

Supporting student transition to a futures-orientated professional identity

Final Report 2013

Teaching Fellowship

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Executive summary

In Australia, allied health workforce education and training has evolved in response to changing societal needs. As individual health disciplines aspired to a professional status, a university curriculum model of educating the “health professional” emerged from programs which were formerly based on hospital or other industry-based apprenticeships. These curriculum models have evolved over time, with varying emphases on practice elements.

In the case of professionally accredited programs, such as pharmacy, physiotherapy and speech pathology, curriculum needs to address knowledge, skills and attributes defined through professional competencies. For example, pharmacy professional competencies include *“the practice of pharmacy in a professional and ethical manner”, “pursue life-long professional learning and contribute to the development of others”, “manage work issues and interpersonal relationships”* (Pharmaceutical Society of Australia, 2010). Health Workforce Australia has recently proposed that leadership development be embedded in undergraduate and postgraduate training (Health Workforce Australia, 2012). This is particularly relevant when we consider the changing roles of pharmacists in their contributions to provision of healthcare, for example the management of chronic illness and the changing models of health care.

In the positioning of universities as key to Australia’s prosperity, the development of generic capabilities (also described as attributes and qualities) has been a focus for much curriculum development (Bowden, Hart, King, Trigwell, & Watts, 2000). In this context, curriculum needs to be developed around the reality that students are being prepared for a future that is largely unknown. In the health context it has been claimed that *“...education providers must offer an environment and process that enables individuals to develop sustainable activities appropriate for a continuously evolving organisation”* (Fraser & Greenhalg, 2001). Student transition into the role of the working professional is critical. It has been argued that *“...it is not enough for learners merely to understand new concepts or acquire new skills: this does not produce skilful practitioners. Instead, they are to transform as people, to become architects, psychologists, biologists, etc., who enact ways of being in the world appropriate to the practice in question that are also responsive to changing practice contexts”* (Dall’Alba & Barnacle, 2007). There is overlap between some professional competencies and generic capabilities, for example lifelong learning. Curriculum to support transition needs a framework and strategic scaffolding, where professional competencies and graduate capabilities such as those listed above are internalised (Heathcote & Taylor, 2007). One question which needs to be asked at this time is whether there are “gaps” between currently articulated graduate capabilities and competencies and those needed to ensure graduate transition into the workplace.

Previous work by the Fellow in the ALTC-funded project “Pharmacy Quality Indicators for Best Practice Approaches to Experiential Placements in Pharmacy Programs” demonstrated a lack of all but the superficial notions of professionalism, and no obvious references to leadership or lifelong learning, in the experiential placement components of Australian pharmacy programs. Graduates from pharmacy programs in Australia are not eligible for registration until they have completed a twelve month internship. Their development of these competencies during the internship is enhanced by strategic scaffolding (Heathcote & Taylor, 2007; Kuhn, 2007).

There are clearly identified needs around the interrelated issues described above for health professional programs:

- curriculum which is appropriate for a “super-complex” world (Barnett, 2000)
- nurturing of capability development
- development of strategic scaffolding to support internalisation of capabilities and competencies to support student transition to the workplace

The key research questions which guided the Fellowship were:

- Are there “gaps” between currently articulated graduate capabilities and professional competencies and those needed to ensure transition into the workplace?
- Has attention been paid in the literature to curriculum approaches which address competencies such as professionalism, leadership and lifelong learning?
- Can curriculum approaches around these competencies be developed and embedded?

The primary tangible outcomes of the Fellowship are:

- An evidence-based overview of pharmacy graduate transition to the workplace, disseminated through publications and presentations.
- A framework to promote curriculum innovation around distributed leadership, disseminated through publications and presentations.
- An increase in the profile of the Fellow in the national context, with consequent invitations to participate in working groups and review tasks, contributing to development of national curriculum initiatives.

Current pharmacy curricula in Australia appear to prepare graduates for transition to the workplace. There are concerns about the pharmacy workplace and the need for change. There have been slow changes in pharmacy practice such that the technical roles of procurement and dispensing are now enhanced through cognitive services, which focus on pharmacists' application of specialised knowledge. Questions such as; *Are pharmacists the most over-qualified and under-utilised of professionals?* have been posed (Anon, 2006) describing the *...disconnect between how pharmacists are trained and how most of them work* (Anon, 2009).

It would appear that there is a need to develop curriculum for pharmacy and indeed all of the allied health sciences and nursing around professionalism, lifelong learning and leadership. Comprehensive literature searching did not provide clear understanding of such terms with respect to any of these professions.

A framework was developed for curriculum initiatives around distributed leadership. The challenge has been to demonstrate how this framework can be applied within curriculum. This has been achieved within the curriculum of one pharmacy program, although this approach is potentially applicable across other disciplines.

The original nomination noted that the Fellowship would undertake needs-based curriculum development to afford scaffolding of professionalism, lifelong learning and leadership skills. The outcomes were to be materials and a framework for staged achievement targeted to pharmacy academics; it was anticipated that these would be adaptable to other health programs. This key outcome was refined into several core activities, leading to identified deliverables.

Activity 1: Extensive searching of peer reviewed and grey literature for an understanding of concepts such as professionalism, leadership and lifelong learning and curriculum approaches which addressed these competencies.

Activity 2: Identifying gaps between currently articulated graduate capabilities and graduate level professional competencies and those needed to ensure pharmacy graduate transition into the workplace.

Activity 3: Designing and implementing effective curriculum approaches that develop professionalism, leadership and lifelong learning, including the development of a framework for staged achievement.

The deliverables of the Fellowship are:

- An evidenced overview of pharmacy graduate transition to the workplace.
- An evidenced overview of pharmacy graduate understanding of lifelong learning.
- A framework to promote curriculum innovation around leadership.

Deliverables of this Fellowship have been disseminated through meetings, workshops and publications (page 28).

The major findings and conclusions of this work are:

- Curriculum initiatives around professionalism, leadership and lifelong learning are poorly elaborated in the literature.
- Transition to the workplace in the case of graduates from one program appeared seamless.
- Pharmacy graduates from one program focused on lifelong learning as a formal activity, suggesting that inclusion of explicit learning opportunities which address multiple opportunities for learning- formal, non-formal and informal, should be included in pharmacy curriculum.
- A curriculum framework to promote student development of distributed leadership capacity was developed. Trialling of the model, in an online format was successful in one program.

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Chapter 1: Curriculum approaches for professionalism, leadership and lifelong learning.

Has attention been paid in the pharmacy literature to curriculum approaches which address competencies such as professionalism, leadership and lifelong learning?

A search was conducted within health science databases to identify articles that discussed curriculum for the teaching of professionalism, leadership and lifelong learning. The following databases were searched: CINAHL, Medline, PubMed, Scopus and Google Scholar. Combinations of the following search terms were used: curriculum, pedagogy, professionalism, professional behaviour, leadership, lifelong learning, pharmacy, medicine and allied health. The search was limited to articles written in English since 1990. The references of identified articles were also reviewed to identify additional literature. Articles were read to identify approaches to the teaching of professionalism, leadership and lifelong learning.

Discussion of the concept of professionalism is mostly restricted to the United States which has produced extensive literature, generally in the form of commentary on pharmacy and professionalism. However, very few Schools of Pharmacy in the United States or elsewhere appear to formally teach it let alone assess students' internalisation of professionalism (Rutter & Duncan, 2010).

Leadership in pharmacy is frequently referred to, although again mostly in the form of commentary from the United States. Although the following reflects a view from the United States: *"The 'elephant in the room' is that the practice of pharmacy in many settings remains far from the vision called for universally by pharmacy leaders."* (Kerr et al., 2009), the comment could well be made in relation to Australian community pharmacy practice. There have been a large number of studies which have examined the reasons as to why the practice of pharmacy is not meeting expectations with respect to uptake of cognitive services (the use of specialised knowledge to promote effective and safe drug therapy, for example health promotion, clinical interventions and medication management services). Australian researchers examining facilitators of practice change, with specific focus on the implementation of cognitive services and related programs, have identified communication, leadership and teamwork and task delegation amongst themes relating to change process (Roberts, Benrimoj, Dunphy, & Palmer, 2007).

With few exceptions, Pharmacy literature refers to notions of positional leadership (Zilz, Woodward, Thielke, Shane, & Scott, 2004), however there is an extensive body of literature which argues that leadership is in fact a distributed activity *"...leadership is everyone's business"* (Kouzes & Posner, 2002). Community pharmacies, generally small to medium business enterprises (SME), provide professional services; consequently community pharmacies have tensions of professional and commercial demands (Ottewill, Jennings, & Magirr, 2000). Leadership in the SME is generally perceived as positional, however more recently a "blended" model, which brings together both distributed and positional leadership, has been developed (Kempster, Cope, & Parry, 2010). Distributed leadership as opposed to positional (owner/manager) leadership (Doucette & Koch, 2000) has received little attention. However from a practice context, a report from Danish pharmacies (Kaae, Søndergaard, Stig, & Traulsen, 2010) has found highly varied levels of individual staff empowerment. They also found no direct link between a leading role for the owner and sustained delivery of cognitive services.

In Australia, the majority of pharmacists practice in a community pharmacy, a SME, where distributed leadership may ebb and flow with positional leadership (Kempster, et al., 2010). Acknowledging the slow progress towards a vision for pharmacy practice, the role of universities in preparing graduates for a distributed leadership role is imperative.

The development of lifelong learning skills for pharmacists is also regarded as a curriculum imperative; however few curriculum initiatives around this are described. Lifelong learners are

depicted as knowing how to learn and knowing how to think clearly (Halpern, 1998). A recent Australian report reviewed the theoretical basis for the attributes of the lifelong learner, describing the lifelong learner as possessing many attributes including communication skills, knowledge and understanding about the domain of endeavour, personal well-being and society. The lifelong learner is also described as a collaborative learner, an active investigator, possessing critical and creative thinking skills, having confidence, ethical attitudes and behaviours, resilience to cope with, adapt to, and grow through change and ambiguity (Lawson, Askill-Williams, & Murray-Harvey, 2006).

Measurement approaches to lifelong learning come from work in learning design. Through use of structural equation modelling of student experience questionnaire data, which focuses on constructs including critical thinking, problem solving and communication skills, teaching approaches requiring students to actively engage with learning have been identified as contributing to graduate attributes such as the ability to pursue lifelong learning (D Kember, 2009; D. Kember, Leung, & Ma, 2007; D. Kember & Leung, 2005). Growth in life-long learning orientations has also been interrogated through use of the “need for cognition scale” (Cacioppo, Petty, & Kao, 1984) and is suggested as being facilitated by instruction that includes opportunities for reflection and perspective-taking and that provides students with opportunities to positively interact with diverse peers (Mayhew, Wolniak, & Pascarella, 2008).

Chapter 2: Graduate transition to the workplace

Background

Is there evidence of “gaps” between currently articulated graduate capabilities and graduate level professional competencies and those needed to ensure graduate transition into the workplace?

The international literature sheds little light on the experience of the transition from student to pharmacy employee (Smith & Pilling, 2007) and there is limited consensus about how to measure this objectively (Moriarty, Manthorpe, Stevens, & Hussein, 2011). With respect to entering the pharmacy profession, studies from the United Kingdom across a number of pharmacy schools have identified graduates’ high levels of perceived preparedness for performance of pharmacists’ tasks and for a professional approach to tasks (Willis, Hassell, Seston, & Hann, 2009). Reports from a New Zealand study focused on student satisfaction with a new degree program and also gathered data from intern preceptors. Preceptors commented that factors such as individual graduate’s life skills and personalities would influence their adaptability to the workplace (Kairuz, Case, & Shaw, 2007). In Australia little work has been reported from the students’ or graduates’ perspective regarding professional or workplace preparedness.

Professionally accredited Australian university pharmacy programs equip graduates to enter the profession as interns, who after completing pre-registration training may apply for registration; however ideally they also equip them to enter the world of working in pharmacy. The transition for a much larger group of health graduates, nurses, has been examined across a number of countries, although the literature on the experience in Australia is still limited (Smith & Pilling, 2007). Issues for newly graduated nurses include; discrepancies between what graduates understand about nursing from their education and their experiences in the ‘real’ world of healthcare service delivery; a lack of clinical knowledge and confidence in skill performance; relationships with colleagues; and workload demands (Duchscher, 2008) and reflect the importance of bridging undergraduate curriculum with escalating workplace expectations (Duchscher, 2009). Transition stress has also been identified in the intern medical year (Prince, Van de Wiel, Van der Vleuten, Boshuizen, & Scherpbiers, 2004) and consequently a number of curriculum approaches such as a framework to support learning in clinical attachments, building collegial relationships and authentic assessment have been identified (Tweed, Bagg, Child, Wilkinson, & Weller, 2010). Managing transitions is not unique to healthcare. There is extensive literature on different aspects of the university to profession transition including teaching (Corcoran, 1981) and business degrees, in the latter case curriculum innovations such as “capstone units” have been introduced (Bailey, Oliver, & Townsend, 2007).

In pharmacy, as in many other professions, short knowledge half-life means that practitioners need to know how to handle paradigm shifts - which principles remain, which to move to the background and how to integrate new developments with existing skills and knowledge (Boshuizen, 2003). To be able to continue to learn independently, professionals need to develop self-directed and lifelong learning skills at a very early stage (Boshuizen, 2003). Lifelong learning can be described as a philosophy recognising that learning occurs throughout one's lifespan and includes professional continuing education. Within this context, a lifelong learner can be described as one who is conscious of him/herself as a learner throughout life, sees new learning as the logical way to handle problems, is highly motivated to carry out learning throughout life, and welcomes change/challenge as providing opportunities for new learning (Hanson & DeMuth, 1991). Lifelong learning has also been viewed as an element of professionalism (Hojat, Veloski, & Gonnella, 2009; van de Camp, Vernooij-Dassen, Grol, & Bottema, 2006). Aside from the professional imperative to develop lifelong learning skills in pharmacy graduates, there are also imperatives from universities. For the past two decades, universities across Australia have generally recognised that in addition to essential discipline knowledge, graduate attributes (also called generic attributes, generic skills, graduate outcomes and similar terms) such as communication skills and lifelong learning are also important. It is argued that graduate attributes are most effectively acquired within the context of disciplinary knowledge (Bowden, et al., 2000).

Traditionally, lifelong learning is divided into three categories, namely formal learning, non-formal

learning and informal learning. *Formal learning* - as related to lifelong learning – is traditionally an extension of formal schooling consisting of learning that occurs within an organised and structured context (Tissot, 2000, 2004). *Non-formal learning* is not provided by an education or training institution and does not typically lead to formal certification (Commission of the European Communities, 2000). It consists of learning embedded in planned activities that are not explicitly designated as learning, but which contain important learning elements. As such it is structured in terms of (personal) learning objectives, learning time, or learning support and is intentional from the learner's point of view (Colardyn & Bjornavold, 2005). Finally, *informal learning* is learning that "results from daily life activities related to work, family or leisure (Commission of the European Communities, 2000). It is not structured (in terms of learning objectives, learning time and/or learning support). Typically, it does not lead to certification and is non-intentional (Colardyn & Bjornavold, 2005). It can, thus, be regarded as a tacit form of learning through everyday activities.

The link between informal and non-formal aspects of lifelong learning and effective pharmacy practice has been evidenced through work demonstrating positive associations between job performance and learning outside formal training programs. Leading edge pharmacy practitioners undertake more self-questioning and information seeking and are more likely to report learning from colleagues, health professionals, general practitioners, customers and their own mistakes (Tann, Blenkinsopp, & Platts, 2001).

The question of whether pharmacy students develop the skills for lifelong learning has not been clearly determined. This is complicated by the absence of literature examining how pharmacists themselves conceptualise lifelong learning.

Methodology

A series of one-on-one semi-structured interviews with intern pharmacists was undertaken with participants from one Australian state. The interns were recruited during training workshops, in which approximately one hundred interns participated. Interns received written details of the project and an invitation to participate in interviews. Interns were undertaking internships in community pharmacies or hospital pharmacy departments and had been engaged in their programs for approximately five months at the time of interview. The interviews were conducted by an independent, experienced interviewer who was not a pharmacy academic. Interviews involved encouraging the interns to provide a narrative of their transition experiences and describe the improvements they would like to see in the pharmacy program from which they had graduated. Interviews were not focussed, but aimed to gather wide ranging views. Graduates were also asked about their understandings of the concept of lifelong learning. Questions were asked in response to interviewee responses, probing additional detail. Notes of the discussion were taken by the interviewer and were collated and analysed through manual coding processes involving sorting; reading through information to make general sense; recording of thoughts about the data and organising material into categories (Strauss & Corbin, 1998). Participants were recruited and interviewed until no new information emerged, achieving saturation. Ethics permission was obtained from the Human Research Ethics Committee of the university from which the interns had graduated.

Outcomes

A total of 17 interns were interviewed. Nine of the interviewees were working in community pharmacies, eight in hospitals.

Newly qualified pharmacists had a very positive view of the undergraduate curriculum in preparing them for practice; not one interviewee described the transition to work in terms related to "...anxiety, insecurity, inadequacy and instability" as has been described for newly qualified nurses (Duchscher, 2009).

There was also no reference from the interviewees to a lack of theoretical pharmacy knowledge or skills. A number of interviewees referred to some aspects of their transition experiences; for

example '...getting into the working situation...working in a different environment' (intern 16, community). Themes and subthemes emerged from analysis of the data, as described below.

The first transition sub theme identified was that of learning about relationships within the workplace and the need for interns to interest themselves in other people. The comments below capture this.

*...and the politics of any workplace...that's definitely a transition...You're much more guarded about how you conduct yourself
I'm learning how to interest myself in people...find a rapport with different people
...You have to be considerate of other people...
(at uni)...there's only so much you can tell people about what's an appropriate way to talk to people
...each week you meet new people...you have to small talk a lot. You've got to show interest in people*

The second subtheme was that of understanding differences between passing exams to satisfy degree requirements and the complexity of working, including adjusting to work hours. Comments included:

Uni never took up that much of my time

...bit of a shock ...adjusting to working hours...I did work part-time (25 hours) at uni ...but full time, that was a bit of a shock initially

It's a big change from going to uni...you can go to lectures if you want... there's different expectations... You have to turn up to work, you can't make excuses...we have to go to work full time

At uni ...at the end of the day, pass exams and pass tests to do what I had to do. Work... you're expected to know more than things for a test, you're working towards a different goal...(difficult) to transition from a uni lifestyle into understanding the expectations of being an employee...It's hard to prepare yourself for that transition

There were suggestions that the periods of placement in the program be increased.

What's most lacking in pharmacy compared to other health disciplines...only two one month placements is not enough... you need more placements

Those two one month work experiences...that was good...it was a good way of exposing you to work fulltime...before I only worked three hours a night, not nine to five

If you hadn't had much exposure...if you hadn't had a job, it might be difficult

Other aspects of the university program apart from placements were referred to as having been important in preparing the graduates for practice. Role plays and case studies in the third and fourth year clinical pharmacy subjects were referred to by a number of students. Comments included:

Professional practice (was) good, it involved a lot of role plays...gives case studies that put us in real situations.....helps us to see the common drug interactions and how to deal with the situation

Prior to conducting this study the Fellow had anticipated that new professionals would describe aspects of linking theoretical knowledge to practical application as challenging for them during their transition (Benner, Tanner, & Chesla, 1995; Eraut, 1994) given the differences between being in a university as compared to a practice environment (Burke, Jones, & Doherty, 2005). The interview strategy for the work outlined in this paper enabled interviewees to describe these aspects if appropriate, however no comments regarding specific professional knowledge or skills were made. Instead, issues of workplace relationships, adjusting to work hours and understanding differences

between university assessments and performing in a workplace were identified. It may be that these interns had experienced only a limited requirement for application of theoretical knowledge in the practical pharmacy work setting at that point of their internship. This may be peculiar to Australian pharmacy practice or specific to work as opposed to placements as part of a degree program. Studies in Australia have indicated that the linking of theoretical knowledge to activity in clinical pharmacy placements is viewed by students, academics and clinical placement preceptors as contributing to quality clinical placements (Stupans, McKaige, & Owen, 2011). Additionally, there is evidence for this linkage in Australian clinical pharmacy placements (Stupans, et al., 2011). Similarly, studies in Finland have indicated that many students felt they were able to link their theoretical knowledge to their activity in clinical pharmacy placements (Katajavuori, Lindblom-Ylänne, & Hirvonen, 2006). The concept of only limited application of theoretical knowledge in the practical pharmacy work setting needs to be considered further in the light of current practice in Australia which is heavily based on drug distribution and in which practicing pharmacists have found the implementation of, for example, cognitive services, to be challenging (Roberts, et al., 2007).

The comments made by some respondents regarding the benefits of having worked previously and about the brevity of the clinical placement period are similar to those from New Zealand graduates (Kairuz, et al., 2007) who suggested that those who had worked part-time as students in community pharmacy were better prepared to undertake their internships, also commenting that the placements arranged by the university were too brief.

Pharmacy graduates from this particular Australian university appear to be prepared for the world of pharmacy work. The concept of “transition shock” or “transition stress” described for recent nursing graduates (Duchscher, 2008) medical interns (Prince, et al., 2004) and for other professionals transitioning to the workplace was not apparent. There were no perceptible curriculum gaps regarding application of university knowledge to the ‘real’ world of practice.

Within the discussion of lifelong learning the new graduates acknowledged that there is constantly new information coming to light and so continued learning is required.

...making sure that I'm always aware of the new drugs...patient safety, making sure you're practising within standards, rules and regulations....Facing the challenge as the picture of pharmacy changes... being aware of the different dynamics and variables and the challenges and taking up opportunities...knowing where to go if you need information

the more you learn...the more you know you don't know...When you read the Australian Pharmacist there's a lot of new things you don't know...You keep up to date...There are so many new drugs coming out...customers are relying on you...

it's hard to be professional if you don't know what you're talking about...

The intern period was described as a period of intensive learning.

You have to be a learner as an intern

...continually building up the knowledge that I've got from uni

Although all graduates were asked specifically about lifelong learning, only one addressed issues of informal lifelong learning.

On the job...learning from those around me...I'm keeping a diary now...if I make a mistake, I'm jotting it down...I'm doing that now

Lifelong learning was viewed as being the same as continuing professional development.

Conferences (expert guest speakers – input and questions, up to date resources. NPS (National Prescribing Service) news and updates helpful even if not counting towards credits, you get updated about new medicines & side effects. Subscriptions (to) Australian Pharmacist, JPPR (Journal of Pharmacy Practice and Research)

We have the ENRICH (Australian Continuing Professional Development, CPD) program that's compulsory...read from journals, study, attend lectures...basically you have to self-study

Future plan for lifelong learning...subscriptions...NPS, Medscape...if it's there you're more likely to read it... seminars, conferences, workshops

happy that the PSA (Pharmaceutical Society of Australia) has increased CPD points...(this) will encourage pharmacists to become more involved in continuing education ...We are professionals and it should be self-driven.... There are a lot of resources out there...(I'm a member of SHPA (Society of Hospital Pharmacists)...they gave a good support base...Working in hospital they have presentations, projects and teaching seminars

Will use CPD plan ...hopefully I'll be organised to do it systematically throughout the year...read journals

Resources that could be accessed to provide lifelong learning were described. These resources were both formal (courses and lectures) and non-formal (journals and other professional resources) which could be intentionally accessed by graduates.

PSA, Australian Pharmacist magazine, journal articles, refresher courses, attend lectures, NPS website, online programs

SHPA/PSA programs run monthly are good, NPS subscription and journal

Seminars are really helpful if you don't feel like reading

Interestingly, only one graduate referred to primary journal sources (Journal of Pharmacy Practice and Research), with most referring to industry journals and sources.

The outstanding feature of the data from the current study is the identification by new pharmacy graduates of the equivalence between continuing professional development and lifelong learning. It has been commented (Eraut, 2004) that informal learning is frequently unacknowledged “...informal learning is largely invisible”, with learning being regarded as institution-based formal learning. It had been anticipated by the Fellow that a more universal view of lifelong learning would be disclosed — lifelong learning is regarded as a key university graduate attribute. Additionally, the Australian accreditation standards for both university pharmacy programs and the intern training period include reference to lifelong learning, but it is only the intern training period that makes a specific link to a pharmacist's continuing professional development (Australian Pharmaceutical Society, 2009; Australian Pharmacy Council, 2010).

The data in this work indicate the graduates' emphasis on continuing professional development and on formal and non-formal learning, in apparent contradiction to the many findings reported in the literature about learning through work. Pharmacy students, rather than graduates, have been reported to have learnt from other students, pharmacists and tutors in the working community (Katajavuori, et al., 2006). Although not limited to new graduates, or indeed only graduates, employee learning in community pharmacy has been reported in a recent study, wherein it was found that learning occurred mainly on-the-job and at the workplace, with employees being readily able to apply what they learned to their work (Kotey, Saini, & While, 2011). Medical practitioners, nurses, and occupational therapists have all been reported to place a higher value on consulting colleagues for information about clinical decision making than on scholarly sources of information (Nail-Chiwetalu & Bernstein Ratner, 2007). Speech pathologists have reported that they learn through collaboration (inter- and intra-disciplinary) and work with patients to learn through trial-and-error, in order to learn in the workplace (Walden & Bryan, 2011). These findings align with other work which has proposed that employees have tended to learn most of what they know about their work from experiences in the workplace (Hicks, Bagg, Doyle, & Young, 2007).

The outstanding finding of this study is the identification by new pharmacy graduates of their perceived equivalence between continuing professional development and lifelong learning. This may reflect the focus of activity for the graduates at that time, or the workplace itself. It may also

reflect pharmacy academics' contextualisation of graduate attributes within a disciplinary context, in which the requirement for continuing professional development is emphasised. Given the link between informal and non-formal aspects of lifelong learning and effective pharmacy practice (Tann, et al., 2001), the Fellow suggests that even though students engage differentially with learning opportunities, the inclusion of explicit learning opportunities which address multiple opportunities for learning- formal, non-formal and informal, be included in the pharmacy curriculum. The importance of informal learning also needs to be understood by all pharmacists, particularly those who supervise students on placement or during internships.

Limitations of this study include the lack of generalisation as the interviewees were only from one university. There is a need to replicate the work reported in this paper with graduates of other universities. Disparity in findings may provide insight into curriculum measures which potentially reduce transition issues and increase understanding of the concept of lifelong learning for graduates.

Chapter 3: Developing and embedding distributed leadership in the curriculum.

Can curriculum approaches addressing distributed leadership be developed and embedded?

Modern leadership theory has shifted from a focus on the individual *“leader”* toward the collective act of *“leadership.”* However, rather than being associated with process, much of the discourse and popular representations around leadership are associated with a heroic or leader-centric paradigm of individual intellectual stimulation, charisma, and individualised consideration, with a sharp distinction between leaders and followers. In this traditional model, influencing activities and efforts and goal achievement is the focus of *“leaders”*. Given the challenges of influencing change in a highly complex world, focus on only a heroic leader model of leadership risks placing great import on the leader and ignores the greater majority of the workforce. The focus is now shifting from an individual *“leader”* toward the collective act of *“leadership”* (Day, 2000).

Contemporary leadership theory therefore focuses beyond the development of single individuals as leaders to the process of leadership. Leadership, for the purposes of this work, is conceptualised as a process of *“influencing the activities of an organized group in its efforts towards goal setting and goal achievement”* (Pharmaceutical Society of Australia, 2010; Stogdill, 1950). In contemporary leadership, all individuals have the capability to develop, and engage in leadership, whether or not they hold a formal leadership position. The Fellow argues that leadership capacity, that is, the ability to participate in contemporary leadership processes, may be developed through collaborative interactions between individuals, such as through learning opportunities which focus on pedagogically sound teamwork.

Within the complexity of leadership there is also its overlap with management. The terms *“leadership”* and *“management”* and their meanings are often used interchangeably (Kotterman, 2006). Leadership is a process of influence leading to the achievement of desired purposes (Kouzes & Posner, 2002), whereas management involves effective maintenance of current activities. It has been proposed (R Bolden, 2011; R. Bolden, Petrov, & Gosling, 2009) that the outcome of leadership is positive and on occasion leads to significant changes, whereas management produces order, consistency and predictability.

There are a number of representations of contemporary leadership which shift the focus from individual leaders to a more systemic perspective, conceived as a collective or collaborative social process. These are *“distributed”*, *“shared”*, *“collective”*, *“collaborative”*, *“emergent”*, *“democratic”* leadership and *“co-leadership”*. (Woods, Bennett, Harvey, & Wise, 2004) propose that there are a number of features associated with these representations. First, leadership is an emergent property of a group or network of interacting individuals, second, there is openness to the boundaries of leadership and third there is distribution of varieties of expertise across the network. A key attribute is *“concertive action”* – a complex web of conjoint activity in which the members of the *“unit(s).... synchronise their action by having regard to their own plans, those of their peers and their sense of unit membership”* (Gronn, 2009). The outcome of the process is significantly more than the sum of its parts. (R Bolden, 2011) and (Currie & Lockett, 2011) have considered the similarities and differences between these representations of leadership. Briefly, there are differences in how and where these concepts are utilised within the literature, and as to how they may be viewed with respect to concertive and conjoint action (R Bolden, 2011; Currie & Lockett, 2011).

Leadership sits within the affective domain of Bloom’s taxonomy and little work has been carried out with respect to clarification of a hierarchy of development. There has also been little research into learning opportunities which enhance graduates’ capacity to participate in contemporary leadership. Group work, frequently cited as developing students’ leadership competence, may not progress students to the stage of *“leadership”* irrespective of its definition. Shared leadership definitions often include the term *“team”*, coupled with the concept of a process or activity.

This focus of this activity was to explore contemporary leadership competences and their development with the intent of providing a framework for the inclusion of contemporary leadership development in undergraduate professional program curricula. The focus was on development of contemporary leadership in partnership with discipline knowledge or as integral to disciplinary knowledge rather than in standalone academic leadership programs.

The current educational trend of “student-centred learning,” (Woods, et al., 2004) rather than a “teacher-centred” approach, focuses on students actively constructing their own learning and on the outcomes of such learning. Learning outcomes are “...a statement of what a learner is expected to know, understand and be able to do at the end of a period of learning and of how that learning is to be demonstrated.” (Moon, 2002). The writing of learning outcomes is frequently underpinned by the hierarchies within Bloom’s taxonomy (Kennedy, Hyland, & Ryan, 2009). The three domains of learning; knowledge, skills and attitude, correspond to the cognitive, psychomotor and affective domains of Bloom’s taxonomy (Anderson et al., 2001). Each level within the hierarchies depends on the student’s ability to perform at the level or levels that are below it.

Within the cognitive domain, the levels in the hierarchy are knowledge, comprehension, application, analysis, synthesis and evaluation. The affective domain includes skills that support relationships with others and the larger professional domain relating to personal affect, integrity and worthiness, self-awareness, and a willingness to contribute, lead, or constructively participate. Bloom’s taxonomy in the affective domain represents a “continuum of internalisation”. The process of internalisation begins when attention is captured by some phenomenon; the phenomenon is valued and responded to, eventually almost automatically. Finally the values are interrelated in a structure or view of the world. This process has been subdivided into five major areas, which consist of *receiving*, *responding*, *valuing*, *organization* and *characterization* (Anderson, et al., 2001).

As mentioned above, much of teaching and assessment in higher education focuses on cognitive skills rather than on affective outcomes of values and attitudes. There are a number of potential reasons for this (Krathwohl, Bloom, & Masia, 1964), which include privacy of attitudes and values, a question of indoctrination versus education and potentially the slow attainment of affective outcomes; however it can also be argued that articulation of learning outcomes associated with the affective domain and their assessment has received little attention.

A crucial concept for teaching leadership relates to the development of appropriate learning outcomes. Once learning outcomes are developed, effective learning experiences and assessment can be designed to promote the achievement and demonstration of the requisite learning domains. The role of assessment in defining learning outcomes for students is critical (Ramsden, 2003).

Professional groups and organisations have commenced the process of identifying leadership competences, however it is important to note that the competences identified are positional rather than contemporary leadership competences. Contemporary leadership has a number of characteristics – differences are resolved to reach agreement, work is distributed according to skills, strategy and information are shared and the team works together (Kocolowski, 2010). No descriptions of contemporary leadership competencies could be located in the literature; however team competencies underpin the team work that is critical in contemporary leadership. Team competences provide a useful foundation for those of contemporary leadership. Team generic competencies, found to be valued across a diverse range of countries, include conflict resolution, collaborative problem solving, communication, goal setting and performance management, and planning and task coordination (Cannon-Bowers & Salas, 1997; Sieck, Smith, & McHugh, 2007).

As discussed above, Bloom’s taxonomy in the affective domain represents a continuum of internalisation. An extensive search of literature located only one paper, from the engineering discipline, which described leadership within the hierarchy of Bloom’s affective domain (Lynch, Russell, Evans, & Sutterer, 2009). In this hierarchy the authors suggested the following examples of achievement– *receiving* - describe leadership qualities and attributes; *responding*- perform leadership functions; *valuing* - demonstrate interest in leadership development; *organizing/ conceptualizing*- organise leadership experiences and assess learning; and *characterising*- influence others to be leaders.

Outside of the United States there has been little attention paid to development of models of tertiary students' leadership growth. Three frequently referenced leadership development models designed within the context of United States college students include the Student Leadership Practices Inventory (Posner, 2004), the social change model of leadership development (NHS Institute for Innovation and Improvement, 2006-2010) and a leadership identity development model (Komives et al., 2009). The Student Leadership Practices Inventory and the social change model of leadership development both emphasise co-curricular aspects of leadership development such as student fraternities and service projects and other aspects of tertiary education specific to the United States. The leadership identity development model, free of these constraints, has therefore been selected as the basis for leadership development in undergraduate professional program curriculum in this paper.

The leadership identity development model (Komives, et al., 2009) comprises the key categories for understanding how individual students develop a social identity as leaders. This model proposes stages of awareness, exploration/engagement, leadership identification, leadership differentiation, a commitment to developing leadership in others and integration/synthesis. The leadership identity development model (Komives, et al., 2009) developed through a grounded theory methodology, aligns with the extensive body of literature that argues that leadership is in fact a distributed activity "*leadership is everyone's business*" (Kouzes & Posner, 2002). It is important to note that within this framework transitional stages are also described. These stages are awareness, exploration and engagement with leadership, identification of self as a leader, differentiation of leadership, generativity and integration of leadership.

Both the hierarchy of Bloom's affective domain (Krathwohl, et al., 1964) and the leadership identity model (Komives, et al., 2009) include early stages of awareness through to the higher stages of characterisation by value or value complex. A framework for students' leadership development (displayed in Table 1) can be constructed through alignment of the leadership identity model (Komives, et al., 2009) and the hierarchy of Bloom's affective domain, revisiting the original work which describes this hierarchy (Krathwohl, et al., 1964). The framework highlights the importance of a number of aspects which include emphasising leadership as a concept, but more importantly identifies the critical role that group work and team work play in the internalisation of leadership. The framework also importantly emphasises the developmental stages from group to team (Komives, et al., 2009).

The leadership identity development model (Komives, et al., 2009) emphasises the importance of moving students past the "*leadership identified*" role i.e. a positional role, to a view in the *integrations/synthesis* stage of "*I am a leader*" i.e. a non-positional role. It is acknowledged that some students may not move past the "*leadership identified*" role and indeed that at workplaces in which graduates may be employed the dominant leadership view may be one of positional leadership.

This raises the question of whether a nonlinear pathway should be considered when conceptualising the alignment between the leadership identity model and the hierarchy of Bloom's affective domain, for the development of a framework for inclusion of leadership development in undergraduate professional program curriculum. Illustrative educational objectives focussed on leadership development extracted from the affective hierarchy (Krathwohl, et al., 1964) are shown in Table 2. Another series of illustrative items have been proposed by the Fellow to demonstrate potential nonlinearity in the development of students. This nonlinear pathway acknowledges potential student progression through the stage of "*leadership identified*" to "*I am a leader*" and "*leadership is everyone's business*".

This work presents a hierarchy of leadership development, based on the affective domain of Bloom's taxonomy (Krathwohl, et al., 1964) and the leadership identity development model (Komives, et al., 2009). This hierarchy may be useful for those academics seeking to develop leadership in partnership with discipline knowledge or as integral to disciplinary knowledge in undergraduate professional programs.

Table 1: A framework for leadership development in students.

The table is constructed through alignment of the leadership identity model (Komives, et al., 2009) and the hierarchy of Bloom's affective domain (Krathwohl, et al., 1964).

Affective domain of Bloom's taxonomy (Krathwohl, et al., 1964).	Leadership Identity Development Model (Komives, et al., 2009)
Receiving (attending) Awareness Willingness to receive Controlled or selected attention	Awareness Recognising that leadership is happening around you Getting exposure to involvements
Responding Acquiescence in responding Willingness to respond Satisfaction in response	Exploration/ Engagement Intentional involvements Experiencing groups for first time Taking on responsibilities
Valuing Acceptance of value Preference of a value Commitment (conviction)	Leader Identified Trying on new roles Identifying skills needed. Taking on individual responsibility Individual accomplishments important
	Leadership Differentiated Joining with others in shared tasks/ goals from positional or non-positional group roles Need to learn group skills New belief that leadership can come from anywhere in the group (non-positional)
Organisation Conceptualisation of value Organisation of value system	
	Generativity Active commitment to a personal passion; Accepting responsibility for the development of others Promotes team learning Responsible for sustaining organizations
Characterisation by value or value complex Generalised set Characterisation	Integration/ Synthesis Continued self-development and lifelong learning Striving for congruence and internal confidence

Table 2: A non-linear framework for students' leadership development

This table includes additional stages and illustrative educational objectives included by the Fellow.

Hierarchy within affective domain of Blooms taxonomy (Krathwohl, et al., 1964).		Illustrative educational objectives (Krathwohl, et al., 1964).
<i>receiving</i> e.g. awareness		"awareness of the existence of chief statesman in international affairs"
<i>responding</i> e.g. willingness to respond		"contributes to a group discussion by asking thought provoking questions or supplying relevant information and ideas"
<i>valuing</i> e.g. acceptance of value		"feels himself a member of groups which undertake to solve a common problem, whether local, national or international"
	Additional stages in nonlinear hierarchy added by Fellow	Illustrative educational objectives developed by Fellow
	<i>receiving</i>	"awareness of leadership demonstrated by non positional leaders"
	<i>responding</i>	"contributes to leadership roles within groups, for example, to set up meeting schedules"
	<i>valuing</i>	"appreciates the contributions of all group members in achieving a good project outcome"
<i>organising and conceptualising</i>		"begins to form views of interdependence of leadership"
<i>characterisation</i>		"identifies as leader" "leadership is everyone's business"

There is a body of literature that professes the notion that group work, teamwork or cooperative learning supports the development of students' leadership skills. In these reports (Dyball, Reid, Ross, & Schoch, 2007; Hassanien, 2007), in which students work together in small groups to achieve a specified goal, it is suggested that leadership capacity is developed amongst a number of other generic skills such as organisation, negotiations, delegation, conflict resolution and time management. A number of insights can be drawn from this body of literature.

- Group, cooperative and teamwork are generally associated with performance by students of some type of project activity.
- The terms cooperative, team and group are used interchangeably in the literature, although it is acknowledged that students in groups do not necessarily work cooperatively (Ballantine and McCourt Larres, 2007).
- With respect to Kirkpatrick's four levels of evaluation (Kirkpatrick, 1994) students' learning around teamwork, if discussed, is self-reported and thus evaluation of the initiatives is at the lower levels. Briefly, Kirkpatrick's four levels of evaluation (Kirkpatrick, 1994) have been adopted when evaluating changes to learning opportunity design or execution, eg, evaluation of an inter-professional intervention in health sciences as described by (Miers et al., 2007). The first level involves evaluating the reaction of students; the second determining students' learning; the third level is the measure of behavior change. The fourth level evaluates effects on students' or graduates' performance in the work environment.
- Reference is made to "leadership" without definition of the term.

A number of studies are now presented in greater depth to illustrate the above findings. A

qualitative study reported by (Hassanien, 2007) that elicited the views of Sport, Performing Arts and Leisure students about group work, commented on the role of group work in developing leadership skills. Students in this work reported a heroic, leader-centric understanding of “leadership.” Students recognised the importance of a positional leader in group work with some students taking on this role; however the authors did not define the term (Hassanien, 2007). Accounting students’ views on the impact of cooperative learning on generic skill development have been reported by (Ballantine & McCourt Larres, 2007). Students self-reported benefits across a range of generic skills including verbal communication, negotiating and leadership skills. However, although leadership skills were surveyed, a definition of leadership skills was not provided for the students.

(Baker & Clark, 2010) proposed a model to help lecturers set up successful cooperative learning programs with ethnically and linguistically diverse classes. This included training for academics around group roles including leadership and also included student groups determining their own group processes such as deciding on their preferred “leadership system”. However, elaboration on leadership styles was not provided.

Electronic media have also been utilised in developing students’ perceptions of developing transferable skills such as teamwork, whereby online discussion boards have been used to evidence interactions in the learning of anatomy (Choudhury & Gouldsborough, 2012). In this example formal heroic leadership of the team is considered, although again not defined, with leaders awarding grades to team members. Thus the literature, suggests that teamwork in the execution of projects is a learning opportunity for development of leadership capability.

Distinctions between teams and groups are of significance when discussing development of leadership. An analysis of the concept of teamwork examining a number of definitions of teams undertaken by (Xyrichis & Ream, 2008) identified the critical characteristic that a team consists of a group which collaborates in its work. Characteristics of teamwork include “*recurring cycles of mutually dependent interaction*” (Morgeson, DeRue, & Karam, 2010) thus aligning with the conjoint activity of leadership (Gronn, 2002). Phases can be divided into first — evaluation or planning and second — an action phase of work activities. Informal, internal team leadership is associated with functions within the transition phase and action phase. When considering developing students’ learning around leadership these stages need to be elaborated. Functions associated with the transition phase are: composing the team, defining the mission, establishing expectations and goals, structuring and planning, training and developing the team, sense making and providing feedback. Functions associated with the action phase are monitoring the team, managing team boundaries, challenging the team, performing the team tasks, solving problems, providing resources, encouraging team self-management and supporting the team climate (Morgeson, et al., 2010).

Learning outcomes also provide a framework for the form and detail of assessment of learning opportunities, for example a project which needs to be completed by a number of individuals working together. Assessment as outlined by (Yorke, 2003) is recognised as having two main purposes which may in fact be interlinked: certification of learning, and aiding learning as in formative assessment. Self-assessment is a process of formative assessment during which students reflect on the quality of their work, judge the degree to which it reflects explicitly stated goals or criteria, and revise accordingly. Students may also plan for future learning. Rubrics — explicit criteria with indications of levels of achievement, may also be useful in helping to guide students in their self-assessment of a piece of work (Andrade & Valtcheva, 2008).

There are two aspects to assessment of a piece of work completed by a team — product and process. The first of these is the “quality” of the piece of work itself, the product, which is assessed and awarded a grade. The second of these aspects, the process, necessitates the awarding of grades which reflect teamwork, assessment of the students’ processes of working together and which refer to the team’s performance as a whole and to its collective success. In this second element, the team is the unit of analysis not individual students.

There are a number of papers which report on approaches to awarding assessment grades that incorporate peer grades for individual team member’s contribution to team projects, for example (Oakley, Felder, Brent, & Imad, 2004). However, more recently, the view that allocation of grades

for assessments for cooperative learning situations should be different from allocations for individual assessments (Albon & Jewels, 2009; Hughes & Jones, 2011) is being espoused.

Regarding this view, a team grade i.e. the same grade awarded to all students for the process and the product is proposed. It is argued that allocation of individual grades for individual contribution and effort in team assessments is not appropriate. The awarding of a team grade is consistent with assessment aligning with learning outcomes which specify teamwork. The awarding and scaling of a grade for individual contribution and effort does not align with a teamwork-associated learning outcome.

Acknowledging the formative as well as summative role of assessment, it is important to revisit the importance of reflective practice in student learning. Formative assessment helps to inform the teacher and the students as to how the students are progressing. Similarly, students' reflection on the quality of their work assists students to plan for their own future learning. Assessment of students' reflections and self-assessment of their own individual performance against a rubric, which defines assessment criteria by describing performance at different points on a rating scale, may provide students with opportunity for learning.

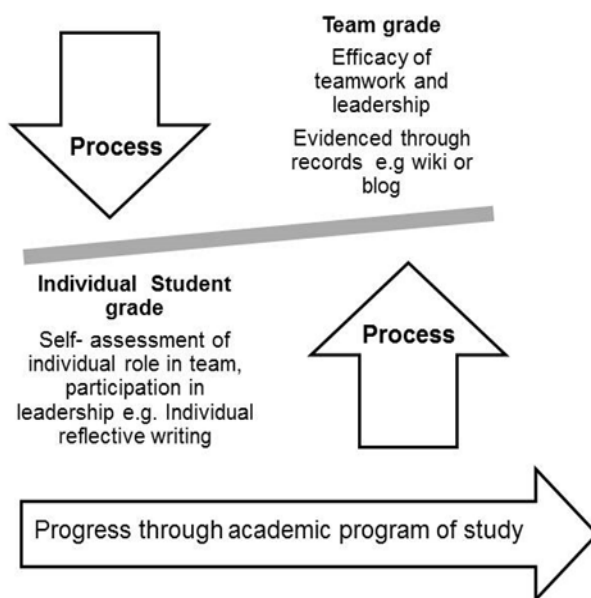
Affective outcomes may be attained slowly (Krathwohl, et al., 1964) and there is argument that their development should permeate the whole curriculum rather than be isolated in a single or specialised course (Scoufis, 2000). Therefore the Fellow proposes a model, presented in Figure 1, in which some allowance within the process grade can be made, such that student learning is acknowledged. The process grade incorporates grades from student self-assessment (individual student grades) and grades for collective student success (all members of group working together receive the same grade). Early in the students' program of study less emphasis is placed on the team grade, as students learn, less emphasis is placed on the process of reflective self-assessment. The product is awarded a grade based on its "quality".

Many of the available rubrics that describe performance criteria and standards around teamwork include peer assessment of team members. In my view the team is the unit of analysis for learning outcomes associated with teamwork — peer assessment in this context is not appropriate. The Fellow proposes that clear expectations for students should be provided through a rubric which guides students through the processes of teamwork as described by (Morgeson, et al., 2010). These are:

- the transition phase — composing the team, defining the mission, establishing expectations and goals, structuring and planning, training and developing the team, sense making and providing feedback,
- the action phase — monitoring the team, managing team boundaries, challenging the team, performing the team tasks, solving problems, providing resources, encouraging team self-management and supporting the team climate and thus facilitating student learning.

As shown in Figure 1, evidence for individuals and of the teamwork process could be captured through reflective writing and through Wiki or blog online technologies respectively.

Figure 1: Proposed model for incorporating individual and team grades for the assessment of the “process” of teamwork



This model aligns with teamwork appropriate learning outcomes whilst recognising students’ learning trajectory for the affective domain. The presented model focusses on assessment. The next section of the chapter discusses other considerations for supporting development of students’ leadership capacity.

The term “scaffolding” has been used widely to describe supportive teaching strategies. Scaffolding necessitates students being enabled to carry out a task which they would not have been able to carry out on their own, with the guided steps eventually enabling them to complete the task as evidenced by learner achievement (Verenikina, 2008). There are numerous, very diverse examples of scaffolding in the literature including the use of worksheets in problem based learning (Choo, Rotgans, Yew, & Schmidt, 2011) and the provision of skills practice in a higher education setting prior to skills application in a work based placement (Stupans, Owen, Ryan, Woulfe, & McKaige, 2010). However, no research could be located in the literature search regarding the role of academics in scaffolding student learning of attributes such as leadership.

Although not referring specifically to the notion of leadership, guidelines to facilitate effective team, as distinct from group, structure (Oakley, et al., 2004) include developing student expectations and evaluation of both progress and team members. These approaches align with functions associated with the transition phase in teamwork as described by (Morgeson, et al., 2010). The guidelines also include the suggestion that members of the student groups allocate themselves to the roles of facilitator, coordinator, recorder and monitor. In such a team structure, the role of a leader as such is not articulated, aligning with the concept that leadership is distributed throughout the team.

Some purport that group, team and cooperative learning opportunities are provided to students to decrease marking load for academics (Morris & Hayes, 1997). However it is apparent that pedagogically sound teamwork activities contribute to scaffolding for the development of leadership. Regarding scaffolding – clarity and explicit communication regarding definitions,

benefits, expectations, and processes has been shown to enhance the quality of students' learning experiences as evidenced through assessment (Stupans, March, & Owen, 2012). Detail of expectations (standards) provided through rubrics provides students both individually and in their teams the opportunity to self-assess their processes and develop improvement strategies.

Design of any learning opportunity needs to focus on the intended learning outcomes and ensure that activities and assessment tasks align to the intended learning outcomes of the particular learning experience (Biggs & Tang, 2007) (page. 54). The need for active student involvement in learning has been emphasised in the shift from a teacher-focused to a learner-focused curriculum.

Trialling of the model

This report now presents and analyses the design of a learning activity based on team work, facilitated through online collaboration utilising Wiki technology. One of the learning outcomes of the unit in which this activity sits is to develop teamwork skills.

The Internet has emerged as a mainstream communication medium, resulting in the development of new educational opportunities for undergraduate, postgraduate and continuing education. New technologies using the internet provide a range of different approaches for student learning. Technologies such as Podcasts, Vod (video) casts, and Learning Management Systems such as Blackboard and Moodle provide opportunities to facilitate student learning. In this project a Wiki was used as it provides an opportunity for students to interact with others who may be physically located at a distance.

There are a number of recognised requisites for successful team learning experiences including appropriate grouping, student interdependence, individual accountability, social skills interaction, and group monitoring (Cottell & Millis, 1992) regular and timely feedback between team members and multifaceted assignments which require decision-making among team members (Michaelsen & Sweet, 2011). In traditional tertiary education environments, interactions between students may occur in seminar rooms, the library or laboratories. In distance education, an increasingly important aspect of higher education, students' interactions with other students are considered to be of critical importance (Garrison, Anderson, & Archer, 2001) and rather than occurring face to face may be enabled through online technologies (Michaelsen & Sweet, 2011). Distance education models are also increasingly being adopted for students studying on-campus, as they offer flexibility of time and place. For both distance and traditional tertiary students, team interaction and learning can be facilitated by Web 2.0 technologies such as Twitter, Facebook, MySpace, Wikis and Google Docs which provide tools enabling communication, collaborative authoring and knowledge building by multiple users. Technologies such as Wikis are relatively simple for students to implement and use and provide functions which enable monitoring of document revisions and comment functions enabling interactions between students and staff (Chu & Kennedy, 2011). With regards to assessment and its alignment with design of learning activities the model proposed above describes two aspects to assessment of a piece of work completed by a team — team product and team process. Additionally, assessment of students' writing reflecting on their own individual performance may be incorporated to provide students with additional scope for learning. Assessment of the teamwork process refers to the team's performance as a whole and to its collective success — the team rather than individual students is the unit of analysis. This approach is in contrast to papers which emphasise the need for a balance between teamwork and "fairness" and report on approaches to awarding assessment grades which incorporate peer grades for individual team member's contribution to team projects, for example (Oakley, et al., 2004; Willey & Gardner, 2010). Indeed complex schemes which incorporate a team member's contribution, in the form of an individual weighting factor (Nepal, 2011).

Methodology

The data for this study were collected from a four year program Pharmacy program, available in both an on campus and off campus (distance) mode, at the University of New England, a small regional Australian university in New South Wales.

Learning in teams was adopted in a third year unit, Molecular Basis of Therapeutics (31 students). Students were allocated to small teams (7 teams, 4-5 students per team) and assigned individual team topics. Teams were a mix of students studying in the off and on campus modes. The task outlined was to produce a Wiki — “study notes”. Students were provided with a brief overview of the areas to be covered within each topic, an assessment rubric, an overview of the importance of team work in health (reproduced in brief Table 3) and guidelines for reflection on their team’s, and their own, teamwork in undertaking the activity. Students were provided with information regarding process — to be assessed on the basis of written student-to-student commentary interactions. Access to the individual team Wikis was enabled only for team members during the construction period; after assessment the Wikis were accessible to all in the class.

Student-to-student commentary in the Wiki was collated and evaluated for evidence of process as outlined in Table 4. Student reflective writing was analysed through manual coding processes involving sorting; reading through information to make general sense; recording of thoughts about the data and organising material into categories (Strauss & Corbin, 1998). Selected quotes which illustrated these categories were identified.

Results

Compiled data for assessment of process are displayed in Table 4. Communications between members in all teams were polite and all students offered assistance to one another.

Five of the seven teams displayed shared leadership: team members built relationships and worked together to meet a common goal rather than relying on a “traditional” leadership model hierarchy. A selected quote which illustrates this is:

*‘Hi all,
I was just having a read of the comments and realised that no one has mentioned covering the treatment plan section. Can I assume that this may be left to the fourth member of our group who hasn’t put a comment up yet or should we organise something separately?’*
(student 2, group 4)

Three of the teams read other team member’s work and provided feedback. One of the groups organised a “buddy system” to facilitate this checking process. Checking and feedback is illustrated in this quote;

*‘Hi, I like the way that you have organised a lot of the information into the two tables. I have made sure that all the medications you have listed are covered in my section.
The only question I have is what does (acronym) stand for in the second table? Perhaps an * could be placed next to and an elaboration placed under the table?’* (student 3, group 3)

Individual students’ reflective writings were also analysed and a number of themes were evident. The first theme that emerged was that students regarded the activity as enjoyable. For example;

‘Overall, working as a team to complete the Wiki assessment was a positive experience and thoroughly enjoy[able]’ (student 1, group 5)

Although the focus of this paper is development of leadership capacity and an aligned curriculum, it is acknowledged that positive emotions such as enjoyment relate positively to intrinsic motivation, self-regulation of learning and academic performance (Pekrun, Goetz, Frenzel, Barchfeld, & Perry, 2011). In fact some students commented on the quality of the study notes;

“a thoughtful Wiki and a good end product” (student 4, group 7)
“produced an excellent final Wiki” (student 1, group 6)

Secondly, communication was regarded as being of critical importance to success of teamwork.

Overall I was content with the contribution each member made to this assignment and was convinced that we all had the same end goal. Everyone contributed to the comments page throughout the process making it easier to rectify any problems (student 2, team 3)

Thirdly, it was viewed that planning of the task and associated timelines were important to success, in some cases this was identified as an important learning for students for future assessments.

I have learnt how important it is to organise responsibilities and set deadlines early when given a set task. Had this occurred our group may have finished the Wiki earlier, allowing more time to review and evaluate. (student 1, group 1)

Lastly, with respect to teamwork, it was identified that different students led at various times during the work, and that individual students contributed in areas of strength, such as grammar, spelling or online formatting of materials.

...with different people taking the responsibilities based on their skill attributes and personalities. For example, [name] liked to be organised and took leadership early ensuring everyone knew what was required of them at the beginning. Both [name] and [name] had completed Wikis before and took leadership in terms of formatting and referencing the Wiki. (student 1, group 3)

Many, but not all, students in their reflective writing of their own contribution to the activity, teamwork and shared leadership identified with the concept “*I am a leader*” (Komives, et al., 2009) consistent with the highest level within Bloom’s taxonomy in the affective domain.

With respect to leadership only one student reflection identified the lack of a team leader as a concern for the project. In another group there was resentment regarding a team member who imposed leadership on their team. In this case an interesting analogy was made with respect to “teams” in health care.

The team was dominated mostly by one member.....This ties in with patient compliance; if the patient is involved in the discussion and decision-making regarding their medications, they are more likely to comply with the regimen (student 4, team 6, shared leadership was not evident in team 6).

This learning opportunity illustrates active student learning. Team work between students was facilitated through online collaboration utilising Wiki technology. Analysis of written student-to-student interactions revealed shared leadership of the team and a ‘concertive’ effect whereby the overall quality of the Wiki was enhanced as an outcome of the team process in five of seven teams. Many researchers have stressed that collaborative learning can have disadvantages. Teams may not work well, problems such as the “free rider” effect, the “sucker” effect, the “status sensitivity” effect and the “ganging up on the task” phenomenon (Salomon & Globerson, 1989) have been described. This was not evident in the Wiki commentary, the Wiki version analysis or the individual student reflections. In this learning opportunity, individuals recognised that the work was shared equitably between members of the team.

‘At no point during the assignment was I concerned about my group members not pulling their weight In previous group assignments this has not been the case, I have often found that one or two group members often have to do more work’ (student 4, group 4)

Assessment of collaborative learning through Wiki functions (versioning, tags, comments, linkers) to support the monitoring of the students’ activities and their level of contribution to the collaborative work. (Trentin, 2009) has described the assessment of the activity in the work described in this paper focussed on the learning outcome of teamwork.

The learning activity was focused around active learning, with alignment of the activity and assessment with the learning outcome. Values, attitudes, behaviours and related attributes or dispositions are not readily assessable through traditional assessment approaches (Shephard, 2009). Students’ reflections indicated learning of features that are considered to be critical to effective teamwork processes such as planning, feedback and good communication (Michan & Rodger, 2000). An additional advantage of this learning opportunity was that it was undertaken between students who had not ever met face to face, preparing them for work in virtual teams.

Table 3. Importance of team work in health: Abbreviated guidelines

(Based on Ingram & Desombre, 1999; Salas, DiazGranados, Weaver, & King, 2008; Fransen, Kirschner, & Erkens, 2011)

Teamwork and collaboration are essential for the delivery of health services. Individual health care professionals must build networks and maintain ongoing rapport with others. There are several key factors that are essential to effective teamwork in delivering quality health care services.

1. **Shared leadership:** Effective teams share leadership among all the team members. Shared leadership means that all team members work together to plan their work, review results and solve problems. It also means that team members coordinate their work and accept responsibility for outcomes.
2. **Cross training:** In effective health care teams, team members anticipate the needs of other team members and step in to help one another when needed.
3. **Shared Mental Model:** Effective health care teams have a shared mental model based on a set of deeply rooted values and assumptions that define the team's work and how the members interact to complete the work.

Assessment Exercise – to observe and analyse teams in action

1. Observe the teamwork which occurred in response to your assignment. Pay attention to your role in the team. You should take notes.
2. Recount (i.e. describe) what happened in chronological order.
3. From your observations and recount, what have you learnt? You may find some of the following questions a useful starting point when writing your reflective account.
 - Did the team have a clear focussed vision?
 - How did each member contribute to the team's task?
 - Did each member on the team have a clear role? Did team members have a clear understanding of other team member's roles?
 - Did the leadership of the team change? How was leadership determined? How was it shared? Was leadership contested?
 - What was the climate for the team's functioning? Was it constructive and open or closed and dominated by one or two people?
 - Were specific objectives generated and agreed upon for each task? How did this occur?
 - What was the team's communication pattern?
 - How did the team make decisions?
 - How did the team review and evaluate its progress and decisions?

Table 4. Assessment of team process.

	Team Number						
Assessment Criteria	1	2	3	4	5	6	7
Shared leadership	YES	NO	YES	YES	YES	NO	YES
Checking on each other's progress	NO	YES	YES	YES	YES	YES	YES
Offers assistance to others on team	YES	YES	YES	YES	YES	YES	YES
Checking of other's work, giving feedback	NO	NO	YES	YES	NO	YES	NO
Polite, clear communication	YES	YES	YES	YES	YES	YES	YES

Students were provided with a rubric detailing assessment criteria for the team process. YES indicates that the criteria were evidenced in written student-to-student commentary interactions

Overall conclusions

There are two main conclusions which can be drawn from this work

1. Concepts of professionalism, leadership and lifelong learning are widely referred to in pharmacy education and professional literature; however curriculum initiatives around providing learning opportunities and/or assessment for students in these areas have received very limited attention.
2. A framework to promote curriculum innovation around distributed leadership has been developed; this framework when applied has been well accepted by students and could be applied across disciplines.

Publications arising from this Fellowship

- Stupans I.** Qualitative interviews of pharmacy interns: determining curricular preparedness for work life. *Pharmacy Practice (Internet)* 2012 Jan-Mar;10 (1):52-56.
- Stupans I.** Lifelong Learning: Views of Australian Pharmacy Interns *Journal of Pharmacy Practice and Research* 2012 42, (1): 30-33
- Stupans I.** Promoting collaborative leadership development. *Academic Exchange Quarterly* Vol. 16, No. 1, pp.79-85.
- Stupans I.** Developing student contemporary leadership capacity through teamwork. in *Learning in University Education Contemporary Standpoints* p. 45-58
ISBN:9781907471704 Libri Publishing 2013
- Stupans I.** Development of contemporary leadership capacity through teamwork in an online environment: a pilot study. *International Journal of Teaching and Learning in Higher Education* 2013, 25, (2): 262-268.

Dissemination of the work within this Fellowship

- University of South Australia, Pharmacy teaching team meeting, December, 2009
- University of New England, Learning and Teaching conference, September 2010.
- Charles Sturt University, Pharmacy teaching team meeting, September, 2010
- La Trobe University, Pharmacy teaching team meeting, September, 2010
- Australasian Pharmaceutical Sciences Association Annual Conference, Brisbane, December 2010.
- University of New England, Learning and Teaching conference, September, 2011.
- Australian Conference for Science and Mathematics Education, Melbourne, September, 2011.
- National Pharmacy Discipline Network meeting, Adelaide, May 2012.
- International symposium in Greece organized by the International Academic Association for the Enhancement of Learning in Higher Education, June 2012.
- Otago University, School of Pharmacy seminar program, November, 2012.

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**Appendix A: Independent Evaluation
for the
Office of Learning and Teaching**

**Professor Ieva Stupans
Teaching Fellowship
2010 – 2012**

**Supporting student transition to
a futures-orientated professional identity**

Evaluator

Christine Ingleton

15 August 2012

I have been the Independent Evaluator of Professor Ieva Stupans' ALTC funded Fellowship from February 2010 until August 2012. Over that time the focus of the Fellowship has shifted. The project began with a broad concept of defining professional identity and lifelong learning as an outcome of the undergraduate Pharmacy curriculum. Over time the Fellowship has achieved a clear focus on one specific aspect of professional identity: the development and assessment of distributed leadership skills through teamwork. This has culminated in the imminent publication of a book chapter entitled Developing student contemporary leadership capacity through teamwork in an international anthology LEARNING IN UNIVERSITY EDUCATION - CONTEMPORARY STANDPOINTS to be published and distributed worldwide by Libri Publishing Ltd, currently in press.

As evaluator my role has been to ensure the goals of the Fellowship have been fully met and to encourage the Fellow on her journey. To achieve this I have been in regular contact with Ieva in the following ways:

- 10 email discussions
- 4 formal meetings by telephone
- 3 face-to-face meetings
- attendance at her paper presentation at the Pharmacy Discipline Network, 3rd May, 2012.
- I have read and commented on feedback from that presentation
- and read and critiqued drafts of all her written papers and reports.

The first period of the Fellowship saw significant changes for Ieva professionally and personally. She gained a Professorship in Pharmacy at the University of New England, necessitating moving her household interstate and the negotiation of funding changes between the University of South Australia and UNE. More recently Ieva has dealt with debilitating health issues. The ensuing delays to her progress have been clearly documented in Ieva's straightforward communications with the funding body through Siobhan Lenihan, and with me.

Ieva's project is set in the context of robust national discussions on the expectations of the professions, education providers and government quality assurance bodies to ensure that graduates are well educated and assessed appropriately to become workforce-ready. Both generic and content-based learning outcomes have become increasingly under scrutiny by universities and the professions. Within universities there is now a strong focus on the clear alignment of identified learning outcomes with assessment. However, it is easier to assess knowledge of content than the achievement of generic capabilities which may be firmly espoused but are difficult to account for.

Leadership is a generic skill espoused for university graduates across the disciplines including Pharmacy. Ieva's literature review found, however, that 'leadership' as a generic skill has rarely been defined though often mentioned. The specific teaching of leadership is not a responsibility taken by most professional courses in Health, (though Problem Based Learning has perhaps offered opportunities for this), and evidence for its attainment is difficult to find.

On the other hand, teamwork and its evaluation have been integrated in many teaching programs for a long time. Ieva argues that teamwork provides an appropriate setting for the development of leadership skills. The focus of teamwork, however, is largely on the assessment of product rather than of process or generic outcome. Most teachers are more comfortable with teaching and assessing content and knowledge. But the well known disadvantages of teamwork, the inequities of effort put into the work, make for difficulties in assessment. There are also considerable cultural differences in how teams perform. Neither teachers nor students are trained in group work methods that maximise the potential of teams and minimise their inherent conflicts. Yet team projects have the potential for developing skills in working together, developing leadership skills and managing performance, and so mirroring working in the community.

In this context Ieva's project has focused on one specific aspect of professional identity: the learning of distributed leadership skills through teamwork. She uses a familiar teaching/learning situation to highlight an identified generic skill that is espoused but not assessed - even though it is highly desirable in the workplace and community. Her chosen model uses the process of reflection as a means of learning and assessing distributed leadership capability. She proposes that team members share the same mark for process and product, but that they earn an individual mark for their reflection on leadership processes. This is one of the two key points of difference with the

surveyed literature on teamwork. The other is the concept of distributed leadership and its definition. The major difficulties to be addressed with the implementation of leva's proposal are the identification of the range of skills pertaining to distributed leadership, and how to manage the learning and assessment of those skills.

Feedback from conference participants at the Pharmacy Discipline Network in May 2012 shows acceptance of the idea of identifying such skills in the context of teamwork, and of the importance of leadership as a generic attribute. The identification of distributed leadership skills can be met in the context of assessment rubrics. Evidence of their recognition and achievement could be seen and assessed in students' personal reflections on their use and observation of specific skills. The subsequent scaffolding of student learning, crucial to meeting the development of skills, is at this stage in its infancy, and merits future work in her Fellowship. At the time of writing, leva is analysing the first results of students' reflections on leadership in her own courses. Continued work on the scaffolding of teaching/learning approaches within teamwork is needed to test how well staff and students can embrace the imperative, and the means, for valuing distributed leadership as a learning outcome.

leva has disseminated her work through presentations at

- the National Pharmacy Discipline Network in May 2012
- an international symposium in Greece organised by the International Academic Association for the Enhancement of Learning in Higher Education in June 2012
- at HERDSA in July 2012
- in her current teaching at UNE
- and in her book chapter Developing student contemporary leadership capacity through teamwork.

Her current initiative is to compare three ways of getting students to work in teams, and she will report those results to you directly.

The culmination of leva's work can be seen in her book chapter. Building on her literature review she mounts a clear and compelling case for her model. I commend her work for the Fellowship and recommend the further development of her model through the design and testing of assessment rubrics that will support learning and teaching for leadership not only in Pharmacy but will be applicable across the professions.

Bio note

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Christine has thirty years' experience in the field of tertiary learning and teaching. Formerly Deputy Director of the Centre for Learning and Professional Development at the University of Adelaide, she is now an education consultant specialising in evaluation.

Recent evaluation projects related to Health have included:

- Evaluation design for Out-of-Practice Training for Adelaide to Outback GP Training (2009)
- 'Using Team Management systems to identify and build leadership for quality learning in clinical healthcare teams' – Independent Evaluator ALTC Project (2009)
- Experiential Placements in Pharmacy - Independent Evaluator ALTC project (2010)

Current projects include:

- 'Harmonising higher education and professional quality assurance processes for the assessment of learning outcomes in Health' - Independent Evaluator OLT Project (2011-13).