
For the right prescription – blending high fidelity simulation into a curriculum for counter prescribing and communication to improve the industry readiness of pharmacy graduates.

OVERVIEW: Counter prescribing is a complex role that pharmacy graduates are expected to perform competently by industry and patients equally. Historically, beginning pharmacy practitioners have been prepared inadequately for this role. Improving the industry readiness of pharmacy graduates is an ongoing challenge for Pharmacy curriculum designers across the university sector. Three years of evidence from this innovative simulation project provides an authentic way forward.

As an accredited pharmacist with extensive experience in public hospital, private community and consultant pharmacy sectors, I am now an early career academic. This broad experience has led to an enthusiasm for exploring the expanding professional roles of current and future Pharmacists. The difficulty has always been to ensure our graduate pharmacists are well prepared to face the challenges of their early career with confidence and proficiency. This is now being achieved through the integration of high fidelity simulation into the pharmacy curriculum; specifically by way of the use of simulated [volunteer] patients who enact modeled scenarios designed to teach counter prescribing and communication skills. My work is contributing to the resolution of the difficulties encountered by the student and newly graduated pharmacist as well as promoting their independence and success in this important professional role. Additional academic roles that have enabled me to contribute to quality learning and teaching outcomes include, Year Level Coordinator and Academic advisor in the Bachelor of Pharmacy Program, executive organizing committee member of the 2010 ANZAME conference and a part time role as Associate Dean, Teaching and Learning. As such, I have devised, implemented or been involved significantly in the development of innovative programs in Pharmacy and Medicine, demonstrating a sustained and meaningful contribution to student learning.

CRITERION 1. APPROACHES TO THE SUPPORT OF LEARNING AND TEACHING THAT INFLUENCE, MOTIVATE AND INSPIRE STUDENTS TO LEARN

The right prescription: Health Care for Pharmacists is a program that contains a seven week module designed to demonstrate, teach and assess the necessary skills for pharmacists to undertake basic counter prescribing, focusing on identifying common self-limiting conditions, the supply and use of Schedule 2 and Schedule 3 medicines, the referral process, and the communication process. The skill of counter prescribing was identified as deficient by both the accrediting body of our degree program and industry partners. This situation was not unique to the James Cook University Pharmacy course. The challenge was to create a high fidelity environment that reflected common and realistic scenarios in order to both wholly motivate the students and prepare them for both clinical placement and future practice as interns and registered pharmacists. We needed a process that would enliven the student experience in this vital arena. It was this challenge that I undertook starting four years ago and can be described in a number of categories;

Program design to reflect industry standards and real-life practice: I saw the need to include in the program contemporary industry standards and examples of real life practice which are necessary to succeed in professional practice. This would be the path to motivating and inspiring students to engage. Consequently, I designed the subject *Health Care for Pharmacists* from the ground up, intentionally using a highly ordered approach that included scenario based learning, simulation and small group learning, as a means of addressing this gap experienced by students on practicum and many intern pharmacists. From the first week, the program develops the necessary foundations for a structured approach to the counter prescribing process and provides the scaffolding necessary to simultaneously improve communication skills (another area our students were underperforming). This approach develops the students' understanding of the various pharmacy protocols and encourages them to create an individualised process that is complete, logical and that parallel the industry recognized Competency Standards for Pharmacists in Australia (Pharmaceutical Society of Australia 2010) and the Standards for the Provision of Pharmacy Medicines and Pharmacist Only Medicines in Community Pharmacy (Pharmaceutical Society of Australia 2006). The program content sequentially address nine broad areas that include nutrition, infectious diseases, neurological presentations, reproductive and women's health, common infant presentations, tropical diseases, complementary and alternative medicines, and wound management. In addition to formulating a differential diagnosis, the process is also considered from the perspective of pharmacology, side effects and contraindications of treating medications, referral warning signs, and the expected duration of therapy.

High fidelity learning environment combined with small group learning opportunities: The question I faced was how to get a high fidelity student experience into the program paralleled with a quality feedback mechanism. I found a pathway through simulated patients combined with small group learning. Over three consecutive years, the program has utilised scenarios that incorporate simulated patients (volunteer actors) in a small group learning environment with a ratio of 4 students: 1 simulated patient and supervised by an experienced practicing pharmacist. This allows students the opportunity to practice applying their recently acquired clinical knowledge and communication skills within the authentic

context of an Australian community pharmacy practice. This dynamic approach to teaching such a high-level skill is unique amongst Australian pharmacy schools. The workshop component is structured around a scenario, performed by a simulated (volunteer) patient, and responded to by the student. Each week, every student: interviews, diagnoses, identifies appropriate therapy and finally counsels their patient. This process is observed by the other three students in the group both maximizing student exposure to the number of interventions and exposing the 'observing students' to the practice of constructive feedback. I have amplified the impact of this small group teaching approach through a "hands-on" experience that applies and reinforces the theoretical content as well as providing for corrective verbal feedback from the pharmacist tutors, the simulated patient and the observing students. This collective feedback process ensures that not only do students receive positive reinforcement of their individual strengths and have areas for improvement identified, but exposes other students to the practice of critical appraisal, a skill very important in future pharmacy careers. This collective approach capitalises on specific and immediate feedback that allows each student to closely relate the appraisal with their own performance and the ability to compare it with their own observations of others within that group. The effect on students has been most encouraging. It has lifted their whole experience.

Program material structured to achieve graduated complexity, student engagement and confidence: Next, the program needed to layer advanced knowledge upon earlier foundation knowledge to enable students to manage complex, realistic situations while at the same time achieving a high degree of student engagement and confidence. I combined the key strategies of scaffolding and using a graduated approach to knowledge and skill acquisition. Over the period of a week, subject material is focused on a defined topic area and is delivered so that through scaffolding, it builds upon previous material in detail and complexity as well as attempting to identify relevant prior student experiences. The scaffold approach eventually builds sufficient capacity for the students to engage in a "live" practice session with the simulated patient. Each week the students participate in two hours of patient clinics. Additional reading materials are set to bring focus on specific content detail. For example, both the preparatory reading material and lecture material may consider aspects of treating a patient who presents with musculoskeletal pain. This initial material is then reflected directly in a case study during the tutorial session in which the student is assisted to apply the information to a realistic practice scenario about pain. The aim of this is to provide an exemplar of the application of the readings and lecture material as well as begin to develop a '*situational awareness*' of the problem. This is the first time they are asked to consider how they would handle the given problem. Once the student has participated in applying the lecture material to the example case, they are then later exposed to a simulated patient, where they apply lessons from the lecture and tutorial as well as practice patient-professional communication. This deliberately graduated approach is designed to allow the student to begin to put the problem into a context to which they can relate, promotes student engagement with the material and subject, encourages self confidence and promotes a rapid mastery of the material.

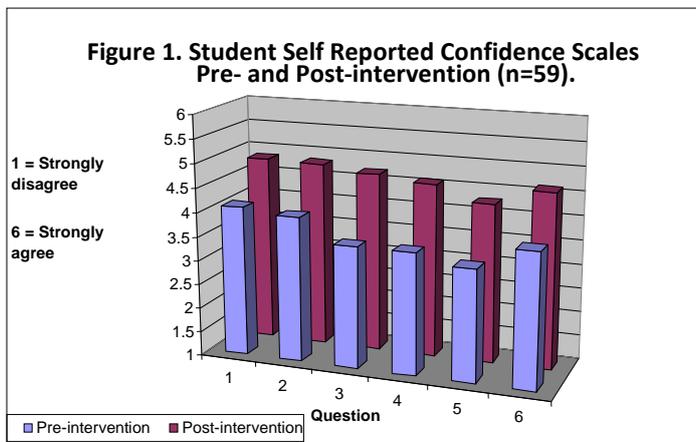
Tailored Feedback. Rapid mastery of the practiced skill is associated closely with prompt, high quality feedback. Considering this, I worked on designing a feedback process that is explicitly built into the subject in a way that promptly identifies the student's strengths and weaknesses thus enabling self reflection and encourages self-analysis. This immediate feedback combined with critical appraisal of peers allows the student to reflect upon their ability and prompts discussion about new ways to overcome deficiencies. Providing quality feedback is integral to successful outcomes so this key process is emphasized to the supervising tutors. Consistency of feedback and marking is achieved using a feedback and marking tool designed specifically for these sessions to support tutor feedback. This assessment and feedback tool considers six broad areas of skill: information gathering, differential diagnosis, information delivery, professional language & communication, encouraging patient participation in the consultation and overall organization. To ensure uniformity across tutors, the feedback is recorded and collated after each session. The volunteer patients are also offered the opportunity to share their observations, which provide the student with valuable insight into the patients' experience promoting understanding and empathy. The small groups are designed specifically to allow pharmacist tutors to provide a very high level of individualized feedback to every student every week in aspects of technical knowledge, interventional structure and communication ability.

EVIDENCE OF IMPACT ON STUDENT LEARNING

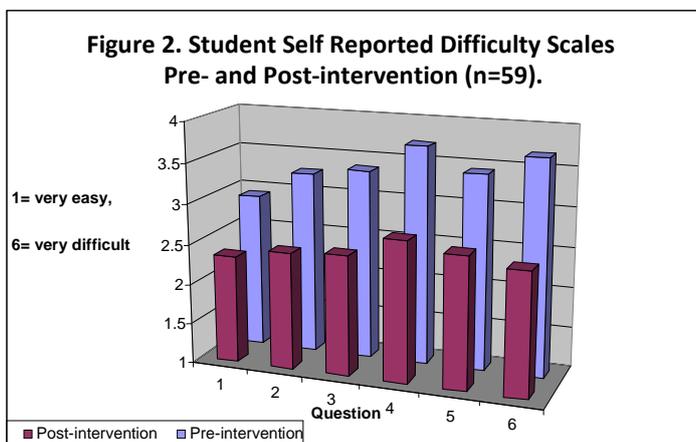
This program has required the development of an approach that motivates students to learn. Three years of student results and feedback suggest that these interventions have been very well received by students, at the same time providing a considerable but measured challenge for them. As already discussed, students were assessed formatively on the six broad areas of counter prescribing. For each of the three years, students have demonstrated a consistent and rapid improvement in skill level for the duration of exposure and demonstrated the retention of these skills eight weeks later during a post-intervention follow-up and after graduation and commencement of their intern year some 18 months later (evidenced by graduate and industry feedback).

General observations of the 2009-2011 Level 3 cohort and comparisons with the 2009 Level 4 cohort (who were not exposed to the simulated patients) reveal a significant change in students' ratings on the self reported confidence and

difficulty scales. These were deployed pre and post the implementation of the simulated patient teaching method and show a significant improvement in student confidence and perception of the difficulty of conducting an intervention. That is; it seemed less difficult, and students reported greater confidence following exposure to the teaching strategy (Figures 1 & 2 respectively). This was mirrored by rapid development of the students ability to respond appropriately in a consultation following exposure to this authentic learning environment.



- Key – Figure 1 questions
1. I am confident in communicating with patients.
 2. I am confident I have sufficient communication skills.
 3. I feel comfortable with my structured approach to counselling.
 4. I am confident I deliver complete information in a logical manner.
 5. I feel comfortable in my ability to answer questions.



- Key – figure 2 questions
1. I find communicating with patients...
 2. I find gathering clinical information...
 3. I find delivering information...
 4. I find delivering sensitive information...
 5. I find meeting patients information needs...
 6. I find implementing a structured approach to my interviewing and counselling process...

Students were generally very satisfied with and enthusiastic about the teaching involving simulated patients, they came well prepared for their counseling sessions, and reported a high degree of enthusiasm, satisfaction and engagement with the teaching strategy. Anecdotal reports from supervising placement pharmacists reported significant improvements in student ability whilst on clinical placement and on commencement of their intern year after graduation. Overall, subject feedback (SFS) was very positive. Analysis of Student feedback on teaching (SFT) for this subject demonstrated a high level of student acceptance for the teaching methods that I designed and implemented. Further, the written comments demonstrate uniformly very high levels of satisfaction and, more importantly, a strong recognition by students of the place these skills will have in their future careers. An excerpt of comments for Health Care for Pharmacists is in table 1.

Table 1 – excerpt of student comments from student feedback on teaching

Students Verbatim Comment for Health Care for Pharmacists

“John is an outstanding lecturer – his passion for the degree is reflected in his effort in making the subject interesting, appropriate and understandable. Very much appreciative of the OTC subject!! Thanks for all your work.”

“Thanks for being enthusiastic over this material. Made everything more interesting. I learned a lot from the counseling exercises. Thank you for providing us with the facilities to practice on patients. The lectures were interesting and well informed. Explanation of misunderstood concepts were excellent...”

"A highly enjoyable subject due to excellent teaching. Lectures were interesting and relevant and John cultivated a high level of enthusiasm. A lot of effort was clearly exerted on his behalf and I appreciated it."

"I think John and his other staff members have done an excellent job in the organization of this subject. I felt the counseling sessions were a fantastic tool to reinforce the knowledge we had learnt in this subject."

The graph SFT analysis for the subject (PC3102) is located at figure 3 below. Feedback scores for the subject are above previous SFT results and above the JCU mean. Further, SFS results for PC3102 in 2009 were compared with the results for PC3202 (the subject it replaced from 2009) for 2008 and 2006. Figure 4 shows significant improvements in almost all aspects of student feedback for the subject compared with the 2 previous years measured (2008 in red and 2006 in green) for PC3202. Following positive industry and graduate feedback from the last 3 years, this program will be expanded to a 13 week program from 2012.

Figure 3 – SFT analysis 2009 semester 1 PC3102
2006 to 2009

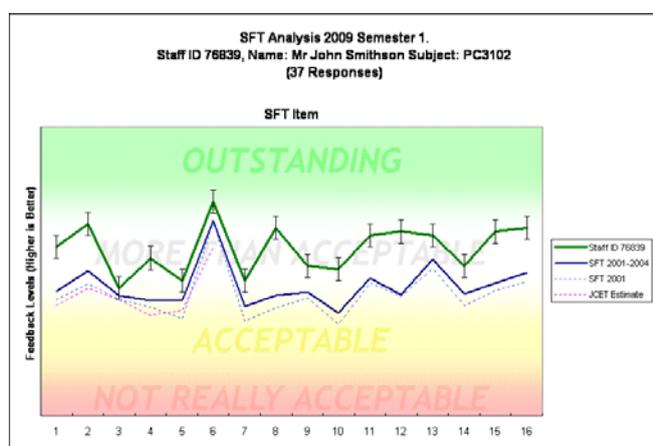
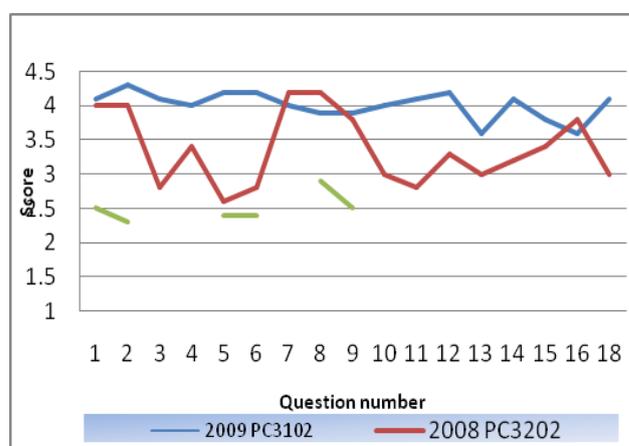


Figure 4 – SFS results for PC3102 and PC3202,
2006 to 2009



EVIDENCE OF IMPACT FROM THE PHARMACY INDUSTRY

The ultimate aim of this intervention was to better prepare undergraduate students for diagnosis and counter prescribing, improve their confidence in providing this type of intervention and to enable them to meet industry and community expectations in the practice environment, both before graduation and during their intern year. Feedback from industry partners, those who supervise the students while on placement, and those who employ our pharmacy graduates after, indicate a positive and measurable improvement in the students' abilities to counter prescribe and communicate with patients – a vital skill in pharmacy practise. The following statements are excerpts from feedback by community pharmacists who have observed and employed JCU pharmacy students and graduates over the past 10 years;

"In recent years as preceptor to 3rd and 4th year JCU pharmacy students, I have most certainly noticed an overall improvement in the confidence and ability of students to recommend OTC products and diagnose minor ailments. The students generally have a good awareness of OTC brands and active ingredients before commencing placement and it seems they are also well practiced in asking questions and gathering information from clients when diagnosing OTC ailments." Chris Richardson, Pharmacist and pharmacy owner.

"I've noticed over the last two years that the students have an increased awareness of OTC conditions and products. They appear to have a more systematic approach to assessing patient requests and symptoms. I have found that it has given them confidence in approaching patients, and as a result has also improved their ability to both counsel and collect patient information. It also appears that the additional knowledge and exposure to the OTC elements has made our placement site a little less daunting for the students." Jillian Reedy, Pharmacist Manager.

Simulated patients are proving a highly effective teaching tool to impart job-ready communication and counter-prescribing intervention skills to pharmacy students and graduates through lifting their motivation and engagement with learning.