Involving students in research decision making: Developing a competency graduated descriptors tool

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As an outcome of reorganisation within the Australian health sector to establish national, rather than state and territory, registration boards, many in the higher education sector are re-examining their role in building student knowledge and skills within competency frameworks. In regard to pharmacy education and experiential placements, Australian Learning and Teaching Council (ALTC) funded research during 2008–2010 has involved stakeholder consultations to identify competency graduated descriptors, with students as a key group. The importance of involving stakeholders in all stages of research processes from inception to results dissemination is highlighted in the literature. Researchers emphasise the ‘knowledge use’ dissemination model, which involves stakeholders in decision-making, including the use of extended workshops and follow-up action. In making decisions about higher education learning and assessment directions, evaluating differing stakeholder perspectives and valuing student ideas is an under-researched area. This paper reports on the processes involved in the development of the competency graduated descriptors tool including highlighting the role that students have played in various aspects of decision-making, including the competency graduated descriptor tool eventually developed. While some research and consultative work pays ‘lip service’ to or seeks to marginalise student responses, in this project the contribution of students has been foregrounded at all stages of the research process. This paper provides a model of a collaborative approach and has application across health education research and for other discipline areas in terms of working with practitioners and students in developing practically based materials to support improved learning outcomes.

Keywords: competency, researcher-student partnerships, student self-assessment
Introduction

Tertiary institutions in Australia are increasingly becoming part of the broader social, political and economic infrastructure. Universities are being required by the Federal government to accommodate increasing enrolments in health programs such as medicine, nursing and pharmacy, at least in part due to the ageing of the general population and health workforce. The Council of Australian Government’s Intergovernmental Agreement for a National Registration and Accreditation Scheme for the Health Professions (COAG, 2008) is also forcing restructuring of existing health arrangements within a national context. This has involved the establishment of National Boards for ten health professions, with alignment occurring for both accreditation and registration requirements (COAG, 2008; AHPMA, 2009).

Within accreditation standards for university health programs, there is an expectation that students progressively build their skills, knowledge and attitudes for the purpose of meeting profession-driven competencies. Rather than competencies being considered in simplistic terms such as technical checklists, a more holistic approach relevant to professions has been used and this approach acknowledges complexity and the situational contexts involved. A competency can be defined as comprising ‘the specification of knowledge and skills and the application of that knowledge and skills within an occupation or industry level’ (Gonzi, Hager & Oliver, 1991).

While competencies traditionally focus on assessment and whether there is evidence that standards have been met, researchers such as Benner (1984) and Dreyfus and Dreyfus (1996) highlight the process aspects, acknowledging graduated (incremental) competency levels from novice to expert. In relation to pharmacy, for example, there are eight functional areas of competencies outlined in the Pharmaceutical Society of Australia (2003) Competency Standards for Pharmacists in Australia. Broad functional areas of pharmacy competencies include professionalism/ethics, communication and working relationships, optimising health care, dispensing, preparing pharmaceutical products, primary health care, health education and information and organisation and management aspects. The functional areas are accompanied by detailed units, elements and performance criteria. Pharmacy graduates are not expected to be assessed against the competencies until the completion of a one year post-graduate internship program.

Background

The aim of a previous (2007) Australian Learning and Teaching Council–funded research project regarding pharmacy education was to map experiential programs across Australian pharmacy schools and to highlight key characteristics and issues. Results indicated that experiential placements are highly valued by all stakeholder groups. However improvement areas in relation to pharmacy experiential placements were also identified, with students particularly emphasising the need for scaffolding (Owen & Stupans, 2007). Competency-based learning aims for complete competence, when in reality students need scaffolded approaches such as feedback on their progress towards achieving competence.

The current Australian Learning and Teaching Council–funded research project aims to improve curriculum planning and to develop a competency graduated descriptors tool to support student self-assessment and preceptor feedback (Owen & Stupans, 2007). In their research design, both projects have used an iterative development process together with
extensive stakeholder consultation involving members of professional pharmacy organisations, pharmacists, academics and pharmacy students. Consultation with students has occurred in two stages – at the annual national pharmacy student leaders’ forum over four consecutive years and with a wider student group at each Australian university.

In professional contexts, the importance of researchers and practitioners working together has been highlighted (PEW, 2003; Hemsley-Brown, 2004; Hoppes & Chesbro, 2003). However, the traditional approach to research has been for universities and academics to seek student satisfaction perspectives in evaluating courses or to provide only limited follow-up opportunities for decision-making and action (Owen & Stupans, 2009; Hill, Lomas & McGregor, 2003). In collaborative educational research processes, students’ views are frequently sidelined, with professional body or employer perspectives or the views of academics generally being given greater consideration (McDowell & Sambell, 1999).

In addition, many studies indicate that while students are involved in one-off surveys or focus groups about learning experiences or their views are considered within overall stakeholder research group processes, there has been little research into the particular contribution of students as a key stakeholder group in a broader range of contexts and in ongoing research phases.

Research by Hoppes and Chesbro (2003) into effective allied health instructional processes highlighted the similarity of student and academic views in many aspects such as communication skills, theory-practice relationship, quality preparation/organisation and subject knowledge. However there were also differences in stakeholder perspectives, with academics valuing intellectual challenge as important and students highlighting flexible teaching approaches. While many researchers have valued student views, some researchers have also expressed concern about the potential for student opinions to be considered equally with academic perspectives in relation to effective teaching approaches (McCuddy & Pirie, 2007).

The knowledge-use dissemination model recommends stakeholder involvement throughout the decision-making process by establishing extended workshops, ongoing contacts and follow-up action (Floyd, 2001; Louis & Dentler, 1988). In this way, a community of learners approach is followed, with the exchange of perspectives, materials, resources and interactive processes of implementation with researchers and stakeholders eventually developing shared solutions to problems of mutual interest (Hutchinson & Huberman, 1993). Through ongoing processes of involvement and dissemination, including strategies of consultation, collaboration and support, educational change in individuals, systems and organisations is facilitated (Louis & van Velzen, 1988; ALTC, 2008; Weerts, 2007).

The aim of our current research has been to collaboratively develop and trial competency graduated descriptors for early and late stage pharmacy placements, and to include a significant role for students within the research process. Our research question contained two elements: (i) What graduated descriptors for pharmacy competencies can be developed that will support students and preceptors in early and late experiential placement learning and (ii) what are the comparative views of various stakeholders groups, including students, within this collaborative developmental process?
This paper reports on the research processes and outcomes in the development of the competency graduated descriptors tool, with a particular focus on student responses and feedback.

**Research methodology**

The project methodology involved telephone interviews and literature updates regarding comparable developments in other health professions; development of draft competency graduated descriptors through workshops with key national student and other reference groups; and progressive refinement of materials through consultation with various stakeholder groups in each state and territory of Australia and at a national level.

Figure 1 summarises the involvement of students (and pharmacy academics, professional organisations/preceptors as other stakeholder groups) in various methodological stages in Project 1 (in 2007) and Project 2 (2008–2010) at the state/territory or national levels, with student involvement highlighted. For example, as Figure 1 indicates, in relation to Project 2, student leaders contributed to initial ideas for the competency graduated descriptors for early and late placement students and students within states and territories then supported the development of the graduated descriptors self-assessment and feedback tool. Students were also involved in providing an indication of support needed for each of the competency areas at early and late placement. National student leaders provided additional feedback regarding the finalised tool. As shown, future processes will include development of a training package, pilot testing of the tool and evaluation with students; finalisation of competency graduated descriptors tool and dissemination.

**Figure 1: Stakeholder involvement in Project 1 and Project 2**

(*indicates student involvement in various project aspects)
Examining the research methodologies in more detail, in the initial phase of this project, discussions occurred with members from other health-related teaching and learning projects and literature review work was undertaken. Summary materials were prepared for workshopping with student leaders at the national pharmacy school student leaders’ conference. At the third conference workshop, students worked in small groups to identify the characteristics of “early” and “late” placement students. The designation of “early” had been developed to indicate students who were commencing the university program phase of attending extended periods of clinical practice, whereas “late” referred to students who were near completion of their program. Students were asked to consider developmental phases of competencies as raised in the literature by Benner (1984) and Dreyfus and Dreyfus (1996), which included time taken, level of support needed, clinical knowledge application skills and the degree of client focus. Student groups recorded their responses in writing. Student ideas were subsequently examined by a reference group consisting of academics and professional/registration/preceptor representatives. Further expansion of descriptors for early and late placement students in each of the eight functional competencies then occurred, with a seventeen page document developed.

During a four-month period, further consultations were held in each of the Australian states and territories, with each university pharmacy school involved. Over 200 participants attended within 36 focus group sessions and 13 individual interviews. One hundred and two students, 47 academics, and 52 professional/registration/preceptors were involved, with 20 respondents at an international pharmacy conference also providing feedback. Invitations to participate were distributed through contacting relevant organisations in each location. Late-stage pharmacy students were generally recruited through their student representatives who had attended the national student forum.

Introductory materials about the project and detailed graduated descriptors charts were forwarded prior to the sessions. Consultation sessions generally involved an introduction to the project; discussion about competencies including introducing pharmacy competency functional areas; sharing ideas about successful strategies to support university students in developing competencies at university and within placements; and examining various versions of the graduated descriptors tool and providing feedback. The researcher took written notes in each of the consultation meetings. Sessions concluded with attendees individually completing a five-point Likert scale chart indicating their expectations about each broad competency area in terms of the degree to which supervisor assistance or guidance is generally needed for early level or late placement students.

Focus group consultation comments were collated through the researcher reading and manually noting key emergent themes. Analysis occurred through comparative processes in regard to various competencies, stakeholder groups and states and territories, as well as responses associated with particular universities.

The competency graduated descriptors tool was gradually refined during the consultation process in response to feedback from the various groups. In the final round of consultations in two states, student groups completed the competency graduated descriptors tool as an actual self-assessment process and then discussed their experiences of this process in relation to the tool. After finalisation of the tool, further feedback and discussion about future directions occurred at the annual pharmacy school national student leaders’ conference, the fourth occasion at which the ALTC project team had consulted with student leaders.
Results

Results consist of pre-development feedback from the national student leaders’ workshop; data from stakeholder consultations, including student focus group sessions held at participating universities; data revealing expectations about levels of support required for early and late stage placements; the final tool exemplar and the national student leaders’ feedback.

National student leaders’ workshop feedback

Student groups at the conference workshop provided verbal and written feedback regarding identification of characteristics for early and late placement students for the eight competency functional areas. For example, regarding the functional area concerning dispensing, students identified early placement student characteristics as having ‘limited understanding of prescription authenticity’, ‘limited drug interaction knowledge leading to decreased action taking and recording skills’ and ‘limited ability (at a slow rate) to dispense systematically and only some understanding of legal requirements’. However characteristics for late placement students were outlined as including ‘has an elevated understanding of prescription authenticity and can identify and apply some protocols in relation to accuracy’, ‘moderate knowledge of prescribed meds in specific areas’ and ‘increased dispensing, ability to dispense systematically and legally with decreased error frequency… and somewhat increased responsibility of error and recording’.

In addition, highly favourable feedback was received about the notion of the graduated descriptors tool and the process of the workshop, with students being particularly appreciative of the opportunity to be involved in the research process. Feedback included students valuing opportunities for involvement in a student-centred topic; positive response regarding the potential of the tool in making experiential learning relevant, including the opportunity to discuss what is required in a professional setting. Students also commented that they appreciated that throughout the various phases of the project over several years, the researchers had been providing them with ongoing information. Students also responded positively to being able to take information back to their local student pharmacy branches and involve other students in the future state/territory consultations to progress the profession. They also appreciated the use of group work to assist understanding and having plenty of discussion time available within the workshop sessions.

Examples of national student leader comments included:

This was very useful as we did not touch on any competencies in our course at uni. This makes me think about my own competency levels as a student and what is expected of me.

Good to have students involved with the (consultation) session … it means we can be more involved with making an experiential learning activity more relevant and effective. Also using competency standards means that we as students know what is required of us in a professional setting.
Stakeholder consultations at participating universities
In the focus group consultations, six key themes arose regarding the format and value of graduated descriptors competency tool:

1. university-profession competency continuum;
2. grid competency developmental aspects;
3. self-assessment and reflection focus;
4. clear expectations and feedback;
5. preceptor support and training; and
6. university and preceptor scaffolded student learning.

While the focus of the results presented below is student responses, there was generally alignment of their responses with those from other stakeholder groups and this will be highlighted.

1. University-profession competency continuum
This first theme showed a positive response from all stakeholder groups towards the notion of a graduated descriptors grid. The overall concept of developmental processes related to early and late university student placements of needing assistance (instruction, direction) or guidance (prompting, cues) was positively received. Early introduction of broad areas of the competencies within university programs was valued as ‘starting the journey’. This view is shown in a student comment about the value of having ‘levels to meet as it gives more focus to us about where we’re going’. This is consistent with a comment from a professional/registration board representative that: ‘as students go through university placements ... [there is a] need to know what students must do to get to the next level’.

2. Grid competency developmental aspects
Second, students and other stakeholder groups valued the consultation grid features in connection with each of the competency functional areas providing early and late placement cues. Students supported the use of the tool’s four aspects for early and late placement descriptors related to time taken for tasks, level of support required, degree of client focus and clinical problem-solving with a continuum of tick boxes provided for self-assessment and feedback purposes. One student indicated ‘it would be good to be able to … compare between each placement … how much improvement you’ve made … it would be good to have something visual’. This is congruent with a preceptor/registration board representative comment that it was ‘good that you have what is expected (clear descriptors under competency functional areas) … rather than just the headings’.

3. Self-assessment and reflection focus
Another key theme arising about the graduated descriptors tool is that it provides opportunities for self-assessment and reflection. A student commented on this with a statement that: ‘I’d love to see how my preceptor thought of me compared to how I think about myself’. Student responses were consistent with other groups, with an academic stating that: ‘it’s good if students can self-assess first and then take it to their preceptor…it’s another way of opening up communication with the preceptor ... and they can sit down at the end and discuss’.

4. Clear expectations and feedback
Fourth, the value of the grid in more extended placements as a feedback tool for students for clarifying expectations and for discussions between students and preceptors was highlighted. One student commented that ‘it’s a good idea to get a basis before we go on placement so we
know where we stand. You can hand it to your preceptor ... something to work with when you get there’. Similarly, respondents such as preceptors stated that ‘students could self-assess these ... that would be useful for me’.

5. Preceptor support and training
In a fifth theme, students believed that the tool would support preceptors in their supervision role through providing greater clarity about the key features of the competencies and the developmental stages as knowledge and skills were progressively developed. This was reflected in a student comment: ‘You could say to the preceptor, do you think you could help me with this skill? They could give you pointers for the future’. Students’ views about the support for preceptors show consistency with professional/registration board responses on the preceptor training potential of the tool: ‘This is a useful training document for preceptors to get preceptors to understand the general way they’re going’.

6. University and preceptor scaffolding and student learning
The sixth theme is that the tool highlights successful academic and preceptor scaffolding processes at the pre-placement and during placement phases. The pre-placement steps raised by respondents relate to improving communication/counselling skills including universities providing protocol frameworks and in-class peer/tutor (including filming). During placement phases, preceptor role play practice, pharmacy preliminary discussions regarding problem solving; and co-counselling on placement with the preceptor were effective scaffolding approaches raised. A student example comment regarding scaffolding is that graduates ‘Should finish university with counselling skills and not need prompting, follow protocols in a flexible manner’.

Student expectations chart regarding levels of support
Another area of the project involving student views were the records kept regarding expectations of levels of support for early and late placement student. Respondents indicated expectations of students needing assistance (direction, instruction) (shown as ‘1’), minimal assistance (‘2’), with guidance (prompting, cues) (‘3’), minimal guidance (‘4’) and independently (‘5’). Student responses were analysed across the eight competency functional areas and responses were compared with those of other stakeholder groups.

For early placement students, there was consistency of views across institutions, stakeholder groups and across the eight functional areas about students needing assistance (instruction, direction) or minimal assistance in terms of levels of support.

For late placement students, the overall competency indicator was calculated (using the 1: ‘assistance’ to 5: ‘independent’ scale) across the eight competency functional areas. Results were 4.0 (minimal guidance: prompting, cues) for students (n=102), 3.2 (with guidance) for academics (n=47) and 3.0 (with guidance) for professional/registration/preceptors (n=52). In regard to late placement, across all functional areas of competencies, students consistently indicated expectations of lower levels of support being required at the late placement phase, with academics and professional/registration/preceptors generally aligned and expecting that greater levels of support would be required.

Final tool exemplar and national student leader responses
Based on the feedback from all of the various consultation focus groups, the competencies graduated descriptors tool was finalised. An example of the final tool for one of the eight
The national student leaders’ feedback on the appearance and usefulness of the tool at the 2010 annual conference provided comments ranging from “it’s not that hard to get your head around” to “pages are rather busy and daunting”; “too blue” to “bigger comments box needed to be more reflective”. These views were considered further by the project team. More importantly the project team was keen to know whether student could use the tool to make judgements about their support needs. Students were asked in groups to draw word pictures of students undertaking a task at the early or late placement level. All groups achieved this task without difficulty thereby indicating to the project team that the tool had achieved its aim. The following instance illustrates that students were able to identify student characteristics in regard to a dispensing task:

- early placement student: ‘Product selection. Label errors, focussed purely on getting labelling correct rather than checking appropriateness for patient’; and
- late placement student: ‘Efficient, accurate checking therapeutics – interactions, correct doses and formulation’.

**Figure 2: Functional area 4 competency graduated descriptors self-assessment and feedback tool**

**Discussion**

Students were involved as key stakeholders over a four year period in two research projects to potentially improve pharmacy experiential placements. Both student leaders and representatives from the wider student group at individual pharmacy schools across Australia contributed feedback and were involved in ongoing decision-making rather than providing only one-off evaluative feedback.
Along with pharmacy professionals and academics, students were a key group in these processes. As highlighted in the research literature (Hutchinson & Huberman, 1993), in this current study student and other stakeholder contributions were informing the research process at all phases from inception to implementation to evaluation and future decision-making. Students as a particular group indicated high satisfaction at being involved in the various research process phases. This was evident from both the high student attendance numbers and the fact that some students in the institutional consultations attended after-hours consultations after completing their day’s work at offsite placements.

Reflecting previous research findings outlined earlier in this paper (Hoppes & Chesbro, 2003; McDowell & Sambell, 1999), student views in this research were frequently consistent with those of other stakeholders. For example, similar to McDowell and Sambell’s (1999) findings, students in this current research highlighted the value of the competency graduated descriptors tool in the provision of feedback and opportunities for self-assessment. Students and other stakeholders also identified the value of the tool in providing a continuum during various preparatory phases from university to registration; the support provided for preceptors in their role, and provision of clearer expectations for students and preceptors. Barriers to valuing student opinion as outlined in some research (McCuddy & Pirie, 2007) including concerns about poor student knowledge of assessment, inappropriate student views, and student lack of objectivity, were not issues for this current research. Indeed, consistent with McDowell and Sambell’s findings, students seemed to be ‘at least as well-informed as some other stakeholders’ (1999, p. 121). Similarly, rather than seeking ‘an easy ride’, students valued assessment linked to supporting the learning process, learner-centred approaches and collaborative teacher-student relationships.

It should be noted that in this research, students involved were student pharmacy leaders attending a national conference or students prepared to attend additional lunchtime or after-hours workshop sessions. In addition, a trusting relationship was built over a four year period between the researchers and the national pharmacy student association, with student views being highly valued rather than involvement in a mere lip service consultation. In terms of future developments, the competency graduated descriptors tool developed through collaborative consultation is currently undergoing trialling and a version has been developed for trialling with interns and preceptors.

**Conclusion**

The research process described in this paper has engaged students in an enhanced degree experience and in developing transferable skills for application to their future careers. Given that pharmacy students are the pharmacists of the future and there is an increasing emphasis on patient/client-centred approaches and collaborative professional relationships, this current research is important. Collaborative relationships are particularly important for university pharmacy schools within the newly-emergent National Board context, with student views needing to be considered within the university-Board decision making processes and context.

The research has application across various professions and recognises the continuum for students as they gradually develop their skills and competencies in preparation for registration/work commencement within their professions. Universities have an important role to play within the professional context, particularly in terms of students being involved in formulating materials about their learning, and valuing their broader involvement within the educational research and wider professional process.
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References


