free to withdraw from the study at any time without giving a reason.
- I am 18 or over.

Yes

Respondent Demographics

- 1. What is/was your subject field at CCCU? Options are
 - History-related subject
 - Business-related subject
 - Computing-related subject
 - Other subject area (please specify)
- 2. Are you an existing Undergraduate or Graduate? Options are
 - Undergraduate / Graduate
- 3. What is your Gender? Options are
 - Female / Male / Other (please specify)
- 4. What is your age-group? Options are
 - Up to 25 years / 26 to 35 years / Over 35 years

Respondent Views

- 5. Advance HE (formerly the Higher Education Academy) has identified the following 12 employability essentials (skills; competencies; capabilities) for Higher Education students/graduates. How important do you feel that each of these are? Options provided:
 - Highly important / Moderately important / Low importance / Not important

Writing clearly.

Speaking clearly.

Thinking critically/analytically.

Analysing numeric information.

Being an independent learner.

Being innovative/creative.

Working effectively with others.

Developing personal values or ethics.

Understanding people (religion/ethnicity/gender/economic/politics/social/etc).

Exploring real-world issues.

Being an informed and active citizen.

Direct skills, such as CV writing and career planning.

- 6. Employability-related support is often delivered within the curriculum and/or as add-on activities. How would you like to see such support provided in your subject area? Options:
 - Fully integrated into the delivered curriculum / More integrated into the curriculum / As a blend of curricular and extra-curricular / More as extra-curricular activities / Only as add-on activities and resources
- 7. Recent research has indicated that many of the essentials outlined above are delivered within the curriculum but that it is not made obvious enough when this is so. What is/was your experience? Options:
 - a. I am or was aware that employability-support is/was delivered in my curriculum?
 - For sure / To some extent / Unsure / Not so much / No
 - b. It could though be made more obvious when and where this occurs?
 - For sure / To some extent / Unsure / Not so much / No

Appendix II: Analysing the survey reponses.

The responses were collated into a spreadsheet and analysed by weighting the responses given to calculate percentages by allowing for the number of responses made to each question. For 95% confidence in the results, only differences that exceed the sample size (116) margin of error of $\pm 9\%$ are noted as statistically significant.

Importance ratings for the various employability-related skills outlined

Survey responses were converted into percentages by weighting the choices available, as follows:

Highly important 10
Moderately important 5
Low importance 2
Not important 0

Views on delivery preferences

Survey responses were converted into percentages by weighting the choices available, as follows:

Fully integrated into the delivered curriculum
More integrated into the curriculum
As a blend of curricular and extra-curricular
More as extra-curricular activities
Only as add-on activities and resources

The final comparisons were made between the Uppers (Fully integrated into the delivered curriculum & More integrated into the curriculum), the Middle (As a blend of curricular and extra-curricular), and the Lowers (More as extra-curricular activities & Only as add-on activities and resources).

Experiences in terms of awareness and visibility

Survey responses were converted into percentages by weighting the choices available, as follows:

•	For sure	5
•	To some extent	4
•	Unsure	3
•	Not so much	2
•	No	I

The final comparisons were made between the Uppers (For sure & To some extent), the Middle (Unsure), and the Lowers (Not so much & No).