



## The capabilities that count for early professional success in Pharmacy: A case study of graduates, employer and course team perspectives

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### Abstract

This study gathered and analysed the perceptions of graduates, employers, and the course team regarding graduate capabilities required for early professional success in pharmacy and the extent to which these capabilities are demonstrated in new graduates. The Graduate Employability Indicator (GEI) surveys were administered online to gather stakeholders' perceptions about the Bachelor of Pharmacy offered at a large Australian university. The GEI asks graduates the extent to which their course experience contributed to achievement of the capabilities, and asks employers and course teams about the extent to which new graduates demonstrated the capabilities. This study also assessed the incentives and disincentives of the course team for assisting to develop work-related skills, attributes and personal qualities. In total, 95 graduates, 109 employers and 42 members of the course team participated in the survey. The findings indicated that graduates preferred earlier professional placement in the course. Employers identified communication and professional skills as the most useful capabilities for new graduates. Members of the course team identified benefits to the students, industry and university as the main incentives for developing graduate employability. Both employers and course team members perceived the use of technology demonstrated by the graduates as important, however the graduates perceived this as much less important compared to other capabilities. This study provided an evidence-based approach to engage the course team in curriculum renewal for the Bachelor of Pharmacy program. Data collected using the GEI tool provided valuable information for reshaping the curriculum structure.

Keywords: graduate capabilities, employability, perceptions, employers, teaching team, graduates

### Introduction

In an increasingly regulated environment, universities are facing enhanced accountability measures with the requirement to provide evidence of employability capabilities acquired by their graduates during their university experience. Government and industry are questioning the value of investment in higher education with a perceived deficit of graduates' preparedness for the workplace (Rudd, Swan, Smith, & Wong, 2007; Evan-Greenwood, O'Leary, & Williams, 2015). The demand for improvements in the sector requires universities to provide evidence of quality assurance and employability outcomes. With heightened focus on the employability capabilities of graduates, institutions are placing greater emphasis on curriculum reform.

## *Curriculum Reform*

The University in which this research was conducted embarked on a curriculum reform strategic project several years ago where an evidence-based approach was employed to highlight the strengths and expose gaps in the curriculum. The review involved the interrogation of pertinent data, which revealed how the degree needed to change to address issues related to quality. The University adopted constructive alignment (Biggs, 2003), embracing an outcomes focused paradigm where curriculum reflected what students will be able to do upon completion, and how their accomplishments will be evidenced. Outcomes are aligned to graduate capabilities ensuring relevant and contemporary learning experiences evidenced by authentic assessment profiles.

Clearly defined graduate attributes are essential for producing graduates with the skills necessary to be proficient employees and contributors to society (Ewan, 2009). The ultimate educational outcome of an undergraduate pharmacy curriculum, is to produce graduates who have the knowledge, skills and attitudes to practice as a pharmacist. To ensure this, the World Health Organization stated in its document entitled 'The Role of the Pharmacist in Self-Care and Self-Medication' that:

*Undergraduate pharmacy curricular should be reviewed and revised to ensure that students learn about the relevant aspects of information management and technology, behavioural sciences, and communication and health problem solving* (The World Health Organisation, 1997, p. 12).

The boundaries of universities need to be permeable, where engagement with industry partners is intentional, informing curriculum development and contributing to the student experience (van Rooijen, 2011; Ferns, Campbell, & Zegwaard, 2014). Furthermore, accreditation of degree programs by professional industry bodies is integral to a high quality and relevant curriculum. According to Ewan (2009) the process of professional accreditation provides 'external validation' of university programs.

Lifelong learning is recognised as a graduate capability that ensues beyond the walls of the educational institution. Learning is a continuum where career development learning is strengthened and nurtured through employment. Graduates are frequently critical of the disconnect between the university curriculum and the workplace (Evan-Greenwood et al., 2015). In response to this, higher education institutions are focusing on a quality student experience with a move away from didactic models of teaching and learning, to an integrated approach where theoretical aspects of the discipline are blended with practical experience.

## *Staff engagement*

In accordance with the Australian Pharmacy Council Accreditation Standards (Standard 11) for pharmacy programs in Australia and New Zealand, staff are required to plan, implement and evaluate the curriculum (Australian Pharmacy Council, 2014, p. 11). Staff should be capable of delivering contemporary practice, whilst coping with, and shaping future practice. It is critical that there are adequate numbers of academic staff with pharmacy registration, thereby ensuring the authenticity of the curriculum. Furthermore, it is important that the course team is involved in the ongoing design of the curriculum, in consultation with industry stakeholders. This approach ensures that the pharmacy degree remains relevant and produces work-ready graduates.

## *Accreditation standards for Pharmacy*

As the pharmacist role has moved from the supply of products to include the delivery of patient care, it appears that the greatest challenge for pharmacy educators is to ensure their pharmacy curricula remain relevant and work-ready focused. Singleton (2015) states:

*All too often, students possess great discipline-specific knowledge but lack the skills essential to thrive in increasingly competitive and complex work environments in*

*today's world. Employers are requiring skills that not only build upon traditional core content knowledge, but also include critical thinking and problem-solving skills, information and communication skills, interpersonal and self-directional skills, creative behaviors, inquisitive habits of mind, and the skills to utilise 21st century tools* (p. 6).

To this end, teaching and learning practices which are designed to overcome the problems of students trying to find the practical link between fragmented studies and 'real-life' are essential. 'Accreditation Standards for Pharmacy Programs in Australia and New Zealand' (Australian Pharmacy Council, 2014) mandates that all courses provide experiential learning opportunities, and that these include placements in a community and hospital pharmacy. Under Accreditation Standard 7, it is a requirement that *Formal relationships exist with health care providers, practitioners and services to facilitate access to appropriate experiential placements* (p. 9).

### *Early exposure to clinical practice*

Early exposure to clinical practice develops student competence through demonstrating how knowledge is integrated and applied in various practice settings, enabling learning from role models, and experiencing interdisciplinary and team approaches in the provision of health care. Studies have shown that practice-based learning leads to an increase in empathy towards people with chronic diseases, enhanced self-confidence, and the development of a professional identity among students (The World Health Organisation, 2006). Learning from experienced practitioners, whether it is in the classroom, during simulations or through clinical practice, is seen as an invaluable means of acquiring professional socialisation.

## **The study**

This study gathered and evaluated the perceptions of graduates, employers, and the course team, regarding graduate capabilities required for early professional success in pharmacy, and the extent to which capabilities are demonstrated in new graduates. The study also assessed the incentives and disincentives of the course team to develop work-related skills, attributes and personal qualities of graduates.

## **Methods**

This investigation employed a mixed methods approach using a blend of quantitative and qualitative data. The qualitative data set complemented the numerical measures by enabling the respondents to freely express thoughts and opinions in an unstructured manner, thereby providing clarity of perceptions from a personal perspective. Through using a mixed methods design, the qualitative data provided a deeper understanding of the findings ascertained through the quantitative data collection and analysis (Creswell, 2012).

Data was collected through the administration of the Graduate Employability Indicator (GEI) surveys which were previously developed and validated (Oliver & Whelan, 2011). This instrument comprises a suite of three online surveys which gather the perceptions of graduates, employers and course teams in relation to the teaching, assessment, achievement and importance of employability skills in specific courses. Survey responses provided evidence of the following stakeholders' perceptions of:

- **graduates with up to five years' experience** - the extent to which their course experience contributed to their achievement of the capabilities and overall work-readiness, and the importance of the capabilities to professional success;
- **employers** - the extent to which graduates demonstrated the capabilities and their overall work-readiness, and the importance of the capabilities to graduates' professional success;

- **the course team** - the extent to which graduates demonstrated the capabilities and their overall work-readiness, the importance of the capabilities to graduates' professional success, their own confidence in teaching and assessing the capabilities, and personal incentives and disincentives for assisting students to develop work-related skills.

The 14 capabilities in the GEI were drawn from Item 12 in the Australian University Survey of Student Engagement (AUSSE) (Coates, 2009) which was derived from Item 11 in the National Survey of Student Engagement (NSSE) widely used in the United States (Kuh, 2001). The GEI asks graduates of up to five years 'To what extent did your experience during this degree contribute to your development in the following areas?' Further it asks employers and course teams 'To what extent do new graduates generally demonstrate each of the following?' In addition, the GEI also questions the stakeholder groups about their perceptions of importance: 'How important do you think each of the following is to the employment success of new graduates of this degree?' Response categories for all items match the AUSSE and the NSSE: namely Very little; Some; Quite a bit; or Very much. Results are reported as percentage agreement with each response category. Table 1 shows the 14 capabilities.

**Table 1: Graduate Capabilities**

Abbreviated title	Full text in survey
1. Knowledge	Work related knowledge and skills
2. Writing	Writing clearly and effectively
3. Speaking	Speaking clearly and effectively
4. Thinking	Thinking critically and analytically
5. Quantitative	Analysing quantitative problems
6. Using ICT	Using computing and information technology
7. Teamwork	Working effectively with others
8. Independent Learning	Learning effectively on your own
9. Intercultural Understanding	Understanding people of other racial and ethnic backgrounds
10. Problem-solving	Solving complex, real-world problems
11. Values & Ethics	Developing a personal code of values and ethics
12. Community Engagement	Contributing to the welfare of your community
13. Industry awareness	Developing general industry awareness
14. Social contexts	Understanding different social contexts

The GEI Surveys also gathered qualitative information from each of the stakeholder groups. Graduates are asked:

- What were the best aspects of this degree in developing your skills for employment?
- How could the degree be changed to improve your skills for employment?

Employers are asked:

- What skills, attributes and personal qualities do you consider to be the most useful for new graduates in this field?
- Which (if any) skills, attributes and personal qualities of new graduate attributes would you prioritise for improvement?

Course teams are asked:

- What do you see as the main incentives for teaching staff to assist students to develop work-related skills, attributes and personal qualities?
- What do you see as the main disincentives for teaching staff to assist students to develop work-related skills, attributes and personal qualities?

- What do you see as your role in assisting students to develop these attributes, skills and personal qualities?
- What sort of staff development opportunities would increase your confidence to teach and assess work-related skills, attributes and personal qualities?

The GEI Surveys were administered online for the Bachelor of Pharmacy. The surveys were opened on 8<sup>th</sup> September 2010 and 15<sup>th</sup> October 2012. The Alumni Office emailed the survey to graduates on behalf of the researchers. The Head of School was approached to contact employers and relevant networks to optimise the likelihood that industry stakeholders would respond to the survey. A link to the survey was emailed to all staff with teaching responsibilities in the Bachelor of Pharmacy. Staff also attended an information session where an explanation of the GEI was provided and the value of the stakeholder data in informing the curriculum review process outlined.

## Results

### *Demographic data*

In total, 460 graduates were contacted and 95 responded to the survey, representing a response rate of 20.7 per cent (although it is not possible to calculate a definitive response rate because the number of 'live' email addresses in the alumni database is unknown). Graduate demographic information is provided in Table 2. The graduate respondent group was predominantly female, aged under 25, and up to two years post-graduation. The majority of respondents were enrolled at an Australian campus and working full-time. All but two were in employment related to their degree. Of those not employed, the majority had previously worked in an area related to their degree.

**Table 2: Graduate Demographic Details (n=95)**

Question	Possible Responses	n	%
<b>Gender</b>	Male	34	35.8
	Female	59	62.1
	No answer	2	2.1
<b>Age</b>	25 or younger	58	61.1
	26-35	33	34.7
	36-45	2	2.1
	45 or older	1	1.1
	No answer	1	1.1
<b>Years since graduation</b>	1	36	37.9
	2	20	21.1
	3	15	15.8
	4	14	14.7
	5	9	9.5
	No answer	1	1.1
<b>Employment</b>	Full-time	70	73.7
	Part-time	15	15.8
	Not employed	9	9.5
	No answer	1	1.1

Employers were contacted by the Head of School. In total, 109 employers responded, although a response rate cannot be calculated as the initial number of employers contacted is not known. The respondent group was predominantly male employers, most were in the position of owner of a small to medium enterprise in the health and community services sector. More detailed employer demographic information is provided in Table 3.

**Table 3: Employer Demographic Details (n = 109)**

Question	Possible responses	n	%
<b>Position in organisation</b>	Executive Manager	17	15.6
	Middle Manager	9	8.3
	Owner of a small-medium enterprise	80	73.4
	Other	3	2.8
<b>Type of organisation</b>	Small-medium enterprise	95	87.2
	Public sector	9	8.3
	Large private sector enterprise	4	3.7
	No answer	1	0.9
<b>Organisation located in</b>	Australia or New Zealand	108	99.1
	No answer	1	0.9
<b>Sector</b>	Health and Community Services	72	66.1
	Retail Trade	37	33.9
<b>Gender</b>	Male	73	67.0
	Female	34	31.2
	No answer	2	1.8

In total, 42 members of the course team responded to the survey. Two thirds of the respondents to the course team survey were female, and the majority had recent industry experience. Almost half of the respondents were employed on a sessional or casual contract with the remainder evenly divided between fixed term and continuing contracts. Almost one third of the respondents had three years or less university teaching experience, while half indicated that they had more than seven years university teaching experience. Detailed course team demographic information is provided in Table 4

**Table 4: Course Team Demographic Details (n=42)**

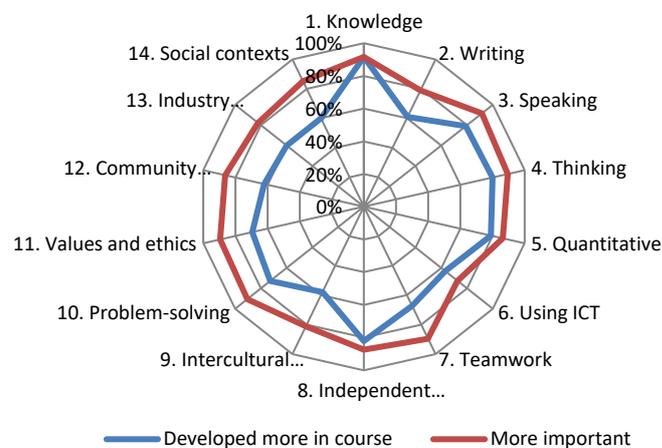
Question	Possible responses	n	%
<b>Type of contract</b>	Full-time continuing contract	13	30.9
	Part-time continuing contract	0	0.0
	Full-time fixed contract	4	9.5
	Part-time fixed contract	7	16.7
	Sessional/casual contract	18	42.9
<b>Years teaching at university</b>	3 years or less	14	33.3
	Between 4 and 7	8	19.0
	More than 7	20	47.6
<b>Extent of industry experience</b>	More extensive (5+ years)	30	71.4
	Moderately extensive (1 to 5 years)	9	21.4
	Less extensive (< 1 year)	3	7.1
<b>Recency of industry experience</b>	More recently	23	54.8
	Moderately recently	13	31.0
	Less recently	6	14.3
<b>Gender</b>	Male	10	23.8
	Female	32	76.2

## Quantitative Results

### Graduates

In general, graduates were less likely to report that capabilities were more developed than they were to perceive the same capabilities were more important (Figure 1). The greatest

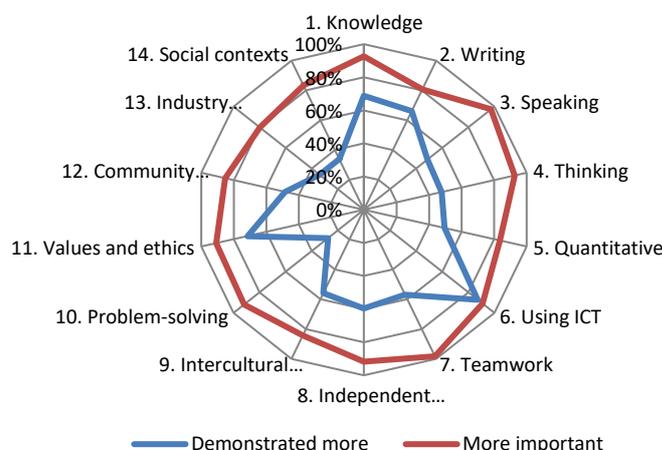
discrepancies between importance and extent of development were in 'intercultural understanding', 'contributing to the welfare of your community' and 'understanding different social contexts' with a difference in percentage agreement between more important and more developed of 23 per cent to 25 per cent.



**Figure 1: Comparison of Graduate Perceptions of the Extent the Degree Experience Contributed to Capability Development (percentage agreement with 'quite a bit' or 'very much') with the Importance of those Capabilities (percentage agreement with 'quite' or 'very important')**

### Employers

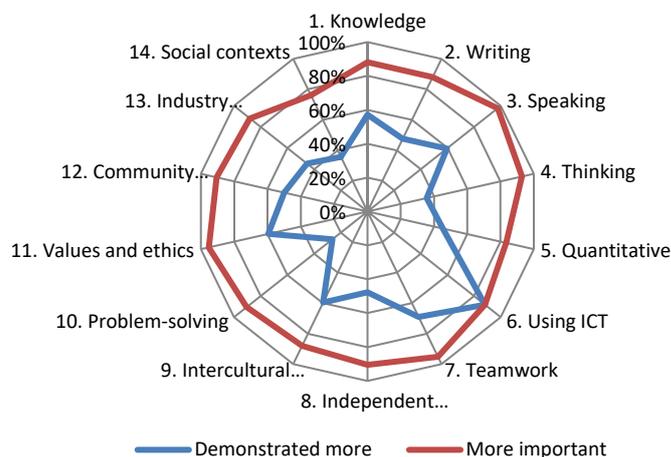
Figure 2 shows a comparison of employer perceptions of extent and importance: that is, the *extent* to which the capabilities are demonstrated (percentage agreement 'quite a bit' or 'very much') versus the *importance* of each (percentage agreement 'quite a bit' or 'very important'). Ideally, the two data lines would be in close proximity, indicating that what is perceived as important is developed to a similar extent. The figure shows employers perceived that 'using computing and information technology' was commonly demonstrated by graduates, but most other capabilities were deemed to be more important, but less demonstrated. The greatest discrepancy between importance and extent of development was in 'problem solving' with a difference of 64 per cent agreement. A difference of 45-49 per cent was observed in 'speaking', 'thinking', 'industry awareness' and 'social contexts'.



**Figure 2: Comparison of Employer Perceptions of the Extent Graduates Demonstrate each Capability (percentage agreement with 'quite a bit' or 'very much') with the Importance of the Capabilities (percentage agreement with 'quite' or 'very important')**

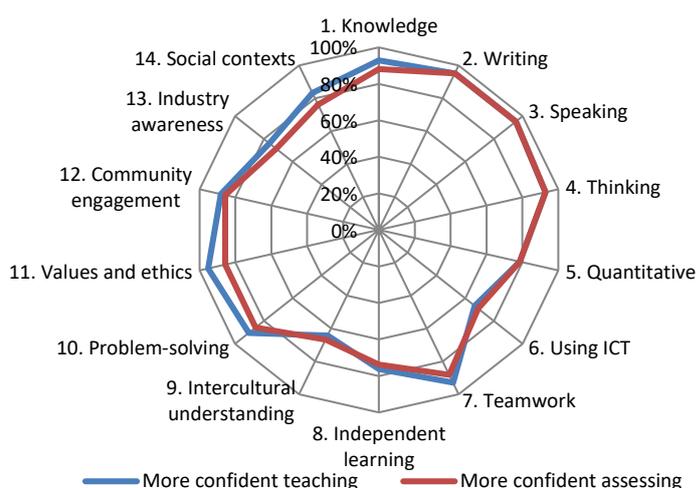
### Course Team

As with employers, members of the course team perceived that ‘using computing and information technology’ was adequately demonstrated by new graduates (Figure 3). Discrepancies were evident in most other capabilities and closely reflect employers’ perceptions with the greatest discrepancy between importance and extent of development in ‘problem solving’ (64% difference of agreement).



**Figure 3: Comparison of Course Team Perceptions of the Extent Graduates Demonstrate each Capability (percentage agreement with ‘quite a bit’ or ‘very much’) with the importance of capabilities (percentage agreement with ‘quite’ or ‘very important’)**

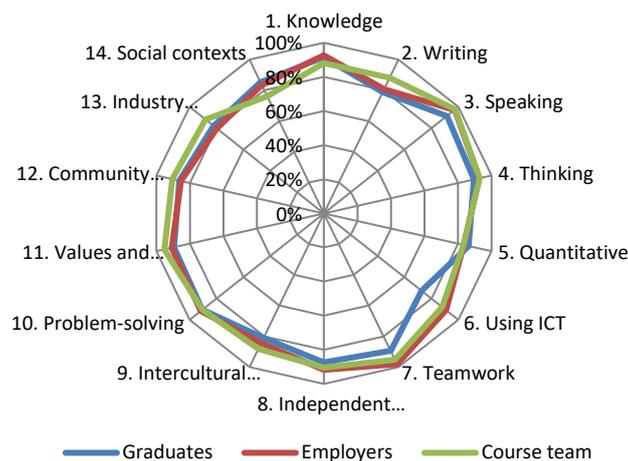
Figure 4 presents a comparison of course team perceptions of their confidence in teaching and assessing each capability (percentage agreement with ‘quite confident’ and ‘very confident’). Members of the course team expressed high levels of confidence in teaching and assessing most capabilities.



**Figure 4: Comparison of Course Team Confidence in Teaching and Assessing each Capability (percentage agreement with ‘quite’ or ‘very important’)**

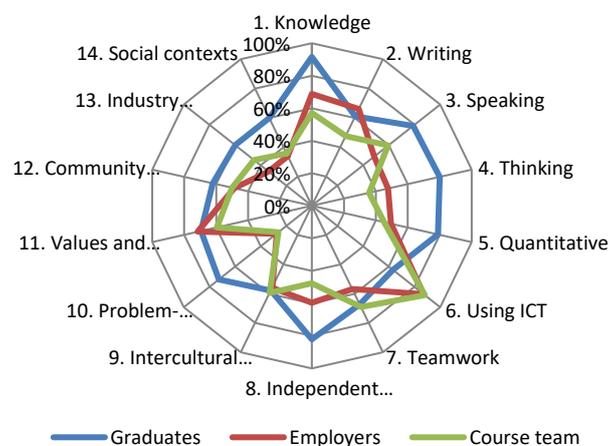
## Comparison of stakeholder perceptions

Figure 5 presents a triangulation of the stakeholder groups' perceptions of the capabilities that are most important for professional success. The figure shows that the three stakeholder groups agree on the level of importance for most capabilities. Discrepancies in the range of 20 per cent were seen in relation to using computing and information technology. Both the employers and course team perceived that 'using computing and information technology' was important to the success of a professional career and graduates demonstrated the capability, although graduates deemed it less important.



**Figure 5: A Comparison of Graduate, Employer and Course Team Perceptions of Capabilities Perceived as More Important to Early Professional Success (percentage agreement 'quite' or 'very important')**

Similarly, Figure 6 shows a comparison of perceptions of the capabilities demonstrated more commonly by graduates (according to employers and course teams). The figure shows close similarity between employer and course team perceptions. Employers and course team perceived that 'using computing and information technology' was commonly demonstrated by graduates. In contrast graduates perceived they demonstrated all other capabilities to a greater degree than employers and the course team. Capabilities including 'thinking', 'problem solving' and 'quantitative' were perceived as not well demonstrated by graduates.



**Figure 6: A Comparison of Graduate, Employer and Course Team Perceptions of Capabilities Perceived as More Demonstrated or Developed (percentage agreement 'quite' or 'very much')**

## Qualitative Responses

### Graduates

Graduates were invited to provide free text responses to two items:

- What were the best aspects of this degree in developing your skills for employment?
- How could the degree be changed to improve your skills for employment?

In total 74 graduates provided qualitative response. Graduate comments on the best aspects of the degree identified the work placement in the final year and acquiring knowledge to facilitate their role as a pharmacist (Table 5).

**Table 5: Qualitative Comments by the Graduates on the Best Aspects of the Course**

Theme	Rank	Qualitative comments on best aspects of the course
Work Placement (47/74 respondents)	1	Qualitative comments very clearly illustrate that graduates highly value the fourth year work experience in form of placement – 66.2% of respondents, for example: <ul style="list-style-type: none"> <li>• <i>The many opportunities to partake in practical learning in the community/hospital. I found 4th year to be particularly beneficial in order to ready me for the graduate world, especially doing 3 rotations.</i></li> <li>• <i>Practical work experience at different pharmacies throughout final year of pharmacy degree benefited the development of skills and learned theoretical knowledge.</i></li> </ul>
Knowledge (14/74 respondents)	2	19.7% graduate respondents indicated they appreciate the theoretical and pharmaceutical knowledge acquired in the Pharmacy Course: <ul style="list-style-type: none"> <li>• <i>The scope it covers, from pharmaceutical knowledge to business knowledge to the science behind it to management skills</i></li> </ul>
Communication (7/74 respondents)	3	Graduates commented having the opportunity to gain confidence and further develop communication skill which is viewed as an important component of the profession as pharmacists – 9.9% of respondents: <ul style="list-style-type: none"> <li>• <i>Presentations and oral exams to polish communication skills</i></li> <li>• <i>Make me more confident in communicating and patient counseling</i></li> </ul>
Practical labs and tutorials (6/74 respondents)	4	Graduates also value the interactive tutorial and practical class: <ul style="list-style-type: none"> <li>• <i>Small tutorial groups and discussion groups helped to improve critical thinking and problem solving skills, which are very important in working as a pharmacist</i></li> </ul>

Graduates also valued the opportunity to develop communication skills to gain confidence in their role as pharmacists. Whilst graduates valued highly the work placement component of the course, they recommended an increase in practical components in the form of placement and work-related practical laboratories/tutorials (Table 6). Specific comments indicated a desire for more hospital placements and a placement earlier in the course. Some indicated a desire for more diversity in placements such as an international placement. Comments also related to the need for increased opportunities to apply knowledge, more exposure to

business, and learning experiences that focus on the social, ethical and psychological aspects in the role as pharmacist when dealing with medication to diverse cultures.

**Table 6: Qualitative Comments by the Graduates on Aspects of the Course which Need Improvement**

Theme	Rank	Qualitative comments on aspects of course which need improvement
More work placement (19/61)	1	<p>Graduates indicated that they would like opportunity for more placements and also for more hospital placement opportunity:</p> <ul style="list-style-type: none"> <li><i>I think we could incorporate more practical components into the course. I like the idea of working at different areas of pharmacy in final year of pharmacy. I think that should be continued as it had definitely helped me to gain the experience I need before I enter the workforce.</i></li> </ul>
Exposure to work placement in first year and restructure course to increase relevance in early years (10/61)	2	<p>Whilst majority of graduates comments are related to work placement, specific comment indicating a desire for an earlier introduction of work integrated learning was also indicated:</p> <ul style="list-style-type: none"> <li><i>More work place rotations, preferably beginning early in the degree coupled by more hands on case study in a real setting rather than theoretical knowledge</i></li> </ul>
More Hospital Placement (6/61)	3	<p>Graduates indicated that they would like opportunity for more placement and also for more hospital placement opportunity:</p> <ul style="list-style-type: none"> <li><i>It would have been good to get a hospital rotation but I realise there is just no room for the number of students. I would have preferred more, smaller rotations rather than 3 rotations all about 8 weeks long.</i></li> </ul>
Application of Knowledge (6 /61 respondents)	4	<p>Graduates commented they value having the opportunity to apply their knowledge and have desire for increased opportunity to apply knowledge in increase placement, practical lab and tutorials:</p> <ul style="list-style-type: none"> <li><i>Make it 5 years degree course and add more rotations since pharmacist need to practice and put his knowledge in to practice.</i></li> <li><i>Learn more practical components of pharmacy (counselling scenarios, disease states) earlier on in the degree so you can use this knowledge at your workplace.</i></li> </ul>
Business unit (4/61)	5	<ul style="list-style-type: none"> <li><i>Implementing more units on business development and more exposure to the profession in early years of study.</i></li> <li><i>The structure of the degree has already been changed- Primary care is now taught in year 1 instead of year 2 which allows students to fit in to their part-time work more easily. From 2011 the Fourth year students will have a choice in majoring in a business unit. I think that would help the graduates even more in their future employment.</i></li> </ul>

## Employers

Employers were invited to provide free text responses to two items:

- What skills, attributes and personal qualities do you consider to be the most useful for new graduates in this field?
- Which (if any) skills, attributes and personal qualities of new graduate attributes would you prioritise for improvement?

For convenience, these are referred to as Most Useful and Needs Improvement in this report. In total, 102 employers provided a qualitative response. Of the 102 employers, 94 perceived that professional skills and attributes were the most useful capabilities and 73 identified communication as among the most useful capabilities for new pharmacy graduates. The various aspects of professional attribute are indicated in Table 7.

**Table 7: Qualitative Comments by Employers on the Most Useful Attributes for New Graduates and Those which Need Improvement**

	Rank Most useful	Most useful of 102 respondents	Rank Needs improvement	Needs improvement of 102 respondents
<b>Professional skills</b>	<b>1</b>	<b>94</b>	<b>1</b>	<b>71</b>
(i) empathy		36		11
(ii) positive attitude, willingness to learn, enthusiastic		38		11
(iii) self-discipline, independent, time management, organisational skills		52		12
(iv) accuracy, attention to details, dispensing skills		15		3
(v) leadership, industry, business management		12		16
(vi) IT computer skill		3		1
<b>Communication skills</b>	<b>2</b>	<b>73</b>	<b>2</b>	<b>48</b>
(i) communication in terms of language and clear communication		72		49
(ii) ability to counsel and personal relation skill		32		20
(iii) teamwork - able to work and communicate as team		17		8
<b>Knowledge</b>	<b>3</b>	<b>34</b>	<b>3</b>	<b>17</b>
<b>Problem Solving/critical thinking</b>	<b>4</b>	<b>15</b>	<b>4</b>	<b>15</b>

Employers (34 of 102) also mentioned discipline specific knowledge and skills, and the ability to apply that knowledge in the workplace situation. Employers frequently mentioned

professional attributes, such as trustworthiness, empathy, flexibility and approachability. Other capabilities mentioned as the most useful for new pharmacy graduates by employers were organisational skills, leadership and business/management skills. Employer comments on the capabilities in need of improvement were similar to the comments made on the 'most useful' capabilities. Employers frequently mentioned communication skills (48 of 102), professional skills (71 of 102), and ability to apply knowledge (17 of 102) and critical thinking (15 of 102) as capabilities in need of improvement, along with leadership and management skills (Table 7). Following are some of the qualitative comments from employers on useful aspects and those in need of improvement for the Pharmacy profession.

*People skills in community pharmacy are essential. More importantly tailoring counselling to a particular person rather than a standard approach to all customers is vital. Most customers coming into pharmacy have a medical problem of some nature. Ability to smile and show empathy goes a long way towards helping them through their problems. Another essential skill is the ability to apply knowledge gained from University in a practical environment i.e. the ability to solve complex real problems.*

*New graduates are often lacking real life experience in retail, therefore, when being subjected to pressure from public and working environment, they feel disappointed and leave the career. They also need to gain confidence to face customers, but to do so, they need to equip themselves with updated knowledge and personal skills such as being emphatic, patient, listening skills, serving skills, communications skills and peer skills. In addition, they need to be able to integrate into the working environment, able to work with others. Ultimately, they need to have the heart and the will.*

*Ability to communicate with staff and patients, attention to detail and accuracy in all areas of their work and the confidence to go about their daily tasks independently. Work effectively as part of a team, willingness to help others and be proactive to complete tasks.*

*Clinical pharmaceutical knowledge, communication skills (verbal and written), organisation skills both personal and business focused and empathy with patients*

*I think community pharmacists need to be naturally caring of others, inquisitive, empathetic and lateral problem solvers. Excellent communication, especially active listening skills, are critical to provide the most appropriate counselling to the patient. The work can be extremely stressful, so being able to cope under pressure is essential.*

#### Course team

The course team members were invited to provide free text comments in response to the following:

- What do you see as the main incentives for teaching staff to assist students to develop work-related skills, attributes and personal qualities?
- What do you see as the main disincentives for teaching staff to assist students to develop work-related skills, attributes and personal qualities?
- What do you see as your role in assisting students to develop these attributes, skills and personal qualities?
- What sort of staff development opportunities would increase your confidence to teach and assess work-related skills, attributes and personal qualities?

For convenience, these are referred to as 'Incentives', 'Disincentives', 'Role' and 'Staff Development' in this report. In total, 21 members of the course team provided a qualitative response. Members of the course team identified benefits to the students, industry and university as the main incentives for developing graduate employability. Disincentives identified by the course team included time and workload constraints and student disinterest and capabilities. Members of the course team identified increased industry experience as a

potential staff development opportunity, along with workshops or training programs on teaching and assessment issues. Examples of staff comments include:

*Students need to know what is required to be a good pharmacist and become life-long learners. They will be the future healthcare workforce and drivers for change and need to have a passion to improve patients' quality of life through medicines and lifestyle interventions.*

*It is very satisfying to see students who take their studies seriously and with much curiosity of what lies beyond their unit scope. It shows that the student will be able to excel well in the workplace environment as they would be able to handle the stress of learning new things and coping with various people at their workplace.*

## Discussion

This paper reports the comparative perspectives of graduates, employers and course team members on the graduate capabilities required for professional success in pharmacy and the extent to which the capabilities are demonstrated in new graduates. There is currently an increased focus on the value and importance of graduate capabilities, with evidence linking achievement of capabilities to professional success (Scott, 2005; Phillips, 2014). The importance of work integrated learning (WIL) as a mechanism for students to gain work-ready skills through the application of theoretical concepts in an authentic workplace scenario, is of national significance and considered an imperative by employers (Smith, Ferns, & Russell, 2014). The National WIL strategy (Australian Collaborative Education Network, 2015) is the result of collaboration between the Australian collaborative Education Network (ACEN), peak industry bodies and Universities Australia, and highlights the political and economic drivers to promote WIL across the higher education sector. WIL continues to be the focus of several research projects, many of which are driven by industry corporations (Edwards, Perkins, Pearce, Jacob, & Long, 2014). Partnerships with industry are fundamental to successful WIL and pivotal to successful student outcomes (van Rooijen, 2011).

Consistent with employers' perceptions, the graduates perceived all attributes as important and believed they needed to be more developed in the curriculum with the exception of discipline knowledge. Most evident from this research is that graduates value highly the work placement during their course of study, with numerous comments on the need for more placement opportunities. This aligned with the employers' perceptions that new graduates require improved professional skills and work experience. Employers expressed the need for 'More work experience and more practice for patient counselling skills because communication is the key to success in the future pharmacy career'.

Whilst the course team was confident in both teaching and assessing, they perceived deficiencies in the Pharmacy course. This provided an impetus for review of the curriculum and implementation of a new course structure. Some of the discrepancies included the preparation of graduates for employment from the point of enrolment. The Pharmacy Practice component needed a stronger pillar within the course structure. Graduates also commented on the need for earlier exposure to industry and for 'counselling experience from first year'. Despite being reaccredited for another five years in 2013, the course team at the School of Pharmacy had undertaken significant curriculum restructuring in response to feedback from graduates, employers and course team. The revised course structure for the Bachelor of Pharmacy introduces increased Pharmacy Practice components and a new Pharmacy Practice unit in the first semester of first year to enable early exposure to professional practice and opportunity for experiential learning. The professional skills perceived by all stakeholders as one of the most important for successful graduates was communication skills. The new course structure also depicts a stronger and better defined Pharmacy Practice component which is horizontally and vertically integrated with the therapeutics and pharmaceuticals pillars.

This approach will enhance the application of discipline knowledge into practice, another area reported as requiring improvement by all stakeholders.

An interesting and significant finding was the perception of the importance of information and communication technology (ICT), and the extent to which the use of technology was demonstrated in graduates. Both the course team and employers perceived that the use of technology was important and was extensively demonstrated by graduates. However graduates perceived this as much less important compared to other capabilities. It is envisaged that this discrepancy in perception on the use of technology will diminish with the introduction of a more visible course structure, where the use of technology including using the dispensary tool, MyDispensary, and other simulation activities to enhance experiential learning in the new Bachelor of Pharmacy curriculum.

With the introduction of the new course structure, there is an opportunity for future research to investigate and gather evidence to determine whether changes to the student experience in response to the present research findings, positively impact on graduate outcomes. Research could further explore the value and effectiveness of curriculum review in response to stakeholders' feedback and importantly with a change in the education environment including the increasing use of ICT and simulation technology.

## **Outcomes of GEI**

Data collected from this study provided valuable information to assist with curriculum renewal. The introduction of the new course structure for the Bachelor of Pharmacy aimed to develop a stronger Professional Practice stream, has been accepted well by industry as is evident through consultation with the Pharmacy Advisory group.

The GEI was used to inform curriculum renewal activities at the university through gathering feedback from stakeholders on employability outcomes of graduates and how the degree program could be strengthened by embedding work integrated learning. The instrument provided valuable intelligence from the perspectives of graduates, employers and teaching staff and provided the graphic evidence to prompt discussion and consultation on quality curriculum development (Ferns, 2012). As an example, some graduates commented that the Business unit should be a core unit instead of an elective. In response to this, the course team has introduced a core business component in the new course structure.

## **Limitations of the GEI and further research**

Whilst the GEI was useful for the purposes of this study, the survey questions are too generic and could be customised to investigate current and specific issues relating to the pharmacy profession, including the importance of introducing a more significant business component in the course.

The quantitative and qualitative data for this study were all derived from the online survey tool. In the future, a focus group discussion with stakeholders could be explored to strengthen evidence to inform curriculum development. Benchmarking with other Bachelor of Pharmacy degrees in other institutions, both within Australia and internationally, could also strengthen decisions around curriculum design.

The GEI provided interesting and useful data of graduate, employer and course team perceptions of the 'capabilities that count' for early professional success, the extent to which this course contributes to their development (from the graduates' perspective), as well as the extent to which new graduates generally demonstrate achievement of the capabilities. They also provide evidence about course team perceptions of their confidence in teaching and assessing the capabilities.

As with all surveys of this nature, the data are most useful when there are representative numbers of valid responses. The GEI results reported here have limitations in this regard:

- The potential respondents were limited to those graduates and employers who could be contacted using a 'live' email address;
- The online survey responses did not require user authentication;
- Responses are limited to quantitative and qualitative online responses;
- The data are lagging in the graduate and employer perceptions relate to graduates and course experiences of up to five years past; and
- The survey tool is generic and needs modification for pharmacy programs to allow benchmarking across institutions to address accreditation standard requirements.

In spite of these limitations, the results reported here provide broad indications of disparity in perceptions of the capabilities that count, and the extent to which they are developed in the course, and identified areas which might be further investigated using other research methods such as focus groups and stakeholder interviews. This conclusion focuses on where the greatest disparities might lie: it focuses on the potential gaps using the capabilities that count most (that is, what's very important), and where most improvement might be needed.

## Conclusion

This study demonstrated that there were discrepancies in stakeholders' perceptions of the level of attainment of key capabilities required of new pharmacy graduates to fulfil their professional roles, but not the importance of the capabilities. In response to this stakeholder feedback, changes have been made to the Bachelor of Pharmacy curriculum to enhance professional socialisation, and provide greater opportunities for the acquisition of knowledge and skills needed in contemporary pharmacy practice.

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