



Australian Government



Office for
Learning & Teaching

Enacting strategies for graduate employability: How universities can best support students to develop generic skills

**Final Report 2016
Appendices (Part B)**

Curtin University

The University of Sydney
The University of Melbourne
Flinders University
Australian Council for Educational Research

Project Leader
Dawn Bennett
Curtin University

<http://graduateemployability.curtin.edu.au/>



Support for the production of this report has been provided by the Australian Government Office for Learning and Teaching. The views expressed in this report do not necessarily reflect the views of the Australian Government Office for Learning and Teaching.



With the exception of the Commonwealth Coat of Arms, and where otherwise noted, all material presented in this document is provided under Creative Commons Attribution-ShareAlike 4.0 International License <http://creativecommons.org/licenses/by-sa/4.0/>.

The details of the relevant licence conditions are available on the Creative Commons website (accessible using the links provided) as is the full legal code for the Creative Commons Attribution-ShareAlike 4.0 International License <http://creativecommons.org/licenses/by-sa/4.0/legalcode>.

Requests and inquiries concerning these rights should be addressed to:

Office for Learning and Teaching
Department of Education and Training
GPO Box 9880
Location code N255EL10
Sydney NSW 2001

[<learningandteaching@education.gov.au>](mailto:learningandteaching@education.gov.au)

2016

ISBN 978-1-76028-562-3 PRINT

ISBN 978-1-76028-563-0 PDF

ISBN 978-1-76028-564-7 DOCX

Cite as: Bennett, D., Richardson, S., and MacKinnon, P., (2016). *Enacting strategies for graduate employability: How universities can best support students to develop generic skill Part B Appendices*. Canberra, ACT: Australian Government, Office for Learning and Teaching, Department of Education and Training (<http://www.olt.gov.au/project-how-universities-can-best-support-students-develop-generic-skills-enacting-strategies-gradua>)

Table of Contents

Table of Figures.....	iii
Appendix A - Student survey instrument.....	1
Appendix B - Case study instruments	14
Appendix C - Case study sample	32
Appendix D - Interventions that enhance student and graduate employability.....	33
Appendix E - Case study vignettes	36
Appendix F - Project activities.....	47
Appendix G - Industry snapshots	50
Appendix H - External evaluation	73
Background	73
Outcomes.....	73
Evidence	74
Project Management	74
Achievement of Outcomes	75
Summary.....	76
Appendix I – Achievements Statement	77
Appendix J - Deputy Vice-Chancellor Certification	78

Table of Figures

<i>Figure 7: Sectors employing communication and media graduates, AGS, 2013 (n=3,192)</i>	<i>51</i>
<i>Figure 8 Historical/projected ABS Labour (1,000s) from http://joboutlook.gov.au</i>	<i>52</i>
<i>Figure 9: Sectors employing performing arts graduates, AGS, 2013 (n=1,064)</i>	<i>57</i>
<i>Figure 10 Employment outcomes, Graduate Destinations Survey 2013 (per cent).....</i>	<i>59</i>
<i>Figure 11 The intersections of work across the creative trident (Bennett et al., p. 164).....</i>	<i>60</i>
<i>Figure 12: Sectors employing internet technology graduates, AGS, 2013 (n=3,222).....</i>	<i>66</i>
<i>Figure 13: Sectors employing biological sciences graduates, AGS, 2013 (n=2,368).....</i>	<i>69</i>

Appendix A - Student survey instrument

Clarification

It is important to note that this survey was delivered online using a dynamic delivery in which students were presented sets of items based on their responses to prior items. Thus, while the survey instrument appears long, no students were presented with all items.

Introductory text

Research background

This collaborative project responds to growing social and economic demands for graduates who can negotiate rapidly transforming employment contexts. We are seeking comprehensive and accurate responses, which will be treated with respect and confidentiality.

What does participation involve?

Participation is voluntary, and participants may freely withdraw from the study at any time without prejudice or negative consequences. Participation will comprise completion of a questionnaire that will take approximately 20 minutes.

Confidentiality

Your written responses are confidential: only the research project team will have access to these. This means that responses cannot be traced back to you in any documentation emerging from this research. Research documents will be secured in a locked cabinet, and computer data will be secured through the use of passwords in institutional IT systems. Lecturers and tutors will not have access to the responses of students.

Publication of results

The results may be drawn upon for academic papers and conference presentations. Individual information will not be included or identifiable in any way.

Queries

Please direct general queries about this study to Dr Sarah Richardson (esage@acer.edu.au) or Professor Dawn Bennett at dawn.bennett@curtin.edu.au

Ethics Committee Approval

This study has been approved by the Curtin University Human Research Ethics Committee, no. HURGS_02_14. If needed, verification of approval can be obtained either by writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University, GPO Box U1987, Perth, 6845 or by telephoning 9266 2784.

There are 53 questions in this survey

Introduction

1 [INTRO2]

I have been informed of and understand the purpose of the study.

I have been given the opportunity to ask questions about the study and my participation.

I understand that I can withdraw my participation at any time without prejudice or negative consequences.

I understand that results will be published in the form of a report, academic papers and presentations. No information that might identify me will be used in published material.

Based upon the above information, please indicate your consent to participate in the study by completing the statement of consent below:

I agree to participate in this study, titled: *Strategies Enhancing Graduate Employability (SAGE)* *

Please choose **only one** of the following:

- Yes
- No

2 [INTRO3]

Unfortunately you cannot participate in this survey unless you agree to accept the ethics statement.

If you wish to change your mind, select 'yes' above

Otherwise, select 'next' to exit

About my institution (university or TAFE)

3 [UNI1]

I am attending ... institution

? (What is the name of your university or TAFE?)

About my previous education

4 [PAST1]

I completed the previous education before starting my current course:

Please choose **all** that apply:

- High School
- TAFE
- University
- Other

? Select as many as relevant

5 [PAST2]

I finished high school in ...

? (which year?)

6 [PAST3]

I completed ... at high school

? e.g. VCE, International Baccalaureate, A Levels

7 [PAST4]

I finished TAFE in ...

? (Which year?)

8 [PAST5]

I studied ... at TAFE

? (e.g. certificate, diploma, ...)

9 [PAST6]

I finished my university course in ...

? (Which year?)

10 [PAST7]

I studied ... at university

? (e.g. bachelor degree in biology)

11 [PAST7]

I completed my course at the same university

Please choose **only one** of the following:

- Yes
- No

12 [PAST8]

I completed the following kind of education ...

13 [PAST9]

I completed my previous education in ...

? (Which year?)

14 [PAST10]

I completed my previous education at ...

? (Which institution?)

About my work experience

15 [WORK1]

I have the following work experience

- None
- Part-time work
- Full-time work

16 [WORK2]

I did this work between ...

? (Start year and end year)

17 [WORK3]

I did the following type of work ...

? (Give a short description)

18 [WORK4]

On average, I worked this many hours per week ...

About me

19 [ME1]

My gender is ...

- Female
- Male
- Transgender

20 [ME2]

I am ... years old

21 [ME3]

I am ...

- Aboriginal or Torres Strait Islander
- Non-Indigenous

22 [ME4]

My nationality is ...

- Australian
- Another nationality

23 [ME5]

My nationality is ...

24 [ME6]

My first language is ...

- English
- Another language

25 [ME7]

My first language is ...

About my parents

26 [PARENT1]

The highest level of education my parents have is ...

- Mother, father or both parents has a postgraduate qualification (Masters or PhD)
- Mother, father or both parents has a Bachelor degree
- Mother, father or both parents has a TAFE qualification
- Mother, father or both parents has completed high school
- Neither parents have completed high school
- I do not know

About me as a student

27 [STU1]

My degree programme is ...

?(e.g. bachelor of science)

28 [STU2]

My major or intended major is ...

? (e.g. chemistry)

29 [STU3]

I choose this major because ...

- I had a high enough ATAR score to be accepted
- I liked this discipline at school
- I think it will lead to an interesting career
- I want to have a high income in the future
- Other

? (Mark all that are relevant)

30 [STU6]

If 'other', please specify

31 [STU4]

I am currently in the ... year of my degree

- First
- Second
- Third
- Fourth
- Fifth
- Sixth

? (Which year?)

32 [STU5]

I am studying ...

- Full time
- Part-time

33 [STU6]

I expect to do further study after I finish my current degree

- Yes
- No

About me in the future (1)

34 [FUT1]

Three to five years after graduation I HOPE to be doing

? (eg working as a ..., studying for a PhD, ...)

35 [FUT2]

I think that employers look for the following things in graduates ...

? (List as many things as you can think of)

36 [FUT3]

A professional in my major's study area has the following characteristics ...

- 1
- 2
- 3

- 4
- 5
- 6

? (List at least three characteristics)

37 [FUT5]

I see the following differences between me as a person and these professional characteristics (the ones you listed above)

- 1
- 2
- 3
- 4
- 5
- Other

? (List as many as you can think of)

38 [FUT6]

The strategies I plan to use to develop these characteristics are ...

39 [FUT7]

The timeframe for these strategies is

? (e.g. in the next six months)

40 [FUT4]

I used the following information sources to come up with the characteristics of a professional in my major's study area

- My parents
- My family
- My friends
- My school
- Teaching staff at my university or TAFE
- Internet
- Other

? (Choose all that are relevant)

41 [FUT14]

If 'other', please specify

About me in the future (2)

42 [FUT12]

Three to five years after graduation I EXPECT to be doing the following ...

? (Give a description of what you expect your life to be like)

43 [FUT8]

What I learn in my degree will prepare me for my future work and career in the following ways

- 1
- 2
- 3
- 4
- 5
- Other

? (List as many as you can think of)

44 [FUT11]

[This item replicates one in the AUSSE instrument and was shared with the research team by the Australian Council for Educational Research]

In my experience at this institution in the current academic year, I have talked about my career plans with teaching staff or advisors ...

- Never
- Sometimes
- Often
- Very often

45 [FUT9]

In 15 years time I EXPECT to be doing the following ...

? (Give a short description of what you expect your life to be like)

Professional identity

The items in this section were developed by Adams, Hean, Sturgis and Clark (2006) for use with higher education students.

46 [IDENT1] I have a clear idea of what I am studying to become (i.e. the professional role I am likely to have in the future)

- Yes
- No

47 [IDENT2]

Thinking about this professional role – referred to here as ‘this profession’ – please indicate how much you agree with the following statements

Please choose the appropriate response for each item:

- Strongly disagree
- Disagree
- Not sure
- Agree
- Strongly agree

— I feel I have strong ties with members of this profession

— I feel like I am a member of this profession

— I am often ashamed to admit that I am studying for this profession

— I find myself making excuses for belonging to this profession

— I try to hide that I am studying to be part of this profession

— I am pleased to belong to this profession

— I can identify positively with members of this profession

— Being a member of this profession is important to me

— I feel I share characteristics with other members of the profession

48 [IDENT3]

Thinking about graduates who have done the same degree as you please indicate how much you agree with the following statements

Please choose the appropriate response for each item:

- Strongly disagree
- Disagree
- Not sure
- Agree
- Strongly agree

- I feel I have strong ties with those who have done the same degree as me
- I feel like I am a member of a community of those who have done the same degree as me
- I am often ashamed to admit that I am doing this degree
- I find myself making excuses for doing this degree
- I try to hide that I am doing this degree
- I am pleased to belong to the group of people who have done the same degree as me
- I can identify positively with others who have done the same degree as me
- Being a member of the group of graduates who have done the same degree is important to me
- I feel I share characteristics with others who have done the same degree as me

Managing career and work life

The items in this section were kindly shared with the research team by the Ithaca Group (nd). They were developed as a self-assessment questionnaire for the Core Skills for Work Framework but have not been published.

49 [MANAGE1]

When I think about identifying career and work options, I ...

- Could use some advice to see where my interests and experience fit into the world of work
- Can see some work options that suit me, but would benefit from some further advice
- Draw on my personal skills and interests and familiar processes to develop my career and address barriers and skill gaps where I can
- Balance my circumstances, experience, skills, goals and options with the complexities of the world of work, seeking trusted advice if required
- Manage the ongoing complexities of long term career development through personal reflection and response to actual and potential changes

? Select all that are relevant

50 [MANAGE2]

When it comes to finding work I ...

- Can see what's required for some jobs, but need some help with how to apply for work

- Can find and apply for suitable job opportunities using a few familiar job-finding and application techniques
- Am comfortable with finding job vacancies and can present my skills and experience in relation to job requirements
- Have developed broad job seeking skills and use contacts and networks to advance my career
- Successfully rely on my experience, reputation and established networks to identify opportunities where my interests and skill set are a strong match with the potential role

? Select all that are relevant

51 [MANAGE3]

In order to develop the relevant skills and knowledge required for my work and career, I...

- Participate in training for my role when it is offered but am not always confident in asking for help
- Take steps to develop skills and qualifications for my role and sometimes ask for feedback on my work
- Use both formal and informal learning to develop my skills and knowledge for my role and am starting to recognise the importance of on-going learning
- Regularly use feedback and self-reflection to improve my performance and set my own learning challenges in order to develop my career path
- Continually reflect on my performance and seek and use feedback as an integral part of my work, and I have innovative ways of managing my own learning and contributing to the learning of others

? Select all that are relevant

Conclusion

52 [FUT13]

Finally, I would like to give the following feedback on my current degree and how it is helping me prepare for my future work and career ...

53 [FUT15]

Thank you very much for taking the time to respond to these questions.

Thank you for your participation.

Thank you for completing this survey.

References

Adams, K., Hean, S., Sturgis, P. and Clark, J. M. (2006). Investigating the factors influencing professional identity of first-year health and social care students, *Learning in Health and Social Care*, 5: 55–68.

Australian Council for Educational Research (2012). *Australasian Survey of Student Engagement*. Camberwell: Australian Council for Educational Research.

Ithaca Group (n.d.). Unpublished resource content developed by Ithaca Group and funded by the Commonwealth Government.

Appendix B - Case study instruments

Student case study questions

Female Male Undisclosed

1. Icebreaker: Thanks for coming along. Can you tell me what you're studying, how far through the course you are, and when you hope to complete?

Major: _____ Year: _____ Full/part-time: _____ Finish year: _____

2. To what extent do you feel that your course will prepare you for work and employment? (*Open question*)
3. Do your expectations align with the information which (*institution*) gave you before you started your course?
Y N (If not, what are the differences?)
4. When you finish your degree, will you be able to commence your chosen career? Y N
5. If no, what strategies will you use to improve your employability?
6. When will you make the decision to adopt these activities?
7. What will you gain from them?
8. What do you expect your working life to look like when you graduate? (*What do you expect to be doing; how do you know?*)
9. When you apply for work as a graduate, what do you think employers/clients will be looking for? (*What would prompt someone to choose you?*)

10. Which of these aspects do you not yet have?
11. What are your strategies for developing them?
12. What evidence of employability do you think employers look for among graduates in your discipline, and do you have some ideas about how to develop this evidence?
13. Can you tell me about the opportunities for work experience or developing employability within your course?
14. Other than your degree, what things have you done to enhance your employability? (e.g. other study, informal learning, work experience)
15. Coming back to the first question, which was about what employers look for, could you rate these competences in order of the importance an employer would place on each?
16. How would you rate yourself against each of these?

Ratings for question 15

Competence	Examples	Not important	Somewhat important	Important	Very important
Intellectual curiosity	Seek and use feedback Open to new and diverse people and ideas Possess a certain amount of social intelligence	1	2	3	4
Strategic insight	Insightful, see things from new angles Demonstrate strategic thinking Display broad insight into the organization's business and one's own role in its goals Possess a "helicopter view" (multidisciplinary) Intelligent (possess certain analytical capacities) Reflect critically on practices and procedures	1	2	3	4
Decision making	Decisive Able to make decisions rapidly Assertive	1	2	3	4
Problem solving	Able to solve problems well and quickly Possess problem-solving skills Able to cope with complexity	1	2	3	4
Willingness to learn	Open to learning Chase after variety, challenges, and intellectual stimulation Seek out opportunities to learn Eager to learn about self, others, and ideas	1	2	3	4

Competence	Examples	Not important	Somewhat important	Important	Very important
	Display self-management to foster learning and high performance Enjoy complex problems and challenges with new experiences				
Emotional intelligence	Able to deal with stress and ambiguity Demonstrate independence Demonstrate emotional intelligence Self-confident Self-aware of strengths and weaknesses	1	2	3	4
Adaptability	Feel comfortable with turbulent change Not be afraid to take risks Show adaptability Demonstrate flexibility Change-oriented Proactive Display personal flexibility and mobility	1	2	3	4
Self-promotion/ Promotion	Enhance visibility (ensure work is noticed by significant others) Communicate strategically Build up professional credibility (get results noticed) Demonstrate influence skills Know how to “sell” ideas	1	2	3	4

Competence	Examples	Not important	Somewhat important	Important	Very important
	Have cogency (be able to present strong arguments) Generate an impact Use, and not abuse, power Convey a vision, inspire, be charismatic				
Perseverance	Display high levels of energy Show drive and perseverance Persevere under adverse conditions	1	2	3	4
Dedication	Do more than just “carry out a job” Demonstrate high dedication to the work Demonstrate intrinsic motivation (i.e., for the work in itself) Passionate Committed to making a difference Assume responsibility/accountability Have an internal locus of control (control over events to oneself) Display ambition, want to grow Take initiative	1	2	3	4
Motivated to lead	Show commitment Be credible (honest and ethical) Manage self and others Manage own work and learning	1	2	3	4

Competence	Examples	Not important	Somewhat important	Important	Very important
	Motivate others Delegate decision-making to those best-suited (empowerment) Direct others Build high-performing teams Display leadership ability Actively look for opportunities to lead Set clear objectives				
Results oriented	Seize opportunities when they present themselves Quality-driven Demonstrate need for achievement (performance-oriented) Competitive Consistently deliver tangible, measurable results above expectations Demonstrate a drive for results	1	2	3	4
Stakeholder sensitivity and communication	Have a focus on the customer and the market Have good interpersonal skills Build long-term relationships with clients Possess networking skills (to build organizational relationships) Adapt communication style and content to an audience	1	2	3	4

Competence	Examples	Not important	Somewhat important	Important	Very important
Technical skills and knowledge in or related to the discipline	<p>Apply comprehensive theory-based understanding to complex problems and broader aspects of practice</p> <p>High level of current technical expertise relevant to work areas</p> <p>In-depth knowledge and skills in at least one specialist domain</p> <p>Aware of the structure and characteristics of work</p> <p>Aware of the social, cultural, environmental, commercial, legal and political contexts of work</p> <p>Aware of the codes of practice, legislative and statutory requirements and health and safety responsibilities of work</p> <p>Employ ICT to communicate and perform key work functions</p>	1	2	3	4

Ratings for Q16

Competence	Examples	Not at all	Somewhat	Largely	Completely
Intellectual curiosity	Seek and use feedback Open to new and diverse people and ideas Possess a certain amount of social intelligence	1	2	3	4
Strategic insight	Insightful, see things from new angles Demonstrate strategic thinking Display broad insight into the organization's business and one's own role in its goals Possess a "helicopter view" (multidisciplinary) Intelligent (possess certain analytical capacities) Reflect critically on practices and procedures	1	2	3	4
Decision making	Decisive Able to make decisions rapidly Assertive	1	2	3	4
Problem solving	Able to solve problems well and quickly Possess problem-solving skills Able to cope with complexity	1	2	3	4
Willingness to learn	Open to learning Chase after variety, challenges, and intellectual stimulation Seek out opportunities to learn Eager to learn about self, others, and ideas	1	2	3	4

Competence	Examples	Not at all	Somewhat	Largely	Completely
	Display self-management to foster learning and high performance Enjoy complex problems and challenges with new experiences				
Emotional intelligence	Able to deal with stress and ambiguity Demonstrate independence Demonstrate emotional intelligence Self-confident Self-aware of strengths and weaknesses	1	2	3	4
Adaptability	Feel comfortable with turbulent change Not be afraid to take risks Show adaptability Demonstrate flexibility Change-oriented Proactive Display personal flexibility and mobility	1	2	3	4
Self-promotion/ Promotion	Enhance visibility (ensure work is noticed by significant others) Communicate strategically Build up professional credibility (get results noticed) Demonstrate influence skills Know how to “sell” ideas Have cogency (be able to present strong arguments) Generate an impact	1	2	3	4

Competence	Examples	Not at all	Somewhat	Largely	Completely
	Use, and not abuse, power Convey a vision, inspire, be charismatic				
Perseverance	Display high levels of energy Show drive and perseverance Persevere under adverse conditions	1	2	3	4
Dedication	Do more than just “carry out a job” Demonstrate high dedication to the work Demonstrate intrinsic motivation (i.e., for the work in itself) Passionate Committed to making a difference Assume responsibility/accountability Have an internal locus of control (control over events to oneself) Display ambition, want to grow Take initiative	1	2	3	4

Competence	Examples	Not at all	Somewhat	Largely	Completely
Motivated to lead	Show commitment Be credible (honest and ethical) Manage self and others Manage own work and learning Motivate others Delegate decision-making to those best-suited (empowerment) Direct others Build high-performing teams Display leadership ability Actively look for opportunities to lead Set clear objectives	1	2	3	4
Results oriented	Seize opportunities when they present themselves Quality-driven Demonstrate need for achievement (performance-oriented) Competitive Consistently deliver tangible, measurable results above expectations Demonstrate a drive for results	1	2	3	4

Competence	Examples	Not at all	Somewhat	Largely	Completely
Stakeholder sensitivity and communication	<p>Have a focus on the customer and the market</p> <p>Have good interpersonal skills</p> <p>Build long-term relationships with clients</p> <p>Possess networking skills (to build organizational relationships)</p> <p>Adapt communication style and content to an audience</p>	1	2	3	4
Technical skills and knowledge in or related to the discipline	<p>Apply comprehensive theory-based understanding to complex problems and broader aspects of practice</p> <p>High level of current technical expertise relevant to work areas</p> <p>In-depth knowledge and skills in at least one specialist domain</p> <p>Aware of the structure and characteristics of work</p> <p>Aware of the social, cultural, environmental, commercial, legal and political contexts of work</p> <p>Aware of the codes of practice, legislative and statutory requirements and health and safety responsibilities of work</p> <p>Employ ICT to communicate and perform key work functions</p>	1	2	3	4

Graduate case study questions

Demographics: Female Male Undisclosed

1. Icebreaker: Thanks for coming along. Can you tell me about your study and work experience?

Please note: Work: Year/s: Place/s: Occupation/s

Please note: (Prompt: Can you tell me about any studies you have done since graduating?)

Program/s Completed Y/N Place/institution Year/s Benefits/learning/impact

2. When you graduated, did you expect to be working as you are now? (What did you expect to be doing?)

3. *If no*: What did you expect work to look like and how did it differ in reality?

4. As a student, where did you get information about career and what work would look like?

5. Are you likely to continue in this career, or might you change?

6. Did your expectations of work and career align with the information your institution gave you before you started your course?

Y N (*If no*: What were the differences?)

7. To what extent do you feel your course prepared you for work and employment?

Not at all	Somewhat	Mostly	Completely
1	2	3	4

8. When you started your undergraduate degree, did you have an idea of what you wanted to do for a career? (If so, what was this?)

9. Did this change during your degree? Y N

If yes: What prompted this change?

10. When you finished your degree, were you able to commence your chosen career?

Y N *Open question. Try to capture the following:*

- What were employers / clients looking for?
- As a graduate, which of these did you not have?
- What strategies did you use to improve your employability?
- When did you realise or decide to adopt these strategies?
- What did you gain from them?

11. During the years you were studying, what experiences contributed most to:

- Your understanding of work and career?
- Improving your ability to pursue your career? (Prompt – work experience, volunteering, WIL, within and outside the course)

12. As a student, were you aware of opportunities at your institution to enhance your employability? Y N

- *If yes:* Did you take up any of these?
- With hindsight, were there opportunities you regret not having taken?

13. Other than your degree what things did you do to enhance your employability, and what impact did they have?

14. What outstanding attributes do employers/clients look for in a graduate? (Job-specific skills knowledge/experience/personality/other?)

- What gets them an interview?
- What should applicants bring to an interview, to prove they can do what they say they can do?
- Do you have some ideas about how they could develop evidence? (May mention research, internships, volunteer work, graduate career panels, career development classes, counselling etc.)

15. Refer to the attached ratings scale for this question.

16. Finally, is there anything else you need to tell me about being prepared for work and gaining employment?

17. How important are these competences? (same table as before)

Leader case study questions

1. On a scale of 1 - 4 with 1 being **not at all** and 4 being **completely**, to what extent do generalist undergraduate courses prepare students for work and employment?

Not at all	Somewhat	Mostly	Completely
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

2. To what extent should the information given to potential students address the realities of work and career in their field of study?

Not at all

Somewhat

Mostly

Completely

1

2

3

4

3. What should HEIs already be doing to make courses relevant to the employability of their graduates?

4. In general, how realistic/aware are undergraduate students about the realities of work and career in their field of study?

Not at all

Somewhat

Mostly

Completely

1

2

3

4

5. Whose responsibility is graduate employability?

6. What do **employers** look for in graduates?

i. To what extent do you develop these traits at your institution?

ii. What more could realistically be done across the HE sector?

iii. What are the impediments for institutions?

7. In terms of **developing employability**:

- b. In an ideal world, what strategies would you like to see in every undergraduate program?
- c. Realistically, what more could be done now?
- d. What are the impediments?

Thinking now about the **support structures for staff**:

8. What structures and strategies are needed to ensure that staff can and will develop employability and career awareness?

- a. Realistically, what more could be done now?
- b. What are the impediments?

9. Is there anything else you would like to say about developing employability among undergraduate students?

10. Please rate the following competences in order of the importance an employer would place on each:

How important are these competences? (same table as before)

Careers advisor case study questions

1. When and why do students currently access career services at (institution)?
2. Is this as you would like it, or would you like changes?
3. How do you see university-based career services changing over the next 10 years?
4. What is driving those changes?
5. If you had the ability to completely reshape career services in higher education, what would you do?
6. What are the impediments to this?
7. What could be done now, and how could we make it happen?

Appendix C - Case study sample

	Graduates	Students	Leaders	Careers advisors
TOTAL	23	22	13	2
Location				
- New South Wales		15	1	
- Western Australia	12		1	1
- Queensland	4	6		
- Victoria	4		10	1
- Overseas	2		1	
- Northern Territory	1			
- South Australia		1		
Gender				
- Female	14	11	4	2
- Male	9	11	9	
Broad field of education				
- Performing Arts	18			
- Life Sciences			3	
- Humanities			2	
- Creative Arts	4			
- Information technology	1			
- General			8	2

Appendix D - Interventions that enhance student and graduate employability

As part of the research phase of the project we conducted a search of university web sites to identify way interventions which are used by universities to improve graduate employability. Common approaches identified by this approach and in the literature on employability include:

- *Extra- or co-curricular activities*: support and/or recognition of volunteering roles, peer-assisted study or learning, and leadership roles in community groups (for example, see <http://www.employability.ed.ac.uk/Student/EdinburghAward/>)
- Explicit support for finding graduate employment: e.g. how to write an application for work; practice interviews; access to employers and/or job listings;
- *Work integrated learning* incorporating formal and informal, real or simulated s in the shape of credit- or non-credit awarding activities (for example see, Xia, Caulfield & Fern, 2014; Smith Ferns & Russell, 2014; and for a specific example see <http://www.rmit.edu.au/industry/student-work-placements/>); and
- Programs that develop skills such as teamwork, understanding of workplaces through case studies, and problem-based learning (for example, see Shen & Ooi (2013), Shen Buskes Evans & Ooi (2011); see also Mason et al (2009) for a detail evaluation of intervention effectiveness)

Examples of employability services offered by universities in Australia and internationally

Bond University: Beyond Bond

Run by the Career Development Centre, this program is designed to prepare students for the transition from academic study to employment and covers areas such as Work/Life Balance, Stress Management, Career Planning, Financial Management and others

Deakin University's Job Shop

The Job Shop is Deakin University's career web resource. It has an online employment service cover student part-time jobs through to graduate positions. It also offers support services for the recruitment process and for career planning.

La Trobe University's Career Ready program

This provides information on career planning and employability skills development.

RMIT University's LEAD program

The LEAD program assists students gain experience through co-curricular opportunities mainly through volunteering roles within the university. It is accredited and can lead to a certificate issued by the University.

The University of Western Sydney UWS Careers (Career vUWS)

The vUWS is a online suite of career modules covering; career preparation; work placement preparation; career management; and graduate employment. It also has a series of modules on workplace resilience. The modules can be incorporated into the curriculum or taken as a co-curricular activity.

The University of Melbourne's Skills towards Employment Program (STEP)

STEP is a compulsory hurdle for all engineering students. It assists students developing generic skills including communication, teamwork, project management and leadership. Students demonstrate their skill proficiency using ePortfolio.

The University of Melbourne (2015). School of Engineering Industry Based Learning elective

The link is to the 2015 Subject Handbook Entry. This is an example of a subject based around a WIL project. Assessment is through reflective writing and presentations, and a final report of 8,000 words.

The University of Nottingham (2015). Advantage Award.

This is an extra-curricular structured accredited program consisting of about 160 modules. The modules are provided by a variety of organisations, including employers. They develop employability skills such as leadership.

The University of the West of England (2014). Careers services.

This is another example of a university careers service, providing in person and online assistance to students. It also has an online job vacancy board. There is a employment placement program allowing students to gain work experience during their studies.

Examples of university support for graduates in the years immediately after graduation

University of Warwick Services for alumni

All alumni with free access to its careers service for up to three years after graduation. Support includes appointments with careers consultants, checking CVs and applications, online support, mock interviews, careers skills workshops and access to careers fairs.

University of the West of England alumni support

Services similar to Warwick are offered to alumni. In addition, there is support and funding to start new businesses.

Examples of university programs to effect organisational change to enhance the teaching of employability skills to students

University of Nottingham key skills project

Chapple M. & Tolley, H. (2000). Embedding key skills in a traditional university. In Fallows, S., & Steven, C. (Eds.), *Integrating key skills in higher education: Employability, transferable skills and learning for life* (pp. 17-32). London: Kogan Page.

University of Luton skills mapping and embedding project

Fallows, S. & Steven, C. (2000). The skills agenda. In Fallows, S. J., & Steven, C. (Eds.), (2000). *Integrating key skills in higher education: Employability, transferable skills and learning for life*. (pp. 17-32). London: Kogan Page.

Mobility programs

Greater mobility between industry and academia was a dominant theme throughout the case studies. Notable mobility programs include study programs such as the European Union's *Industrialised Countries Instrument - Education Cooperation Programme*, which enables students to study in a partner country (including Australia).

They also include research-industry partnership programs such as the Australian Research Council's *Linkage Grants* and, in Europe, funding for *Public Private Partnerships in Research*. Versions of these programs are also seen at most higher education institutions; however, at every level they appear to ignore learning and teaching.

The Office for Learning and Teaching might consider a new "Linkage" program focussed on learning-industry linkages that benefit both educators and students through industry exposure. It is likely that such a program would be of interest in the European Union, where there are similar discussions about employability.

Appendix E - Case study vignettes

Australian trumpeter Danielle Rich

Prepared by Dawn Bennett

Dani's story

“Find out who you are and what you want, then grab every opportunity”

Dani Rich describes herself as someone “working and living” her life as a musician. After starting with the clarinet in high school she fell in love with the trumpet, and in 2010 she completed a performance degree at the Queensland Conservatorium.

This led to a Master's degree in England, but the decision to pursue music at the professional level was far from simple. Dani describes 18 months of doubt following the completion of her degree:

I was feeling the pressure of what to do, and put my trumpet in its box for a little while. I worked – well, I taught music and worked in cafes and bars and in a law business and that kind of thing – just to see if actually I wanted to come back to trumpet, because it's such a big commitment and I wasn't really ready to put all my eggs in one basket.

Identity formation

What Dani describes is an essential stage of personal and professional identity formation: she challenged her identity. Careers in music are complex, and managing such complex careers requires self-efficacy (a belief in your own ability), professional self-concept (knowing how you feel about yourself as a musician) and self-regulation (the ability to regulate activities and decisions). This is hard to achieve for someone who hasn't yet thought about who they want to be, both as a musician and an individual.

Maybe 1 or 2% of music students come with a realistic goal. ... Take the time to work out what you want

The stages of identity development can be described in many ways, and Figure 1 illustrates a simple way of thinking about it using Marcia's (1966) four stages of identity development. Identity transitions are often inspired by uncertainty. They are normal and healthy, because identity is an ongoing process that lasts a lifetime! Dr Kate Byerwalter of Grand Rapids Community College created this [short video](#) on identity development. In the video, Kate

explains identity stages and transitions in simple terms that professionals, educators and students can understand.

Identity moratorium

Dani’s recognition that she wasn’t sure whether to commit to a career in music led her to identity moratorium. By challenging her identity, she eventually reached the stage of identity achievement whilst remaining open to new opportunities. This gave her new energy: “I know it’s really what I want to do now”.

Having made her decision, Dani asked her trumpet teacher for recommendations of great teachers around the world, and then she set off to do auditions and to take lessons. The result was an audition for the Master’s Degree at the Royal Northern College of Music in Manchester, England, and Dani had to find ways of meeting the high cost of studying in the UK. Again, she was pro-active:

I discussed [with the teacher in Manchester] how I might afford it and he really helped me to get a scholarship from the college. ... I don't think I could have been able to do it otherwise. Then, for the next eight months I just worked and practised and saved as much money as possible, and then I moved to Manchester.

The four identity states

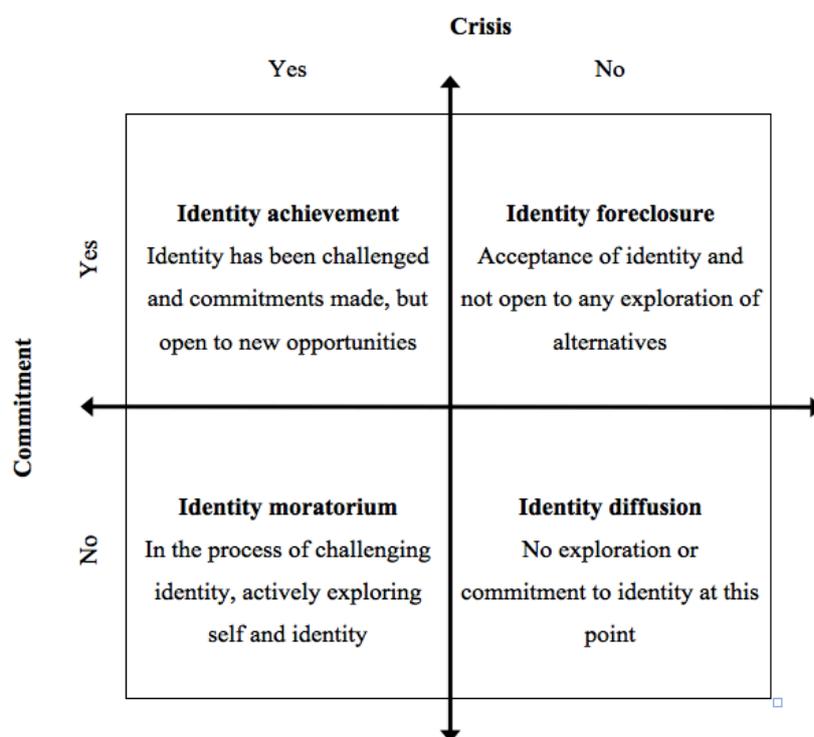


Figure 1: The four identity states, drawn from Marcia (1966)

Having made the commitment to pursue music, Dani took every opportunity: “when I was doing my Master’s degree I was really doing it properly – taking every opportunity rather than letting things come to me”. The casual work with Opera North and two professional access schemes – internships – were new programs when she undertook them. Her message to current students is to “grab every opportunity to get experience”:

In Amsterdam there was a pilot scheme with the Netherlands Wind Ensemble and they sent three of us there for two weeks to play in the ensemble and go on tour with them. They liked us a lot so they asked us back for their New Year’s concert. They were fantastic – that was probably one of the highlights of the two years as the ensemble is completely different to any ensemble I’d ever worked with before. ...

As well it was really great to be able to play in Europe and see what the scene is like there. ... You have to be ready for the opportunities when they are thrown at you and then you just make it work.

She also advises students to watch, listen and learn to play as much and as varied orchestral, chamber and solo repertoire as you can. You need to educate yourself on as many styles and sounds as possible, not just on your own instrument.

Audition for everything possible. ... Grab every opportunity to get experience

Reflecting on the decision to move away from Australia, Dani is certain that broadening her experience was a positive move:

I’m a much better trumpet player and I more confident in my ability and choices. It’s easy to get comfortable – I have lived in Brisbane for most of my life and all my study was in Brisbane, and it’s easy to accept that this is all you could be. You really have to push yourself to go and find things that make you work harder. People can find that kind of motivation in different places, for me I needed to go overseas and get out of my comfort zone for a while

Transition to becoming a musician

Looking back, Dani talks frankly about her transition to becoming a musician. Her comments highlight that university students often to study music because of their love for it; only later do they recall and understand advice given to them before they were ready to consider their identities as musicians:

I don’t think I had any idea what it was like to be a trumpeter ... I just did it because I wanted to play the trumpet. It wasn’t all I could do – I studied hard and got good grades – but I really wanted to play the trumpet! My teacher at the time was trying to make me more aware of the realities: ‘it’s not like you just get

to play the trumpet and someone pays you!'. But I didn't understand what he was talking about really. Then I can to the Con and everyone was saying 'there's no work' – there's this kind of vibe everywhere you go because it's true.

But now I have made that decision, I don't think I would be happy doing anything else. So that's what I'm going to do. I don't mind if I have to work other jobs to support my main goal, as long as I can make my playing my main thing and eventually get a job.

Dani's ultimate goal is "To play first trumpet in an orchestra somewhere in the world. It doesn't matter where". She is now actively auditioning, so based on her experience in Australia and Europe we asked what orchestras look for when auditioning players.

Someone who makes a good sound, plays in tune and in time – that's what everyone wants to hear. But also, you have to do something special to show yourself. They're looking for an understanding of your repertoire and an understanding of how to fit into an orchestra. You have to keep in mind that they are looking for someone they can sit next to and work with every day.

I worked it out by just talking to people. That was one of the great things about Manchester – any day of the week you can go and talk with the trumpet staff as they have their coffee! Not enough people take advantage of that, to just go and chat ... but as a nice person, you don't want to be seen as too pushy.

As a graduate I wasn't ready to go out and win a job. I'm still not, but I'm very much closer.
--

Asked what, if anything, she would change within higher education, Dani remarked that the transition from study to work is one of the most challenging issues for music students:

When I was in my final year I really had no idea how to make the leap into the profession. Even though I did an orchestral internship during my degree, I had no idea what I was doing in terms of how to play in an orchestra – how to be prepared and what was expected of you. Just on a basic level, the first time I played in an orchestra I didn't know how to do it at all: for example, knowing how to count rests! It sounds silly, but if you're thrown into something and you can't count, you're not use to anyone. Even if you make the best sound in the world.

This is why I became disheartened I think – because no one can actually teach you that. You have to go out and find ways of getting experience yourself. I didn't even know about casual auditions, and you don't know to go and actively seek auditions. ... When I went to England and did auditions there I suddenly realised how much work you have to put into it. It was a much bigger scene and there

were loads of players, some a little bit older and professional players, and I realised 'yes, I could do this'!

Students need to find teachers who are in the profession. It's completely different, the expectations are different, the talk is different about how hard it is to get an actual job. It makes a huge difference if your teachers are actually in the profession.

It makes a huge difference if your teachers are actually in the profession.

The responsibility is shared: everyone is really young when they come to do a degree, and at the time you're doing the fundamental courses you don't realise how important they are and you don't give them your full attention. ... I also think the structure is difficult for young people because they don't know how to put the pieces together. ... I knew I loved playing the trumpet, but I didn't understand how what I was actually studying was going to eventually make me into a musician.

However, students need to understand the broader concept of the music industry and take responsibility for their own learning. I didn't know what happened beyond my own city or about what resources are available: for example, the resources online are incredible. Students also have to be interested in what they're doing – to be watching concerts and going to classes and finding out what the text of a song means... and getting involved in the music industry as much as possible. They need to find a way of liking the things they do, even if it's not playing the trumpet! I don't know how that can be communicated to students because it also relies on them being proactive. And students need to learn how to work to the tight schedules of a professional orchestra where there's a new program every week or two. That's really tough to learn on the job.

Higher music education students need to explore their future lives in music, creating expert selves that are sustainable over the career lifespan. For Dani the next year includes work with the Queensland Symphony Orchestra before heading back to Manchester for further lessons and work with Opera North, and to take advantage of the proximity to Europe and increased opportunities. She is determined to achieve her goals and she is a young musician to watch!

Students need to understand the broader relevance of their degree: what it is giving you and why you're studying it.

Reference

Marcia, J. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology*, 3(1), 551-558

Developing your personal brand

Prepared by Sarah Richardson

Sue's story

As a performer, you can't just go on a stage and play anymore; it's not about that ... You can't be narrow minded and just focus on your discipline, that's not what employers want any more in any field.

Sue* graduated with an honours degree in music performance in 2006. Her main instrument is clarinet* but she also plays a number of other instruments. Sue is currently the manager of a regional orchestra, a position she has held for several years. She also performs both in the orchestra and in a number of ensembles.

In her management role she manages all activities of the orchestra from arranging the logistics of performances, recruiting guest artists, carrying out marketing and communication activities and coordinating events. She acknowledges:

I was never expecting to be in a management role of an orchestra, I think I was expecting to do a lot more teaching and a lot more playing but I guess it was a personal situation that took me away from that and then I had to find other work just by chance.

After graduation, and before starting her current job, Sue spent several years in a number of teaching roles both in metropolitan and regional areas. She completed a Graduate Diploma of Teaching and Learning once it became a formal requirement for music teachers and taught in a number of different schools, as well as taking on private pupils. In addition to teaching she was actively involved in accompanying choirs and established an ensemble with friends from her course, giving regular performances.

The narrow experience of a music degree

Thinking back to her degree, Sue feels that educators had very narrow assumptions about what graduate would do. She suggests that educators did not consider the range of professions which those with a performance background could go into, from arts management to music administration to music therapy.

Because the focus of educators was so narrow, students didn't know that these were options and weren't able to gain the skills required. She recalls:

It was communicated ... if you were good enough you would be a performer, if you weren't good enough you would be a teacher ... but you could be one of the

top people and you won't get an orchestral job and therefore if you haven't had any experience in teaching or if teaching has been made to seem like it's a second option, then what do you do?

*Details changed to protect anonymity of research participant

Learning from life

Because Sue's course included no information on careers beyond music or teaching, she had had to learn the skills and knowledge to do what she is doing now through informal channels. She comments on her learning as coming from:

Life experience ... talking to other people and learning and reading ... what I've done within my job ... I've had to fly by the seat of my pants and take on board ... meetings and networking, reading – a lot of reading about other organisations and their models and structures, contact with board members, some professional development workshops, mostly around conflict management and dealing with people.

Good at performance, bad at communication

Now Sue is in a position where she is involved in appointing other music graduates, both to performance roles and also to other roles, including education and outreach. She finds that many music graduates lack the broad range of skills that are required.

She also reports that some people who are great performers have very poor communications skills, and this can mean that they are not considered for jobs beyond performance alone. As she recalls from a recent interview:

the best candidate in terms of playing did the worst interview because they just spend their lives playing and then when it comes to having to have a change of career, or looking for a different option, because they don't want to just play anymore, they don't have the skills ... we can assist her but not all workplaces are going to be that accommodating.

Developing your own brand

Looking back at how her career has evolved, Sue feels that it is essential that graduates from performance degrees **develop their own brand**. She thinks there is a perception that you just perform and that is enough. As she suggests:

It's not just about being able to play the instrument; in fact it's even not about that anymore, because there's so many people who can play the instrument ...

Instead, Sue suggests that all performers need to be able to market themselves, sell their skill sets, network, and communicate well. Most of all, she encourages all performers to develop a presence on social media.

Developing your personal brand

There are now numerous resources available to help people build their own brand. They all tend to highlight the same key steps. As you read through each one, try to work out what your personal brand is:

Identify your unique selling proposition – What is it about you that makes you stand out from others? What do you want to be known for? What do you want to achieve?

Identify your target market – Who are you trying to communicate to? Which groups of people will be critical to you in developing your career?

Identify your communication mediums – Think about your target market and identify which communication mediums are most likely to reach them – be specific e.g. not just ‘social media’ but which forms?

Get attention – Lots of people communicate with others. What can you do to make yourself stand out and get noticed?

Find mentors – most of us need people who will give us advice as we launch or develop our careers. What kind of mentors do you need? Who could you approach?

Creative approaches – what are some other ways that you could develop your personal brand? Think of approaches that would be particularly appropriate in your desired career.

Support for this project has been provided by the Australian Government’s Office for Learning and Teaching.
The views expressed in this publication do not necessarily reflect the views of the Australian Government
Office for Learning and Teaching.

Finding a career after a general degree

Prepared by Philip MacKinnon

Kristy's story

"Pursuing an interest can make finding a career to fit that interest challenging".

Kristy completed a double degree in visual arts and Arabic in 2010. In deciding to do this degree, Kristy followed her interests rather than worrying too much about a career. Kristy discovered that career options are not as obvious for graduates of general degrees than those of professional degrees.

Universities may give students a list of potential jobs they can pursue after their general degree, but getting one of these jobs may not be easy or the pathway to it may not be obvious.

As she progressed through her degree, Kristy became increasingly concerned about what she would do when she finished. She spoke to one of the university's career's advisers about options: what she expected was a list of jobs that she would be qualified for and would be able to apply for when she finished.

She got that, but found it wasn't that helpful. There was no clear pathway from her degree into any of the jobs on the list. As Kristy said, that

The fact that I was doing a general degree meant I didn't fit into any box or career path ... you feel like you are on your own when it comes to finding a job.

Kristy response was to seek more advice, including from older trusted friends, her parents, and from academic staff at her university.

From academics she learned that the most reliable income for people working in visual arts was from education and doing visual arts on the side.

Kristy was advised to get more experience through doing voluntary work—she visited an elderly lady once a week. She found the experience profound and it helped her decide what direction her career should take.

During her studies Kristy got extra experience through studying in Jordan for eight weeks. This helped her enormously with her Arabic language skills, which proved important for her employability, as she subsequently did an internship with a publisher in Dubai.

The internship turned out to be useful in showing what she wasn't interested in. She was involved in page layout in the internship, something she didn't much enjoy.

When Kristy graduated, she applied to do a Masters of Art Therapy, but was told at her interview to get a least a year's more experience in working with people, so she did voluntary work for Multiple Sclerosis Australia.

She worked with a 97 year-old-woman, an experience she found profound: "*One of the most beautiful things I have done.*" But again Kristy found that the experience showed her what she didn't want to do: she decided against doing Art Therapy.

Kristy has taken opportunities as they arose. This has taken her a long way from her original degree. Even though she doesn't have a background in science, she took a position in science outreach to schools, and enjoyed the work immensely.

Kristy has had a couple of positions since graduating, including working in science outreach for school aged children in metropolitan and country Victoria. This was unexpected, as she didn't have a background in science, but she enjoyed it and learned a lot.

She now works three days a week in educational assessment and spends two days a week in self-directed study of Arabic. She likes the balance, saying that the paid work exercises a different part of her brain to the creative work she does by herself.

People have been essential to Kristy's career. Her opportunities usually came by word of mouth. And the advice of people she respects has helped her find her direction.

In terms of developing her career and finding jobs, Kristy says that people have been important. All of her opportunities have come through suggestions by people she knows. Her volunteering and her work and study in the Middle East were also crucial in developing her skills relevant to employment.

And when going for a position, Kristy thinks the most important thing a candidate can take to an interview is stories. Anecdotes and explanations which show their ability, experience and character.

Appendix F - Project activities

Date	Event title & location	Purpose of event	Presenter/team member	Participants	HEIs represented	Other institutions represented
January 2014	2014 Teaching and Learning Forum, University of Western Australia, Perth	Presentation on using ePortfolios to enhance self-efficacy among music and writing students (extension of project ID11-2041)	DB	40	6	0
January 2014	2014 Teaching and Learning Forum, University of Western Australia, Perth	Presentation on ePortfolios and evidence building for employability (extension of project ID11-2041)	DB	40	6	0
February 2014	UNESCO Centre for Arts Research in Education, NIE, Singapore	Why and how to incorporate self and identity in Arts education. Keynote address for the	DB	80	2	3
March 2014	2014 Festival of Learning Showcase, Curtin, Perth	Present to colleagues on using ePortfolios with writing students to enhance employability	DB	12	1	0
May 2014	OLT conference, Sydney	Panel presentation from all commissioned OLT projects to promote discussion and enhance participation	DB	50	38	0
May 2014	IREG-7 Conference: Employability and Academic Rankings, United Kingdom	Present project to international conference	MM	176	90	30
July 2014	The 20th international seminar of the ISME Commission for the Education of the Professional Musician, Brazil	Present project to international music educators focused on musician development (led to survey responses from Mexico and Brazil)	DB	60	35	4
July 2014	The 20th international seminar of the ISME Commission for the Education of the Professional Musician, Brazil	Presentation on the role of creativity in students' development of personal and professional identity	DB	60	35	4
July 2014	The 31st International Society for Music Education World Conference, Brazil	Present project to international music educators	DB	50	28	0

July 2014	The 31st International Society for Music Education World Conference, Brazil	Two presentation on using ePortfolios to develop employability in the creative and performing arts (extension of project ID11-2041)	DB	130	64	0
August 2014	Bond University Teaching and Learning week	Present project to Australian colleagues	DB	50	4	0
October 2014	The Australian Conference on Science and Mathematics Education, Sydney	Present project to Australian science and mathematics teaching staff	DB	75	35	0
October 2014	Graduate Employability Symposium, Bond University	Present project to Australian higher education community	DB	140	30	0
October 2014	Graduate Employability Symposium, Bond University	Workshop on employability strategies delivered with CI Jollands	DB	24	14	0
Nov 2014	National Forum – Developing graduate employability through partnerships with industry and professional organisations RMIT University	Report on the eSage project (collaboration with RMIT-led commissioned project)	PM	100	33	6
Nov 2014	Australian Institute of Physics Congress. Canberra	Presentation to Australian physics educators about engaging students in development of self- and career	DB	40	26	0
Nov 2014	25 th Annual Australasian Association for Institutional Research Forum, Melbourne	Present project to international higher education community	MM	400	39	0
Nov 2014	International Music and Performing Arts Conference, UPSI, Malaysia	Present project to international music and performing arts educators	DB	20	10	0
Dec 2014	International Conference of the Australian Association for Research in Education, Brisbane	Symposium on employability for all three projects (lead by eSage), with CIs Linda Crane and Margaret Jollands	DB	8	8	0
Dec 2014	International Conference of the Australian Association for Research in Education, Brisbane	Presentation on an employability intervention trialled with engineering students	DB	30	20	0
Dec 2014	Australasian Association of Engineering Education Conference, Wellington	Masterclass on preparing students for gendered workplaces (collaboration with SD13_2416)	DB	11	10	0
Dec 2014	Australasian Association of Engineering Education Conference, Wellington	Presentation on the development of self and career with 1 st year students in STEM	DB	15	7	0
Dec 2014	National Council of Tertiary Music Schools	Presentation on employability and women in music	DB	12	12	0

Dec 2014	Joint CubeNet/VIBEnet/National Committee for Biomedical Sciences forum: Crossing the boundaries - Transdisciplinary approaches in biosciences education for the 21st century. Shine Dome Canberra	Presentation on the employability of bioscience graduates	PM LS	80	15	1
January 2015	2015 Teaching and Learning Conference, University of WA, Perth	Presentation on engaging 1 st year students in development of self- and career-awareness (science)	DB	40	7	0
January 2015	2015 Teaching and Learning Conference, University of WA, Perth	Presentation on the development of employability, with CI Jollands	DB	40	7	0
January 2015	2015 Teaching and Learning Conference, University of WA, Perth	Presentation on engaging students in future-oriented thinking (writing)	DB	40	7	0
January 2015	2015 Teaching and Learning Conference, University of WA, Perth	Workshop on preparing students for gendered workplaces (collaboration with SD13_2416)	DB	14	5	1
February 2015	The Reflective Conservatoire 4th International Conference, London, UK	Convened a panel on employability in music with experts from Australia, the UK, Europe and the US; launched a call for a two-year collaborative project to extend the project and compile items for the toolbox	DB	80	65	2
April 2015	Flinders University CUT Lunch Series 2015: 'Employability in a Changing World: How can we ensure our graduates are work-ready and adaptable to the changing employment landscape?'	Present project to Flinders University staff	LS			
June 2015	LH Martin Seminar	Seminar on the project in relation to implications for STEM	PM PP			
July 2015	Higher Education Research Development Conference, Melbourne	Half-day workshop on employability with invited guest speakers from across Australia	DB SR	20	15	-
July 2015	InSPIRE postgraduate conference, Perth	Presentation on becoming work ready, part of an expert panel on career options for research graduates	DB	80	5	-
Oct 2015	12 th annual conference of The International Society for the Scholarship of Teaching & Learning (ISSOTL)	Half-day workshop on enabling and enacting employability within higher education classrooms; expert panel discussion	DB			

Appendix G - Industry snapshots

What do we know about the work of writing graduates?

By Dawn Bennett and Rachel Robertson, Curtin University and Sarah Richardson, Australian Council for Educational Research.

What do the data tell us?

The 2013 Australian Graduate Survey collected data from 4,360 graduates from Communication and Media Studies degrees. Data was collected between four and six months after graduation.

Population

Data was collected from graduates with the following characteristics:

Characteristic	Number	Percentage
Male	1,367	31.4
Female	2,993	68.6
Median age	23	-
First language English	3,445	79.0
First language Other	793	18.2
Graduate from undergraduate degree	3,576	82.0
Graduate from postgraduate degree	737	16.9

Overall outcomes

Status	Number	Percentage
Full-time work	1,567	36.4
Part-time work	1,625	37.8
Self-employed	261	8.4
Studying full time	742	17.4
Studying part-time	211	4.8

Overall, 36.4 per cent of graduates were working full time, 37.8 per cent was working part-time and 8.4 per cent was self-employed. In relation to studying, 17.4 per cent was studying full time and 4.8 per cent was studying part-time.

Employment outcomes

Of those 3,192 graduates who were working, whether part-time, full time or self employed, the largest area of main employment was publishing, accounting for 6.6 per cent of graduates. Other graduates were distributed across multiple employment areas. The chart below illustrates just those areas in which at least 1.5 per cent of graduates were employed.

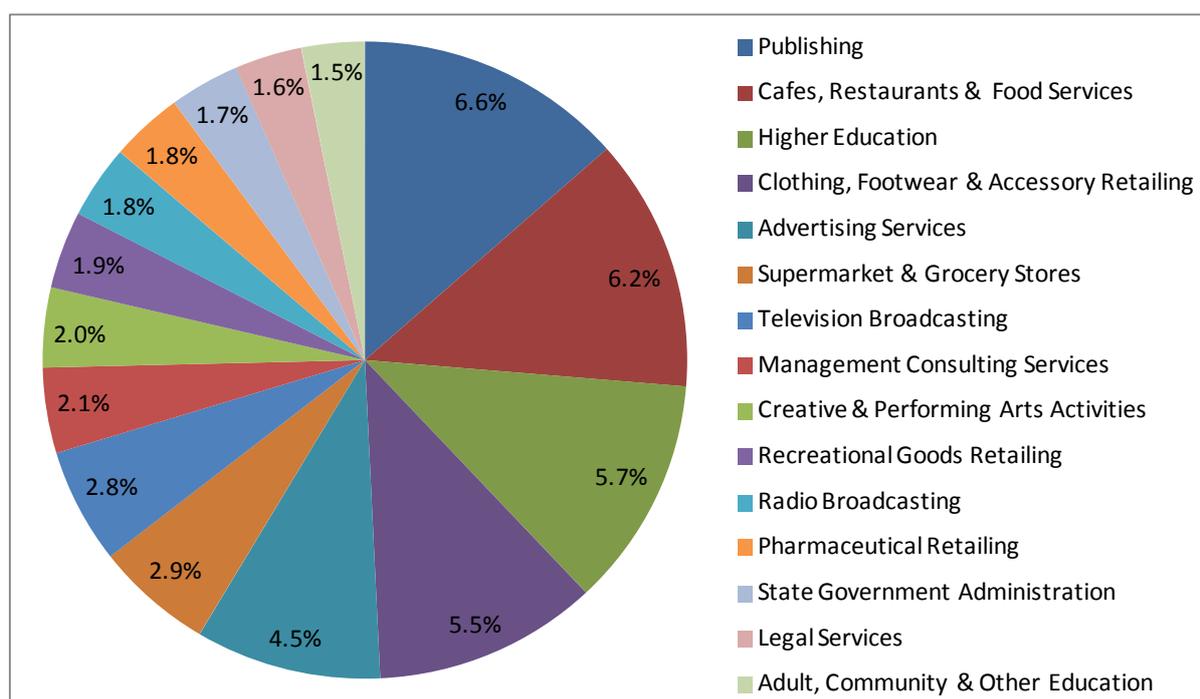


Figure 1: Sectors employing communication and media graduates, AGS, 2013 (n=3,192)

Further study

Of the 910 graduates who were undertaking further study, 44.7 per cent was in the field of Creative Arts (including Communication and Media Studies) and 22.9 per cent was in the field of Society and Culture.

More information?

For more information on the outcomes of graduates from Communication and Media Studies degrees at your institution, contact the Deputy-Vice Chancellor Academic.

What is the broader context?

Writing programs have undergone an international expansion since the 1990s. However, there still seems to be little understanding about the reality of earning a living as a writer (Bennett & Robertson, in review).

Whilst officially we know very little about the destinations of professional writing graduates in Australia (Baverstock, 2007), we know anecdotally that graduates work across associated professions and industries including public relations, advertising, communications, government, information technology, publishing, administration and journalism.

As shown in the following chart, Australian labour force data in related occupations suggest that employment levels in these sectors are fairly static, and yet the number of students and graduates in Australia has more than doubled since the late 1990s (Australian Government, 2013). It is likely, therefore, that a growing proportion of writing graduates need to work in multiple concurrent roles and/or both within and beyond traditional destinations.

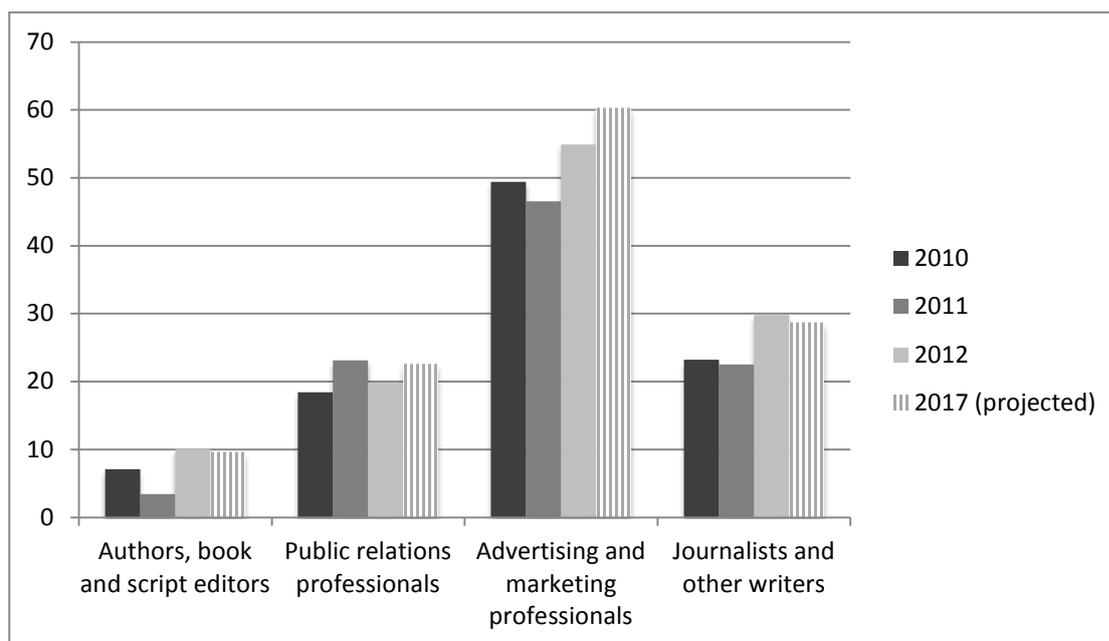


Figure 2 Historical/projected ABS Labour (1,000s) from <http://joboutlook.gov.au>

Writing graduates who hold multiple concurrent roles will tend also to self-manage their careers and to create their own work opportunities through reputation building and networking (Arthur & Rousseau, 1996; Bridgstock, 2009).

This often means moving across the boundaries of employers, clients and task orientations, between different employment arrangements, and between traditional, online and digital environments (Daskalaki, 2010) into roles which in some cases did not even exist five years earlier (Bennett & Robinson, in review).

Things to think about

1. Writers are likely to cross the boundaries of employment several times during their careers. This means that students need to learn the concept of life-long learning.
2. In most workplaces, writers must produce texts amidst distractions such as phones, distracting co-workers and writing deadlines. These can be vastly different than university work, so students benefit from early and regular industry exposure.
3. Writing graduates often cite lack of experience with producing texts other than those that are part of academic requirements. Effective writers must quickly adapt to the style, length and content of texts required. For the successful accomplishment of writing tasks in both higher education and professional settings, situation-specific types of writing knowledge need to be operationalised, and links made between general and specific knowledge (Beaufort, 1999).
4. Publications form the basis of a writer's career or reputation. Janssen (1998) goes as far as proposing that the literary "status" of writers is strongly dependent on the critical attention given to their writing in daily and weekly press. In other words, being considered a writer depends on publications rather than on academic qualifications or other formal criteria. At the student level, publications and other example of writing can be illustrated through a digital portfolio.
5. Graduates need to be able to interact with others in order to manage team-based work and professional networks. These skills can be developed in class and in part-time work and volunteer roles as well as during industry placements relating to writing.
6. Janssen (1998) notes that writers who are active in several areas may have a better chance of attracting the critics' attention than those who publish only in book form. A similar argument could be made for attracting the attention of potential employers and publishers.
7. Duhé and Zukowski's (1997) analysis of the broadcast curriculum found that individuals with hiring authority favour a polished résumé with journalism skills over an academic degree. Similarly, television news broadcasters looked for experience over education. However, graduates who can illustrate both will be best placed to find work.
8. Robertson (2011) reviewed employer expectations of professional writing and publishing graduates and concluded that employers of all sizes and in all industries require graduates with high-level generic skills;
9. Robertson also predicted a rise in demand for generalist communicators and writers, and for highly skilled communications graduates able to meet the demands of digital publishing, social media and other developing technologies. Specifically, "on-line writing, editing and publishing skills are key skills which will be in demand in the future in Australia and internationally" (Robertson, 2011, p. 2).

These studies highlight the need to ensure that students have sufficient industry experience and that they are able to evidence their work in each setting. In line with this the project's [toolkit](#) has developed resources designed to help educators to address five key themes:

- Develop skills and knowledge
- Develop self
- Develop career awareness
- Interact with others
- Navigate the world of work

Further resources

[Capstone case study](#) from Curtin University (Professional Writing Program)

[Research report on employer expectations](#) (Rachel Robertson, 2011)

[ePortfolio summary slides](#) from the Curtin project

[Learning guides and resources](#) used within the capstone

[TILE tools](#) to engage students with thinking about identity and employability

[Career profiles in writing](#) from the enhancing employability website

References

- Arthur, M. B & Rousseau, D. M. (1996). Introduction: The boundaryless career as a new employment principle. In Arthur, M. B., & Rousseau, D. M. (Eds), *The boundaryless career: A new employment principle for a new organizational era*. Oxford: Oxford University Press.
- Australian Government. (2013). *Award course completions for all students by broad field of education, 1999 to 2012*, Statistics Publications. Canberra: Commonwealth of Australia.
- Baverstock, A. (2007). How to present yourself as a writer. In Earnshaw, S. (Ed.), *The handbook of creative writing*, (pp. 367-376). Edinburgh: University of Edinburgh Press.
- Beaufort, A. (1999). *Writing in the real world: Making the transition from school to work*. New York: Teachers College Press.
- Bridgstock, R. (2009). The graduate attributes we've overlooked: Enhancing graduate employability through career management skills, *Higher Education Research & Development*, 28(1), 31-44.

Daskalaki, M 2010 'Building "bonds" and "bridges". Linking tie evolution and network identity in the creative industries', *Organization Studies* 3, 12: 1649-1666.

Janssen, S. Side-roads to success: The effect of sideline activities on the status of writers. *Poetics*, 25(55), 265-280.

Robertson, R. *Employer expectations of professional writing and publishing graduates*. Unpublished. Perth: Curtin University.

Further reading

Beaufort, A. (2007). *College writing and beyond: A new framework for university writing instruction*. Utah: Utah State University Press.

Duhé S. F., & Zukowski, L. A. (1997). Radio-TV journalism curriculum: First jobs and career preparation. *Journalism & Mass Communication Educator*, 52, 4-15

Earnshaw, S. (Ed.) (2007). *The handbook of creative writing*. Edinburgh: University of Edinburgh Press.

Piirto, J. (1998). Themes in the lives of successful contemporary U.S. women creative writers. *Roeper Review*, 21(1), 60-70. DOI: 10.1080/02783199809553933

Spigelman, C., & Grobman, L. (2006). Why we chose rhetoric: Necessity, ethics, and the (re)making of a professional writing program. *Journal of Business and Technical Communication*, 20(48), 48-64. DOI: [10.1177/1050651905281039](https://doi.org/10.1177/1050651905281039)

Williamson, R. (2011). Proteus as writer: the role of the (academic) writing class in preparing Australian graduates for careers in the creative arts. *TEXT: Journal of Writing and Writing Courses, Special Issue 12*, n. p.

What do we know about the work of performing arts graduates?

Prepared by Dawn Bennett, Curtin University and Sarah Richardson, Australian Council for educational Research

What does the data tell us?

The 2013 Australian Graduate Survey collected data from 1,444 graduates from Performing Arts degrees. Data was collected between four and six months after graduation.

Population

Data was collected from graduates with the following characteristics:

Characteristic	Number	Percentage
Male	595	41.2
Female	849	58.8
Median age	23	NA
First language English	1275	88.3
First language Other	141	9.8
Graduate from undergraduate degree	1262	87.4
Graduate from postgraduate degree	157	10.9

Overall outcomes

Overall, 57.5 per cent of graduates were working part-time, 28.1 per cent was self-employed and 19.1 per cent was working full time. In terms of studying, 33.5 per cent was studying full time and 5.5 per cent was studying part-time.

Status	Number	Percentage
Full-time work	276	19.1
Part-time work	817	57.5
Self-employed	298	28.1
Studying full time	471	33.5
Studying part-time	77	5.5

Employment outcomes

Of those 1,064 graduates who were working, whether part-time, full time or self-employed, the two largest areas of main employment were Adult and Community Education, accounting for 14.6 per cent of graduates, and Creative and Performing Arts, accounting for 14.1 per cent of graduates.

Other graduates were distributed across multiple employment areas. The following chart illustrates just those areas in which at least 2 per cent of graduates was employed.

The chart indicates that the education sector is the largest employer of performing arts graduates overall, accounting for 30.5 per cent of graduates that was working.

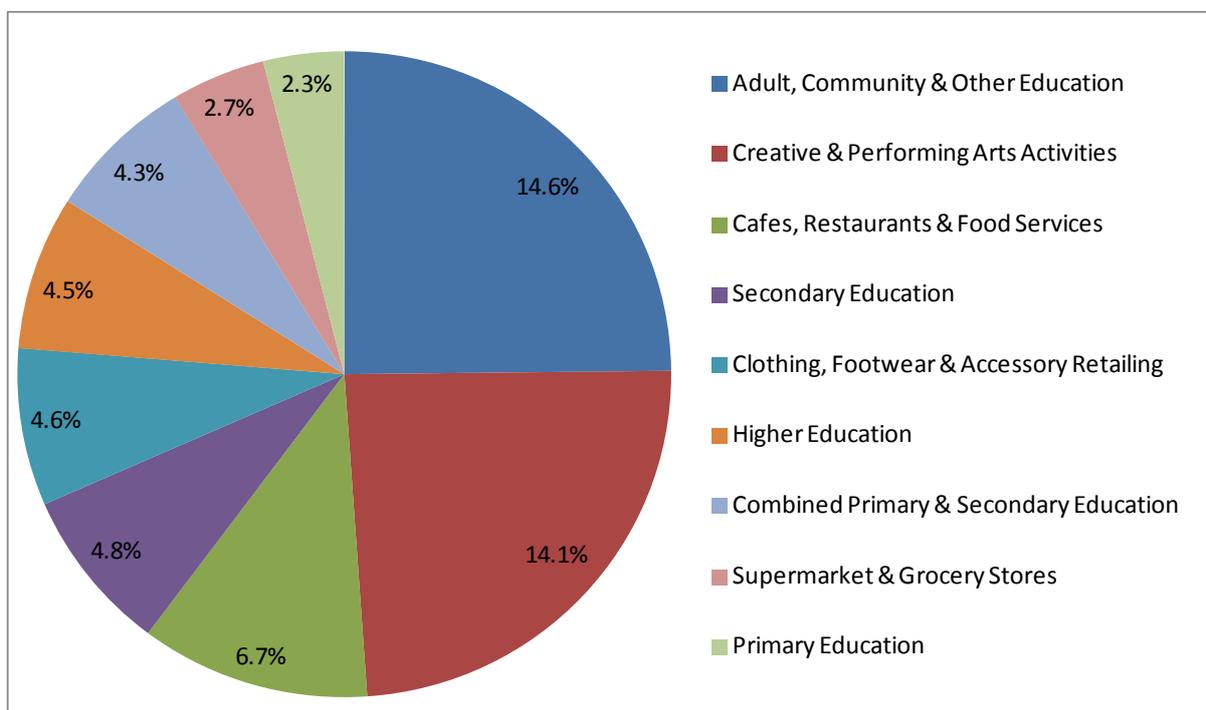


Figure 3: Sectors employing performing arts graduates, AGS, 2013 (n=1,064)

Further study

Of the 550 graduates who were undertaking further study, 48.1 per cent was studying in the field of Performing Arts and 26.9 per cent was studying in the field of Education.

More information?

For more information on the outcomes of graduates from Performing Arts degrees at your institution, contact the Deputy-Vice Chancellor Academic.

What is the broader employment context?

The performing arts are located within the creative industries sector, which is commonly defined as including the commercial and non-commercial industries of architecture and design; film, television, video, radio and publishing; fine arts; music and the performing arts; software and computer gaming; advertising; and crafts (UNCTAD, 2008).

The latest Australian Census data (2011) suggest that creative industries employment represents 5.3% of Australia's national workforce, or 531,000 people, and that the creative and cultural industries contribute over \$86 billion to Australian GDP.

These industries are among Australia's strongest performers (CCI Scorecard, 2013, n. p), with 40% faster growth than that seen than in the general economy. This growth is attributed largely to the digital revolution and growth in digital and design services. Performing arts graduates have opportunities across and beyond this diverse and exciting sector.

Understanding creative careers

Graduate employment data suggest that graduates of arts and creative industries programs consistently have the poorest graduate outcomes of the 40 broad disciplines measured in Australia's annual graduate destination statistics collection (Graduate Careers Council of Australia, 2012).

According to 2013 Graduate Survey data figures, which amassed data from 83,000 graduates, visual and performing arts graduates engage in a range of employed, self-employed roles including both part-time and full time work.

When only full time employment is considered, these poor graduate outcomes are evident. However, as shown in the chart below, when other forms of work are included the employment outcomes of all students emerge as relatively similar (Bennett et al., 2015).

The reason for this disparity is that despite the size and performance of the creative industries, creative workers' careers are too complex to be recorded in traditional measures such as the Census or the Graduate Destination Survey.

The limitations of existing data are illustrated by empirical research: for example, economist David Throsby (2008) concluded that the actual number of creative workers is over twice the official recorded number.

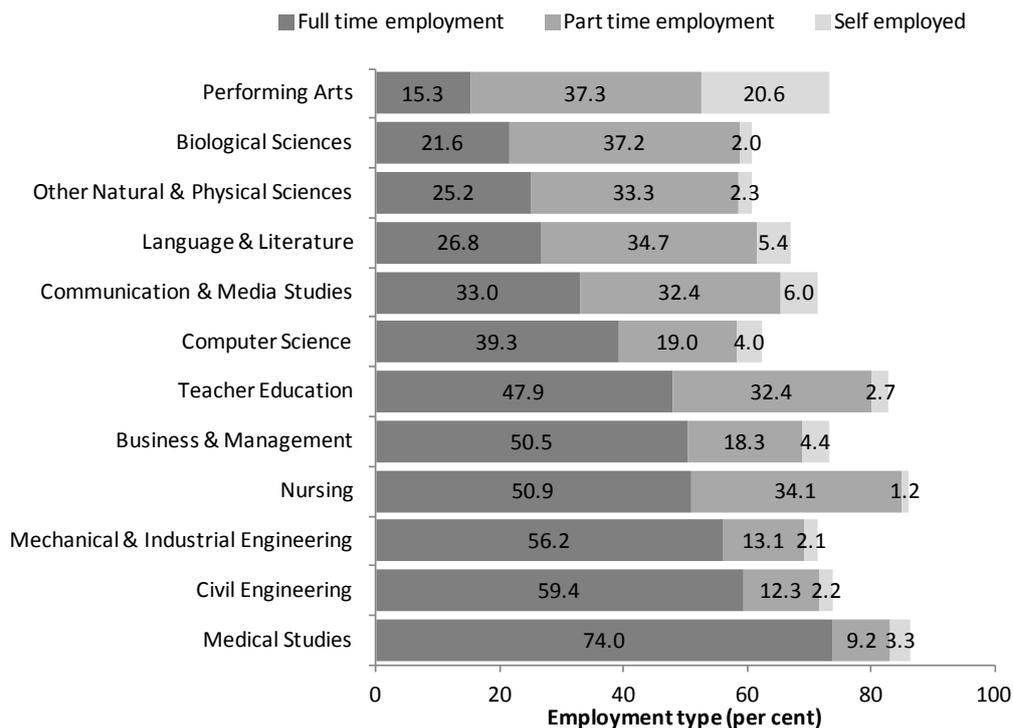


Figure 4 Employment outcomes, Graduate Destinations Survey 2013 (per cent)
(Data supplied by the Department of Education)

To provide more specificity, the Australian Research Council’s Centre of Excellence for Creative Industries and Innovation established a creative trident of occupations (Higgs et al., 2008). The trident describes workers as *specialist creatives* employed in core creative occupations within creative industries (e.g., ballet dancers); *embedded workers* employed in core creative occupations within other industries (for example, musicians working in therapeutic settings); or *support workers* employed in other occupations within the creative industries (for example, workers undertaking retail or business support roles). Creative workers undertaking work predominantly outside the trident are defined as ‘*non-creative workers*’.

One of the anomalies of the creative trident model is that teaching is deemed a ‘non-creative’ activity, which situates this important and valuable use of artistic skills outside a creative worker’s creative portfolio of work. The creative trident also categorises individual workers within a single trident mode, which means it cannot capture the complexities of creative work (Higgs et al., 2008). We can, however, use the trident modes in combination with empirical studies.

Eighty-three percent of the respondents in Bennett et al’s 2014 study engaged in more than one trident mode, and only 36% held a single role. The figure below illustrates the intersections of specialist, support, and embedded and non-creative roles. This enables us to look inside a “portfolio” of creative work. It also provides a useful talking point with

students, who can be challenged to think about potential specialist, support, embedded, teaching and other roles that align with their interests and strengths.

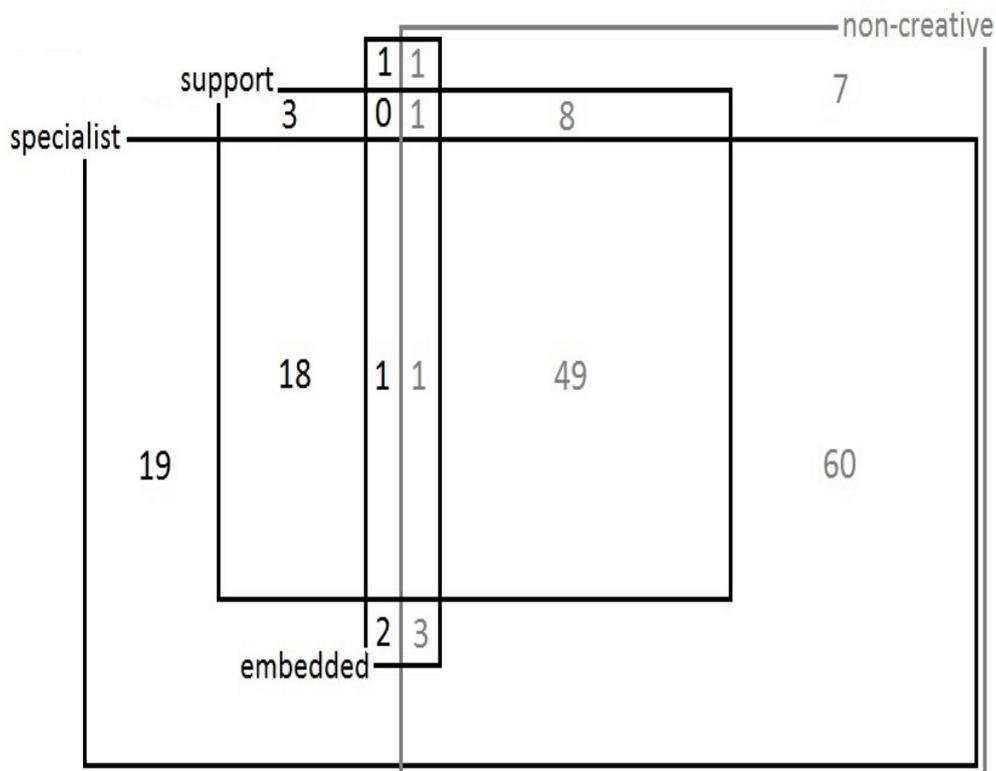


Figure 5 *The intersections of work across the creative trident (Bennett et al., p. 164)*

The lack of nuanced data has led to empirical research including analyses of “good and bad” work (Fitzgerald, Rainnie & Bennett, 2011); old and new sectors including digital economies (Hesmondhalgh & Baker, 2011); the characteristics of creative work (Smith & McKinley, 2009); flexibility and autonomy (Banks, 2010); and creativity itself (Hesmondhalgh, 2008). Studies such as these are starting to reveal the realities of work in the creative industries sector, including for graduates.

Where do graduates go? Focusing in the performing arts

According to the Australian Government, there were almost 21,000 creative arts graduates in 2013 and 20% of these graduates were employed on a full-time basis (Graduate Destination Survey data, 2013). In other sectors we might imagine this 20% to be in full-time jobs with a single company; however, this sector is a little different!

Whilst some music and dance graduates hold full-time positions in the major arts companies, these positions represent a small minority of performing artists. In Australia there are less than 600 full-time company positions for instrumentalists, 50 for vocalists and just under 200 for dancers (Bennett, 2008; 2009); artists who come from other countries

hold approximately one-third of these positions. Researchers in the US, Europe and the UK report similar situations (see Beeching, 2010; Perkins, 2012).

Many arts graduates aspire to make a living through the creation or expression of their creative work. Because full-time arts company employment is rare, employment for many graduates comes in the form of creative work undertaken outside of the arts and creative sectors: Cunningham and Higgs (2010) determined that in 2006, 65.5% of dancers or choreographers and 40.5% of musicians, singers or composers are employed principally outside the creative industries.

Bennett et al's study (2014) has found no significant differences between the average number of hours in each role; between sexes; or between employed/self-employed workers, contractual or casual work. This suggests that complex and changeable patterns of work exist throughout the career life cycle and across creative disciplines and genres.

Creative workers manage their own careers, work typically in small firms and on an ad-hoc basis, gain employment through networks, and stay employable by learning new skills and ensuring that they were visible to the market. These are the most likely work patterns for graduates.

Performing artists are up to five times more likely to be self-employed than other workers, and in the case of professional composers self-employment stands at 93% (Throsby and Zednik, 2010). This high rate of self-employment is similar in other countries and also in city-based studies (cf Center for an Urban Future, 2008). Moreover, one in five creative workers are understood to hold a "day job" entirely unrelated to the creative industries (Throsby and Zednik, 2010).

Approximately 85% of dance artists are registered as a business and the Australian dance sector consists "almost entirely of dance artists for whom independent project-based work is the norm and the inclusion of non-performance roles almost inevitable" (Bennett, 2009, p. 28).

Similarly, Burns (2007, p. 12) has found that UK dance artists typically include "arts related work such as teaching alongside their performance work and they often work in non-arts work in order to earn an adequate living". Vincs (2007, n. p) has labelled this work "hybridity", and the term is a useful tool when discussing work and career with students.

Things to think about

Although performing arts work is complicated, it is also exciting for graduates who are informed and work ready. Here are some things to think about:

1. Employability for arts graduates most often demands the skills required to create and manage a small business and the resilience to negotiate work that is intermittent, complex and challenging;
2. Arts graduates are likely to hold multiple concurrent roles within a changing portfolio of work. They are likely to undertake some or all of their work within another economic sector;
3. Arts graduates are likely to work as sole traders or in small firms, working in casual and project-based employment with little security. They are likely to supplement their creative work with more secure work that is unrelated to the arts or that involves related roles such as teaching. Teaching needs to be positioned as a valuable and “successful” outcome;
4. Arts graduates are likely to obtain work through networks, often because tight budgets and timeframes lead employers and clients to hire those they know and trust.
5. Throughout the career lifecycle, arts graduates will need to remain employable by learning new skills, ensuring they are visible to the market, and knowing the market and those within it; and
6. Arts graduates commonly report that they do not have these skills on graduation.

Asked what changes they might make to their formal education and training, arts alumni recommend the inclusion of small business skills, entrepreneurship skills, self-management skills and industry experience.

These aspects align with the findings of the OLT Commissioned project, and tools and resources within the toolkit are designed to help. Specifically, the toolkit resources help educators to address five key themes:

- Develop skills and knowledge;
- Develop self;
- Develop career awareness;
- Interact with others; and
- Navigate the world of work.

References

- Australian Bureau of Statistics. (2011). *Census data and analysis*. Retrieved March 30, 2015, from <http://www.abs.gov.au/websitedbs/censushome.nsf/home/data>
- ARC Centre of Excellence for Creative Industries and Innovation (CCI). (2013). *Australian Creative Economy Report Card 2013*. Brisbane: CCI.
- Banks, M. (2010). Craft labour and creative industries. *International Journal of Cultural Policy*, 16, 305-321.
- Beeching, A. (2010) *Beyond talent: Creating a successful career in music*, NY: OUP.
- Cunningham, S., & Higgs, P. (2010). *What's your other job? A census analysis of arts employment in Australia*. Melbourne: Australia Council for the Arts.
- Bennett, D. (2008). *Understanding the classical music profession: The past, the present and strategies for the future*. Aldershot: Ashgate Publishing Limited.
- Bennett, D. (2009). Dance careers: Beyond performance to the real world of work. *Journal of Dance Education*, 9(1), 27-34.
- Bennett, D., Coffey, J., Fitzgerald, S., Petocz, P, & Rainnie, A. (2014). Beyond the creative: Understanding the intersection of specialist and embedded work for creatives in metropolitan Perth. In G. Hearn, R. Bridgstock, B. Goldsmith & J. Rodgers (Eds), *Creative work beyond the creative industries: Innovation, employment, and education*. Cheltenham: Edward Elgar Publishing.
- Bennett, D., Richardson, S., & Mackinnon, P. (2015). *Enacting strategies for graduate employability: How universities can best support students to develop generic skills*. Sydney: Australian Government Office for Learning and Teaching.
- Burns, S. (2007). *Mapping dance: Entrepreneurship and professional practice in dance higher education*. York: Higher Education Academy.
- Center for an Urban Future. (2008). *Creative New York*. New York: City Futures Inc.
- Fitzgerald, S., Rainnie, A., & Bennett, D. (2012). Cultural Labour in Australia: Towards a Renewed Research Agenda. Proceedings, 26th *Australian and New Zealand Academy of Management Conference*.
- Graduate Careers Council of Australia. (2012). *Graduate destinations 2011: The report of the graduate destination survey*. Parkville: Graduate Careers Council of Australia.

- Higgs, P., Cunningham, S., & Bakhshi, H. (2008). *Beyond the creative industries: Mapping the creative economy in the United Kingdom*. London: Nesta.
- Hesmondhalgh, D. (2008). Cultural and Creative Industries. In Bennett, T., & Frow, J. (Eds), (pp. 552 – 570) *The Sage handbook of cultural analysis*. London: Sage.
- Hesmondhalgh, D., & Baker, S. (2011). *Creative labour: Media work in three cultural industries*, London: Routledge.
- Perkins, R. (2012). Rethinking “career” for music students: Identity and vision, In D. Bennett (Ed.), *life in the real world: How to make music graduates employable* (pp. 11-26). Champaign, Illinois: Common Ground Publishing.
- Smith, C., & McKinlay, A. (2009). Creative industries and labour process analysis. In McKinlay, A., & Smith, C. (Eds), *Creative labour: Working in the creative industries* (pp. 3-28). Basingstoke: Palgrave Macmillan.
- Throsby, D., & Zednik, A. (2010). *Do you really expect to get paid? An economic study of professional artists in Australia*. Melbourne: Australia Council for the Arts.
- Throsby, D. (2008). Creative Australia: The arts and culture in Australian work and Leisure. *Occasional Paper 3/2008*. Canberra: Academy of the Social Sciences in Australia.
- UNCTAD (2008), Creative economy report 2008. New York: UDCP.
- Vincs, K. (2007). Follow your heart and something will come: Subjective factors in the sustainability of early to mid career contemporary dance artists. In Vincs, K. (Ed.), *Proceedings of dance rebooted: Initialising the grid*, (pp. 1-15). Melbourne: Deakin University.

What do we know about the work of information technology graduates?

The 2013 Australian Graduate Survey collected data from 4,957 graduates from Information Technology and Computer Science degrees. Data was collected between four and six months after graduation. The breakdown of disciplines is shown in the table below.

Discipline	Number	Percentage
Information Technology	460	9.3
Computer Science	1,785	36.0
Information Systems	1,600	32.3
Other Information Technology	1,112	22.4

Population

Data was collected from graduates with the following characteristics:

Characteristic	Number	Percentage
Male	3,910	78.9
Female	1,044	21.1
Median age	26	-
First language English	2,189	44.2
First language Other	2,602	52.5
Graduate from undergraduate degree	2,971	59.9
Graduate from postgraduate degree	1,915	38.6

Overall outcomes

Status	Number	Percentage
Full-time work	2,131	44.0
Part-time work	1,088	22.5
Self-employed	205	6.6
Studying full time	688	14.3
Studying part-time	243	5.1

Overall, 44 per cent of graduates was working full time, 22.5 per cent was working part-time and 6.6 per cent was self-employed. In relation to studying, 14.3 per cent was studying full time and 5.1 per cent was studying part-time.

Employment outcomes

Of those 3,222 graduates who were working, whether part-time, full time or self employed, the largest area of employment was Computer System Design, accounting for 19.7 per cent of graduates. Other graduates were distributed across multiple employment areas. The chart below illustrates just those areas in which at least 1.5 per cent of graduates were employed.

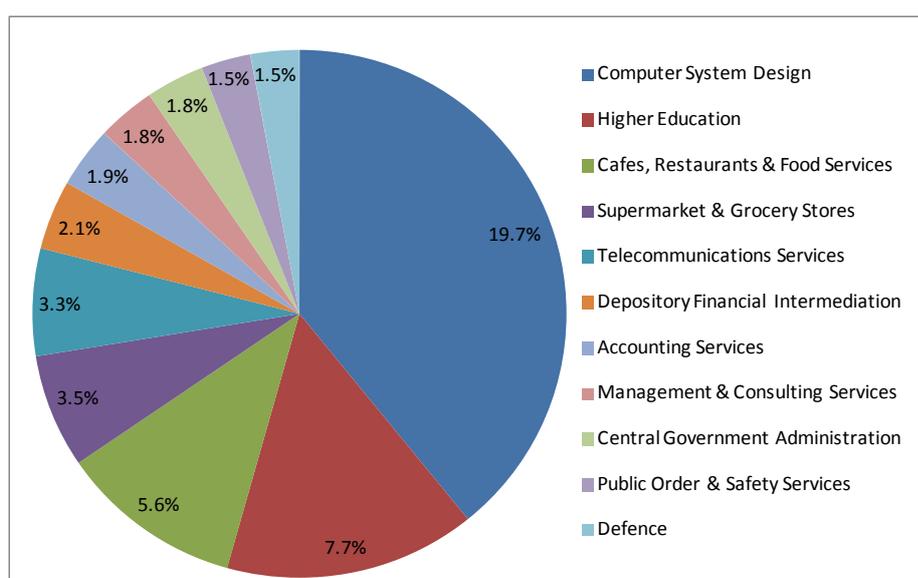


Figure 6: Sectors employing internet technology graduates, AGS, 2013 (n=3,222)

Further study

Of the 933 graduates who were undertaking further study, 68.3 per cent was in the field of Information Technology and 16.0 per cent was in the field of Management and Commerce.

More information?

For more information on the outcomes of graduates from Information Technology and Computer Science degrees at your institution, contact the Deputy-Vice Chancellor Academic.

What do we know about the work of biological sciences graduates?

The 2013 Australian Graduate Survey collected data from 4,227 graduates from Biological Sciences degrees. Data was collected between four and six months after graduation.

Population

Data was collected from graduates with the following characteristics:

Characteristic	Number	Percentage
Male	1,595	37.7
Female	2,632	62.3
Median age	23	-
First language English	3,112	74.6
First language Other	1,059	25.4
Graduate from undergraduate degree	3,461	81.9
Graduate from postgraduate degree	755	17.9

Overall outcomes

Status	Number	Percentage
Full-time work	958	23.0
Part-time work	1,679	40.3
Self-employed	83	3.2
Studying full time	1,750	42.3
Studying part-time	146	3.5

Overall, 40.3 per cent of graduates were working part-time, 23 per cent was working full time and 3.2 per cent was self-employed. In relation to studying, 42.3 per cent was studying full time and 3.5 per cent was studying part-time.

Employment outcomes

Of those 2,638 graduates who were working, whether part-time, full time or self employed, the largest area of main employment was higher education, accounting for 17.2 per cent of graduates. Other graduates were distributed across multiple employment areas.

The chart below illustrates just those areas in which at least 2 per cent of graduates were employed.

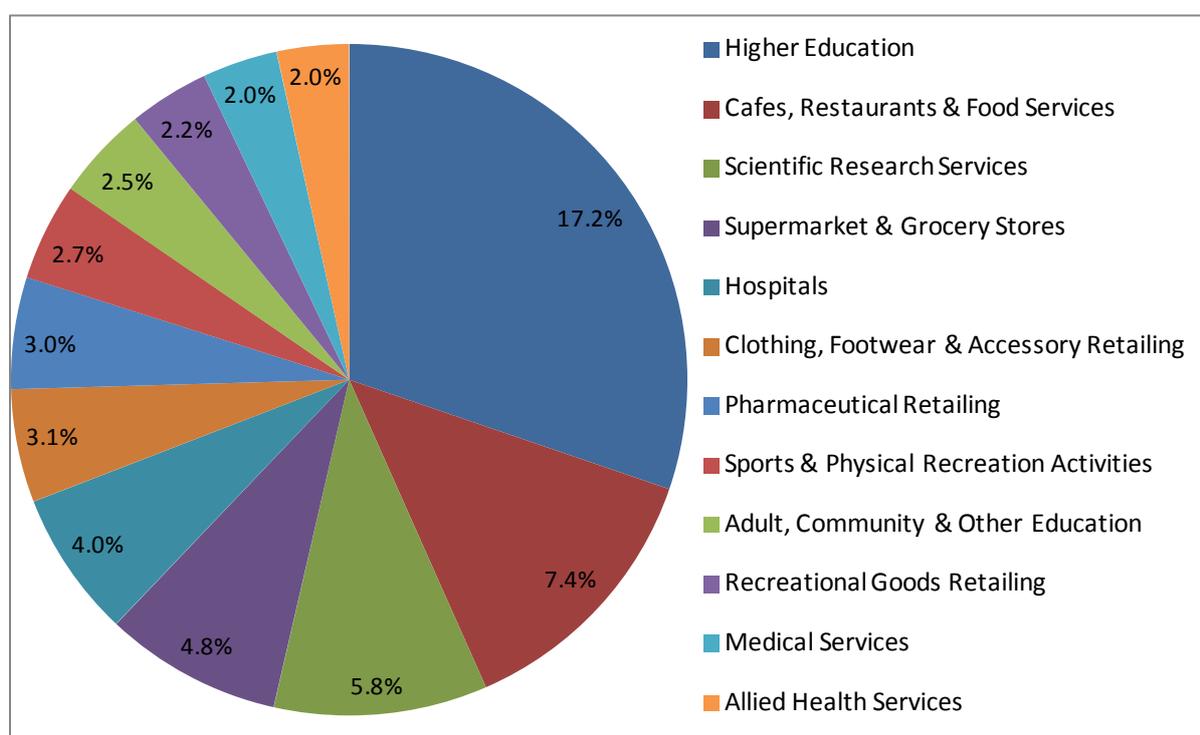


Figure 7: Sectors employing biological sciences graduates, AGS, 2013 (n=2,368)

Further study

Of the 1,897 graduates who were undertaking further study, 51.3 per cent was in the field of Natural and Physical Sciences (including Biological Sciences) and 32.3 per cent was in the field of Health.

More information?

For more information on the outcomes of graduates from Biological Sciences Degrees at your institution, contact the Deputy-Vice Chancellor Academic.

The broader context

The life sciences cover a broad range of disciplines involving the scientific study of living things. These include parts of the environmental sciences focusing on biology in ecological systems through to molecular disciplines such as biochemistry. The life sciences can be studied in a variety of contexts including relating to the environment or in support of clinical disciplines such as nursing, physiotherapy or paramedicine.

The life sciences are addressed through both degree with a professional focus and through general science degrees. Thus the degree to which employability is addressed varies greatly. Often life sciences are studied in a general degree, such as biomedical science, as preparation for graduate professional studies. This strategy is becoming more common with the adoption of the “Melbourne Model” of a general degree followed by graduate professional study.

Another consideration with the life sciences is that, outside the clinical professions, a substantial proportion of employment is directly related to higher education and research. This is borne out by the graduate outcomes for the life sciences where their single largest area of employment is higher education (17%). Beyond this graduates go into a multitude of industry areas—retailing and medical services being two examples.

Employability for life sciences in general degrees

The life sciences are characterised by poor levels of graduate full-time employment, high levels of continuing full time study and below average levels of relevance of their degree to the jobs they secure after graduation (Graduate Career Australia, 2013). The apparent poor employment outcomes for life science graduates are not new. McInnis, Hartley and Anderson (2000) reported the life sciences then had the lowest full time employment rates.

In the same survey McInnis et. al. (2000) also found that almost half of science graduates obtained professional or managerial jobs within one year of graduation. Another 20% had jobs at a technical level. And around 80% thought their job was an appropriate part of their career path. The majority of graduates remained within the general area of science: 70% of those employed were working for an organisation with a scientific focus.

However, more recent data from the 2011 census shows that people with a degree in the life sciences did not enjoy as good an employment outcome as those in technology, engineering, and mathematics as they were least likely of all science disciplines to be in professional or managerial employment (less than 60%) (Norton, 2013).

Despite the poor employment outcomes in the sciences there has been an increase in enrolments, which, according to Norton (2013) has been a result of government policy encouraging students to take up STEM disciplines. Advocates for science education, such as

the Chief Scientist, Ian Chubb, have argued graduate employment rates, as measured by the Australian Graduate Survey, are not adequate in judging generalist degrees where career outcomes are less clear than professionally oriented degrees (Ross & Hare, 2014).

There have been attempts to place the life sciences in a more industry-relevant context: several Australian universities, such as the University of Queensland, the University of New South Wales, Flinders University and Monash University, have run degrees with a vocational emphasis in the area of biotechnology (see Brack, Schmidt & MacKinnon, 2010). Anecdotal evidence has shown that these degrees have not enjoyed the popularity that degrees in biomedical sciences have. This probably reflects the relatively few positions in the biotechnology industry, together with the insufficiency of an undergraduate degree for the few industry positions that exist.

In another project conducted by Monash University, all biotechnology employers consulted, stated that they preferred to appoint science graduates with an honours degree (MacKinnon, personal communication). This was because the honours degree involves a substantial research project developing the research and other skills required in the scientific workplace. In the sciences, undergraduate research projects take the form of an “apprenticeship” in which a student is attached to a research laboratory and receives training from experienced members of the laboratory. The intensive nature of the project is one of its limitations. According to Brew and Jewell (2012) only up to 2,000 students across all disciplines engage in such activities annually. This represents a tiny proportion of the total enrolments in the life sciences. It is unlikely that there is capacity in the life science research sector to greatly increase this number. This means that a less intensive form of research activity would be necessary if it were to be more widely implemented.

Things to think about

1. When considering undertaking a life science degree, students should aware that the majority of life science graduates continue into further study. This can be graduate professional study, or it can be a research degree (usually preceded by an honours year). According to the graduate destination data there is no single clear professional tack for life science graduates.
2. An undergraduate degree alone is unlikely to lead to a career in science. A qualification including experience in scientific research may be required. At the minimum an honours year is required, but a higher degree by research (PhD) is not uncommon.
3. Most direct employment in the life sciences is associated with higher education and research. Again the graduate destination survey data shows no single large employment group outside of this sector.
4. General life science degrees will expose students to scientific research. At the end of a degree graduates will have good scientific knowledge and a good understanding of

research, but will have limited experience at doing scientific research. It is most likely that industry exposure will be limited to the scientific research laboratory.

5. According to our case studies, general employability skills are not prominent in general life science degrees. Our case studies suggest that extra-curricular activities including part-time employment and volunteering are important for employability skills development.

References

- Brack, C., Schmidt, L., & MacKinnon, P. (2010). Vignette 9: Interdisciplinary scholarship for novice students. *Interdisciplinary Higher Education: Perspectives and Practicalities*, 5, 239-254.
- Brew, A., & Jewell, E. (2012). Enhancing quality learning through experiences of research-based learning: Implications for academic development. *International Journal for Academic Development*, 17(1), 47-58.
- McInnis, C., Hartley, R., & Anderson, M. (2000). *What did you do with your science degree? A national study of employment outcomes for science degree holders 1990-2000*. Melbourne: Centre for the Study of Higher Education.
- Norton, A. (2013, June 21). A bubble about to burst: Why we don't need more maths and science graduates. *The Conversation*. Retrieved from <http://theconversation.com/a-bubble-about-to-burst-why-we-dont-need-more-maths-and-science-graduates-15007>.
- Ross, J. & Hare, J., (2014, June 21) Chubb slams claims of a graduate glut. *Australian*. Retrieved from <https://global-factiva-com.ezp.lib.unimelb.edu.au/sb/default.aspx?lnep=hp>

Appendix H - External evaluation

Evaluation Reflections

Curtin University – SP13-3258

Enacting strategies for graduate employability:

How universities can best support students to develop generic skills

Background

The aim of this project was to synthesise a significant body of research to advance understanding of students' attainment of employability skills. With a focus on action and embeddedness, the project included case studies with graduates and students transitioning from study into work, consulting widely with academic leaders, employers and teaching staff. Challenges for graduates of general degrees were of particular interest and as such the project concentrated on fields of study within the performing and visual arts, life sciences, humanities and computer sciences. Grounded in and supported by examples of best practice, the project utilised an action framework to engage and showcase best practice with employers, students, graduates and institutions. Training key stakeholders in a process of evidence-based change to employability skills development, it identified obstacles to excellence and proposed ways to overcome these.

Outcomes

The project was originally conceptualised as two phases, with discrete and overlapping activities in each phase. The intended outcomes for the first scoping phase were:

- Review of the relevant literature
- Student surveys
- Options paper for Phase 2
- Engagement of partners

The intended outcomes for second phase 2 centred on case study research and resource development including:

- National engagement and dissemination meetings
- Interventions
- Workshops

The guiding focus of the evaluation was to determine if the project's aims were achieved and outcomes delivered within budget and on time.

Evidence

The first interactions between the Project and Evaluation Teams were at the OLT workshop in April 2014 for all 2013 Strategic Commissioned Projects. Within the Graduate Employability Cluster area there were three different project teams including this one lead by Curtin University, Professor Dawn Bennett with partner organisations Australian Council for Educational Research (ACER), University of Melbourne, Flinders University, and University of Sydney.

In order to identify that the project's aims were achieved and outcomes delivered both formative and summative evaluation strategies were utilised. The Evaluation team was included in all project team and Reference Group communications. In addition a member of the evaluation team was a participant in virtual and face to face project team, reference group meetings and cluster meetings and was able to provide input and advice throughout the lifecycle of the project the evaluation team provided input and advice. There were regular monthly cluster meetings with all three project teams to which the evaluator was invited. In addition the Evaluator worked very closely with the Project Leader to provide support and guidance throughout the project.

The Evaluator found several key factors that contributed to the successful achievement of the aim and goals. These factors include:

- Regular meetings of the project team with the Evaluator from the beginning of the project, which were well supported by project plan updates and reports on activities. This ensured that the team were provided formative feedback to further enhance the proposed project outcomes.
- Project Manager allotted during the project lifecycle which assisted with project documentation and prioritising of team activities.
- Active and sustained communications between the partner institutions.
- Regular meetings with the three project teams in this graduate employability cluster area.
- Strong project management, as demonstrated in appropriate documentation.
- Individual meetings with the Project Lead and External Evaluator on regular touch points during the project.

Project Management

It has been documented that effective project management has the following elements:

- Identifying requirements,
- Establishing clear and achievable outcomes,
- Balancing the competing demands for quality, scope, time and cost,
- Managing the expectations of various stakeholders, and
- Adapting plans to overcome challenges.

It must be noted that predominantly the project members had never previously worked together. This necessitated a longer initiation/commencement phase for the project for team building to occur and for the team to settle into working relationships. There were a number of different individuals in the project management role and the appointment of Rose Knight from ACER as a dedicated Project Officer was a factor in the overall success of the project as well as the drive and commitment from the Project Leader Professor Bennett with support from Sarah Richardson. There were changes in team membership and responsibilities, including an original partner institution having to withdraw due to workload factors for project team members.

From a Project Management perspective then, while there were some initial challenges for this team they were successfully resolved and project then ran well to its ultimate success. Once the Project Management was bedded down there was effective and significant communication with all members of the project team, which enabled the Project Leader to focus on the research, workshops, data collection, resource development and outcomes.

This project team worked closely with the project evaluator and the two other OLT commissioned projects on employability. 'Cluster' meetings were held quarterly, rotating the location between RMIT, Curtin (at ACER in Melbourne) and Bond University. The agenda reviewed what was new, what was planned and discussed research design, approaches and questions. This allowed the three projects to follow their own paths but in a coordinated way. The impact of presentations was amplified by presenting together at a number of conferences and public seminars.

The strong leadership from Professor Dawn Bennett along with Sarah Richardson as Project Manager were key factors in the success of this project. They both demonstrated strong professional and positive commitment and kept everything and everyone on track. As mentioned above a member of the evaluation team provided formative evaluation and input throughout the project and was warmly welcomed as a member of the team.

Achievement of Outcomes

This key summative evaluation questions centred on the findings from the scoping study, case studies, surveys and national workshops. The key outputs were:

- Consultation with 470 stakeholders

- 1500 academics and practitioners participated in project presentations and events
- 1700 students and academics participated in workshops
- Resources trialled with 1500 students embedded into courses
- Ten vignettes produced from case study data
- 32 conference presentations to date

To date there have been six related academic articles submitted with further journal and conference publications planned for 2015 and 2016. Continuing as a result of this project will be:

- Continued development of the toolkit
- Analysis of a combined dataset of 1,095 responses from students in this and extant projects (Bennett, 2008, 2009; Bennett et. al., 2014; Male & Bennett, 2015)
- Initial agreement with nine national and international bodies to share project resources and link with the website
- A new international network of educators and leaders with whom toolkit development and collaborative research will extend the findings and impact

Summary

The project activities ensured that a large number of stakeholders (employer bodies, academics and students) were not only consulted in developing the findings, but they were also engaged with the critical question of how to increase employability outcomes for students.

On the whole it was a pleasure to work with this well led team that achieved not only its project outcomes but also extended impact in a number of areas. The relationships formed during this project will continue in the future.

Appendix I – Achievements Statement

The project ‘How universities can best support students to develop generic skills: Enacting strategies for graduate employability’ (SP13-3258) was led by Curtin University in partnership with the University of Sydney, The University of Melbourne, Flinders University and the Australian Council for Educational Research. The final report was delivered in March 2015. Project resources can be found at <http://graduateemployability.curtin.edu.au/>

The project aims were twofold: to increase understanding of critical issues in enhancing graduate employability in higher education; and to identify support for educators seeking to develop student employability. Key achievements and outputs include:

- Survey data from 415 students in three countries
- Case study data from 60 individuals (graduates, students, leaders, careers advisors)
- A [website](#) with a “toolkit” of resources for enhancing graduate employability
- Eleven employability workshops including a half-day workshop at the 2014 Bond University National Forum, a half-day workshop at the 2015 [Higher Education Research and Development Society of Australasia](#) (HERDSA) conference, and a half-day workshop and expert panel at the 2015 [International Society for the Scholarship of Teaching and Learning](#) (ISSOTL) conference (see [Appendix F](#) for project activities)
- Six academic papers by team members
- Presentations at 32 conferences and events including the RMIT [National Employability Forum](#), Bond University’s [Teaching and Learning Symposium](#), and the Joint CubeNet/VIBEnet/National Committee for Biomedical Sciences [Forum](#)
- Case studies with performing arts graduates developed into career “profiles” for Music Australia’s national [Music Journal](#), with negotiations underway for resource sharing with the UK-based [Incorporated Society of Musicians](#) and the [Department of Culture and the Arts](#), Western Australia
- Career development and sustainability adopted as a priority for Music Australia’s [National Music Industry and Careers Advisory Group](#)
- Refinement of tools and resources developed through Chief Investigator (CI) Bennett’s Australian Learning and Teaching [Fellowship](#) (2010), trialled with 1,700 students in 2014
- Industry snapshots and/or graduate outcomes summaries (Appendix G) and
- Aggregated data summaries for four institutions planning employability initiatives.

Moving forward:

- Continued development of the toolkit
 - Analysis of a combined dataset of 1,095 responses from students in this and extant projects (Bennett, 2008, 2009; Bennett et. al., 2014; Male & Bennett, 2015)
 - An international alliance to [enhance employability in music](#), launched March 2015
 - Initial agreement with nine national and international bodies to share project resources and link with the website
 - A new international network of educators and leaders with whom toolkit development and collaborative research will extend the findings and impact and
- A symposium on employability in science, technology, engineering, and mathematics (STEM) at the [LH Martin Institute](#) (June 2015).

Appendix J - Deputy Vice-Chancellor Certification

Certification by Deputy Vice-Chancellor

I certify that all parts of the final report for this OLT grant provide an accurate representation of the implementation, impact and findings of the project, and that the report is of publishable quality.

Name:Deputy Vice Chancellor, Academic.....Date: 22/09/2015.....