

**Teaching philosophy applied in didactic
teaching activities –
Chronic pain assessment and
management and an application in clinical
education**
Pedagogiskt docenturarbete

Allan Abbott

DATUM 2016-06-14

Defining and applying a reflective teaching philosophy based on pedagogical science as well as the values, beliefs and experiences of the teacher provides an important tool for a teacher's pedagogical development. A reflective teaching philosophy statement is an essential part of forming a pedagogical portfolio which outlines concrete examples of a teacher's pedagogical competency and skills in a specific field of teaching.

The following pedagogical portfolio provides extracts of my pedagogical development with concrete examples applied to the field of teaching pain assessment and management. This pedagogical portfolio was developed as a part of my Associate Professor appointment at Bond University in Australia. Since commencing my current appointment at Linköping University, I have strived to apply my teaching philosophy in my teaching and curriculum development. I believe that my pedagogical portfolio with its international perspective can provide an expansive example of pedagogical portfolio development. In particular, my example of developing my teaching philosophy and displaying its application in my teaching, clinical supervision as well as curriculum development and assessment is informative for the medical faculty at Linköping University. My pedagogical portfolio is however a living document will be further developed to display a lifelong progression in my reflective teaching philosophy and its application in teaching and curricular development at Linköping University.

Teaching Philosophy Statement

Allan Abbott

1. Conceptualisation of learning

My philosophy is to adopt a pragmatic view to learning inspired by constructivist and social learning theory. This perspective to learning combines individual's experience, perceptions, cognitions and behaviours as the building blocks for the construction of new knowledge. Through motivating the individual and optimising the learning environment one can optimise the construction/re-construction of new knowledge. I view the process of effective learning in health and medical disciplines as a life long journey involving four main areas: learning how to learn, learning professional practice, learning how to teach and teaching how to teach.

2. Conceptualisation of teaching

My teaching philosophy is based on a respect for the diversity of learning styles and educational goals of the students with whom I have the privilege of engaging in a co-learning experience. I aim to create a positive and conducive environment to enable exchange of ideas among students and with the teacher. I therefore work as a knowledge facilitator rather than knowledge disseminator.

I believe that by educating students about learning and teaching styles and designing learning activities to complement varying learning styles, this can facilitate learning. I also believe in promoting active learning so that students can establish their individual goals, and actively explore literature to provide state of the art knowledge. A further progression of active learning is the application of learnt concepts into teaching situations. Active learning encourages students to take initiative regarding their education and fosters a sense of commitment and dedication which is instrumental in their professional role as health care providers and life-long learners.

I have a student-oriented approach to the extent that I strive for students to get the best possible learning experience. To enable a student centered approach to learning, I believe it is important to be accessible, and give timely and specific feedback. I want my students throughout the delivery of courses knowing what they have done well and having clear strategies for what they can improve on. Similarly, I strive for acting upon constructive feedback on how I can improve the delivery of learning activities.

I believe that learning activities should focus on preparing students for real life situations. Learning activities designed around realistic situations is a recognised principle used to facilitate reflective learning in health and medical education. This gives students opportunities to creatively combine their real life experiences and classrooms learning. Such an approach stimulates the students in making connection between their existing knowledge base and the new learning which helps them to acquire skills that are readily transferable to real-life situations.

3. Goals for students

I have three primary goals for students, which I align the learning activities and assessment to. Firstly, I want students to learn how to think critically about the topics presented in the

classroom and also about information that they are exposed to in professional practice. Learning activities are therefore focused on critically evaluating available literature as well as considering the professional context and patient perspectives. The second goal is to give students experience of working collaboratively in a team environment similar to that in a health care service workplace. Problem based learning tutorials provide this learning opportunity for experiencing group dynamics. Thirdly, I want my students to enjoy learning and applying learnt concepts practically. Practical demonstration, structured student role-play scenarios and standardised patients scenarios are examples of aligned learning activities used.

4. Implementation of the philosophy

To operationalize my teaching philosophy I endeavor to schedule time for individual student consultation to assist students with goal setting and feedback. I also endeavor to base teaching on real case examples to provide students with concrete experiences to reflect upon. Furthermore by providing structured patient examination and clinical reasoning into teaching as well as providing hands on practical demonstration and facilitation of student practice, one can create a positive and conducive environment for all learners.

5. Professional growth plan

In order to improve my teaching ability, I welcome feedback. I encourage students to give feedback about my teaching strategies and course structure by providing them the opportunity to formally evaluate this midway and at the end of the course. It is always a positive experience to address their concerns and make changes as needed.

Being aware of the ongoing research and new innovations in my areas of expertise is an important priority to me. In the realm of evidence-based practice, the educators should deliver the education that is reflective of “best practice”. I believe that the educators should constantly reflect on the course content, teaching methods, and whether the knowledge that they are imparting is the most current or not. A reflective teacher can deliver state of the art knowledge in a dynamic learner-centred environment using the most suitable teaching practices.

In the short-term future, I would like to develop a pain management course. This course would be developed to meet the practical needs of health care professional who are often unfamiliar with theoretical frameworks and evidence-based interventions to optimally treat pain. In addition I would like to further develop the implementation of simulated patient learning activities and evidence-based decision-support tools into existing into the curriculum of the Doctor of Physiotherapy program at Bond University. Similarly I would like to further develop the research curriculum offered at Bond University. In the long-term future, I hope to continue to advise graduate students at the doctoral and post-doctoral level in relevant fields of study.

In summary, my teaching approach is a combination of student-centred approach, stimulating critical thinking in students and facilitating knowledge exchange to empower students for dealing with real world situations.

An example of my teaching philosophy applied in a didactic teaching activity

Microteaching session title: Chronic pain assessment and management

Allan Abbott

Learning outcomes

Upon completion of the microteaching session, the participants will be able to:

- 1) Describe relevant questions to ask a patient that will assist in the assessment of chronic pain.
- 2) Describe the evidence based principles of chronic pain management

Accommodation of learning styles in the microteaching session

The term “learning style” can be defined as the combination of cognitive, affective, and physiological factors that affect how learners perceive, interact with, and respond to the learning environment (1). There are many models categorizing learning styles but no consensus regarding the establishment of a single set of accepted principles

According to Kolb (2), the following learning styles exist:

- Concrete experience: A receptive, experience based approach to learning that relies on judgments based on feelings. Individuals tend to be empathetic and people oriented. They are not primarily interested in theory but more in treating each case as unique and learn best from specific examples. In their learning they are more oriented towards peers than to authority and they learn best from discussion and feedback with fellow concrete experience learners.
- Reflective observation: A tentative, impartial and reflective approach to learning. They rely on careful observation of others and like to develop observations about their own experience. They tend to be introverts and like the lecture format to learning so they can be impartial objective observers.
- Abstract conceptualization: An analytical, conceptual approach to learning based on logical thinking and rational evaluation. These learners are oriented to things rather than to people. They learn best from authority-directed learning situations that emphasize theory. They don't benefit from unstructured discovery type learning approaches.
- Active experimentation: An active, doing approach to learning that relies heavily on experimentation. These learners learn best when they can engage in projects, homework, small group discussion. They don't like lectures, and tend to be extroverts.

In experiential learning theory, Kolb (2) describes how learning is conceived as a four stage cycle where concrete experience, reflective observation, abstract conceptualisation and active experimentation learning styles are utilised. Immediate concrete experience is the basis for observation and reflection. These observations are assimilated into a "theory" from which new implications for action can be deduced. These implications or hypotheses then serve as guides in acting to create new experiences.

Although Kolb thought of these learning styles as an experiential learning theory continuum that one moves through over time, usually people come to prefer, one style above the others.

And it is these main styles that instructors need to be aware of when creating instructional materials.

To accommodate the concrete experience and reflective observational learning styles, the microteaching session will be framed by a scenario in which a patient presents with chronic low back pain. This case will model clinical relevance as a motivation for learning. According to humanistic learning theory, a learner who is motivated in a learning activity becomes more autonomous and self-directed in their learning (3). According to a constructivist learning theory, the learning process involves construction of meaning from experiences through critical reflection on the learner's assumptions (3). Learning activities designed around realistic situations is a recognised principle used to facilitate reflective learning in health and medical education (4). The low back pain patient scenario will provide a framework for summarizing the steps of pain assessment, and clinical reasoning behind pain management strategies.

During the microteaching session, the participant's active involvement will be facilitated by answering questions placed by the lecturer to initiate and encourage brainstorming of concepts. Instructional prompts will be used requiring students to answer deep level questions and then encourage students to pose their own questions and explain their answers (5). According to cognitivist learning theory, brainstorming facilitates the learner to understand the structure of knowledge (3). Steinert & Snell (6) describes that learning increases when students are actively involved in the learning activity compared to passive reception of knowledge. Presenting information in a detailed, systematic, reasoned manner further accommodates the concrete experience and reflective observation learning styles (1).

Visual and auditory learning aides will be used to reinforce the steps of pain assessment, and clinical reasoning behind pain management strategies. A power point presentation using text with highlighting for emphasis of main points, as well as pictures and diagrams will be used as a visual learning aid. Additionally, the participant will receive handouts providing a clear outline of the steps of pain assessment, and clinical reasoning behind pain management strategies discussed in the power point presentation. Research has shown that students who listen to a lecture and afterwards review instructor-provided notes produce better outcomes than students recording notes during lectures (7). This will accommodate for the abstract conceptualisation learning style (1).

Based on social learning theory, the teacher is responsible for modelling new roles, guiding behaviours, and providing learners with opportunities to practice these new roles and behaviours (3). To accommodate participants with an active experimentation, more kinaesthetic learning style, a role play case study will be used to reinforce the steps of pain assessment, and clinical reasoning behind pain management strategies. This will be performed at the end of the microteaching session where participants will divide up into pairs. One person will role play the scenario patient and the other will role-play the therapist performing a subject assessment of the patient's chronic pain condition. A study by Linares (8) highlighted the dominance of the converging learning style in the health care professions which includes the application of abstract conceptualization into active experimentation.

Forms of knowledge incorporated into the learning experiences

By focusing the design of the learning activity on functioning knowledge and the positive reinforcement of learning styles involved in experiential learning, the microteaching session aims to facilitate participant attainment of the intended learning outcomes. Functioning

knowledge is based on the performance of the assessment and management of chronic pain which is underpinned by declarative knowledge of pain science and patient interviewing skills. This appropriate background knowledge facilitates deep learning on the student part and teaching by building on what the student already knows. To accomplish this, the microteaching learning activity and the intended learning outcomes will be constructive aligned to SOLO taxonomy level 4 (9).

Microteaching session learning plan

1. Learning objective:

Participants will gain an understanding of current evidence based recommendations regarding assessment and management of patients suffering from chronic pain.

2. Participants prior knowledge:

The microteaching session is directed to medical and health care professionals with prior knowledge and experience of working with patient suffering from pain. They have therefore had clinical exposure to treating patients directly. Participants have a background knowledge base in anatomy and pathophysiology and have a basic understanding of pain science.

3. Session requirements:

- A seminar room with a computer with projector link and PowerPoint software.
- A printed copy of the lecture notes
- A patient scenario and supporting questions for each participant in the session.

4. Session structure, learning activities and alignment with participant learning needs:

The session will begin with an enthusiastic brief 2 minute introduction of the topic including its clinical relevance and welcome participant questions throughout the session. As adult learners are often motivated more by relating the content delivered in the session with their previous knowledge and experience, a patient case scenario will be presented early in the session after introducing the learning objective and outcomes. The patient scenario will be presented on the power point slide and participants will have printed copy of the scenario. The description of the scenario in terms aligned with the learning objectives will take 2 minutes. Participants are encouraged to utilise this practical example to help reflect upon information delivered in the presentation. This will give ground to facilitate conceptualising and active experimenting as the session goes on.

At this stage some difficulties may arise for the participants. These may include:

- Eagerness of participants to start 'hands on' diagnosis and management may inhibit patience for learning more passive diagnostic considerations.
- Students have not known each other or the presenter for a long time. This may cause some inhibition in asking questions and getting involved.
- Participants may be familiar with the one-way delivery of information and therefore unfamiliar with participating actively in an interactive lecture.
- Limited clinical experience of participants may make it difficult to link personal experience to lesson content for maximised value.

Some contingencies to prevent these difficulties will include the use of probing questions to facilitate an interactive two way discussion of information. Examples of probing questions taking about 2 minutes will include:

- Does anyone have clinical experience with patients suffering from chronic pain? If anyone has, ask what led them to believe that the patient had chronic. Can they remember any specific assessment information that suggested the cause of chronic pain?
If no one has, explain that they will certainly encounter patients with chronic pain at some stage.
- What are the indicators of chronic pain can be found in this hypothetical patient description?
- What are the main questions you would like to ask the hypothetical patient to investigate the cause of chronic pain?

Building upon the discussion created, the presentation will proceed to present current evidence based recommendations regarding assessment and management of patients suffering from chronic pain. Main points will be highlighted and animated for emphasis. The content delivery will take 7 minutes. The final 7 minutes of the session be devoted to the role playing activity and group reflection on the role play performance to understand the process of assessment and management of a patient with chronic pain. The patient scenario will be brought back up on the slide and participants will be asked to point out the main aspects of the patient assessment and management. This summary will provide a sense of closure and encouragement by reinforcing professional satisfaction in being able to identify evidence based aspects of assessment and management of patients with chronic pain.

Learning outcome competency will be assessed by observing the participants perform the role playing task and having the learner complete a questionnaire on the topic covered in the learning activity.

Feedback from this microteaching session will also be sought through peer review.

References

1. Kolb DA. *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, New Jersey: Prentice-Hall. 1984.
2. Keefe JW. *Student learning styles: Diagnosing and prescribing programs*. Reston, VA: National Association of Secondary School Principals. 1979.
3. Torre DM, Daley BJ, Sebastian JL, Elnicki DM. Overview of current medical theories for medical educators. *The American Journal of Medicine*, 2006;119, 903-907.
4. Cutting MF, Susswein Saks N. Twelve tips for utilizing principles of learning to support medical education. *Medical Teacher*, 2011:1-5.
5. Craig SD, Sullins J, Witherspoon S, Gholson B.. The deep-level reasoning-question effect: The role of dialogue and deep-level-reasoning questions during vicarious learning. *Cognit Instruct* 2006;24, 565–591.
6. Steinert Y, Snell LS. Interactive lecturing: strategies for increasing participation in large group presentations. *Medical teacher*, 1999;21, No. 1.
7. Kiewra KA. Providing the instructor's notes: An effective addition to student notetaking. *Educational Psychologist*, 1985;20, 33-39.
8. Linares AZ. Learning styles of students and faculty in selected health care professions. *J Nurs Educ*. 1999;38(9), 407-14.
9. Biggs J, Tang C. *Teaching for quality learning at university, Second addition*, Open University Press, 2010.

An example of my teaching philosophy applied in clinical education
Implementation and evaluation of clinical supervision activity
Allan Abbott

Clinical education is an important element of physiotherapy curriculum in order to prepare students with adequate knowledge and skills to work as autonomous practitioners (WCPT Policies – Description of Physical Therapy, 2013). Supervision is also an important element of clinical education. The student's supervision is organised by supervising teachers from educational institutions together with supervising professionals (clinical educators) in the clinical workplace. The clinical educator has an important role in enhancing the students learning by being a positive role model and providing feedback (DeClute & Ladyshevsky, 1993). The main responsibility of clinical educators is to carry out the daily supervision of physiotherapy students during clinical placement and to provide mid placement formative feedback and end of placement summative feedback. The main responsibility of the supervising teacher from the educational institution is to provide independent pedagogical support for the student and clinical educator. The following clinical supervision activity plan will outline a clinical based viva activity supervised by a university based teacher designed to optimise student clinical performance before receiving mid unit evaluation and feedback from their clinical supervisors.

Description of the supervisee

The supervisee is a Bond University Doctor of Physiotherapy student on their first practical clinical placement. The clinical placement is a 5 week musculoskeletal physiotherapy placement in an orthopedic inpatient setting at Toowoomba Hospital.

Activity planned for supervision

The supervision activity planned is a clinical viva (Wass et al 2001). The use of a clinical viva provides a method of observational and oral assessment of student's clinical skills and reasoning (Clouder & Toms, 2008). The supervising teacher from Bond University (myself) will supervise the learning activity that the student will perform. This is performed early during the student's placement to prepare them for mid placement assessment and feedback from the clinical educator. The specific viva will be focused on the student's assessment and mobilisation of a patient day 1 after total knee replacement surgery.

Aim of the clinical activity

- To provide a reflective learning opportunity for the student
- To provide formative feedback to assist students to improve in physiotherapy clinical practice.
- To assist the student to improve on communication skills, assessment and management of in-patient orthopedic patients.

Learning outcomes of clinical activity

- Demonstrate an ability to collect appropriate information from the client, form a preliminary hypothesis, design and safely conduct an assessment
- Demonstrate an ability to make a sound clinical judgment based on examination of the

client

- Implement safe and effective physiotherapy intervention(s) with short and long term goals
- Evaluate the effectiveness and efficiency of physiotherapy intervention(s)

Method of gaining consent

When considering ethical issues regarding clinical supervision, one should begin with attaining informed consent. The purpose of informed consent is to protect the welfare of the client (orthopedic patient in this case), the supervisee's wellbeing and professional growth as well as the supervisor and profession. The informed consent related to the client involves their understanding and agreement to the procedure, supervision, the supervisee's level of training and the benefits from the supervision process (Bernard & Goodyear, 2009). In the present case, the patient was fully informed of these aspects and informed consent was received before the supervision activity was commenced.

Informed consent related to the supervisee requires the assurance that the supervisee understands what the supervision entails. This professional disclosure covers issues of mutual rights and responsibilities of all parties, the parameters of supervision methods of evaluation, desired outcomes, potential risks and benefits of participation in supervision (Bernard & Goodyear, 2009). In the present case the supervisee was fully informed of these aspects in the subject outline for the clinical placement and informed consent was received before the supervision activity was commenced.

Outline of proposed timetable

The supervision activity was performed on Tuesday 19/11, 11am at Toowoomba Hospital. The allocated time was a total of 1.5 hours. That time was divided up as follows:

- 15 minutes was allocated for a pre-brief between the supervisor and supervisee as well as ward preparation on the supervisee's behalf,
- 30 minutes was allocated for the subjective and physical assessment as well as treatment with patient,
- 15 minutes was allocated to documentation and ward team communication
- 30 minutes was allocated to supervisor-supervisee feedback.

Method used to evaluate activity

The aim of the assessment of this supervision activity is to impact positively on the student's future performance on their clinical placement. It provides targets that focus and drive the depth and direction of learning for students. For supervisors, assessment provides an opportunity for feedback to students on their performance, and allows the development of strategies to improve performance and attain learning outcomes. The assessment target in this case is focused on the student's clinical skills for which the learning outcomes are aligned to. Feedback was provided using reflective feedback conversation (Cantillon & Sargeant, 2008).

The Assessment of Physiotherapy Practice (APP) is a valid and reliable tool for assessing competency of physiotherapy practice (Dalton et al 2011&2012). The APP is practical in its one-page format and reflects the Australian Standards for Physiotherapy (2006). The items on the APP are arranged under seven domains: Professional Behaviour, Communication, Assessment, Analysis & Planning, Intervention, Evidence-based Practice and Risk Management. Each item is scored on a scale from 0 to 4, with the higher number indicating greater competency. A score of 2 indicates that the student has achieved a level of competency that would be equivalent to that of newly graduated physiotherapist on their first day of practice. Scores of 3 and 4 reflect that the student is demonstrating comfort (3) and

sophistication (4) with respect an item, while a 1 indicates that competence is not yet adequate. APP items are assessed with respect to student performance of observable behaviours. Examples of behaviours for each domain are provided with the APP to display ways in which behavioural targets might be explained for students. A benefit of using these performance indicators is that they motivate the educator to describe desirable professional behaviours and they provide students with practical performance goals. The APP therefore also provides a self-directed learning tool for students to match their behaviour to the behaviours expected of a newly graduated physiotherapist.

Reflection

The supervision activity started with gaining informed consent from a patient on ward. During the 15 minute pre-brief at the start of the supervision activity the student was well informed of the of mutual rights and responsibilities of all parties, the parameters of supervision methods of evaluation, desired outcomes, potential risks and benefits of participation in supervision. The student communicated with nursing staff to organise that the patient receive adequate analgesia before starting assessment of the patient.

The patient received intravenous analgesia and after 15 minutes the supervisee reconfirmed consent from the patient and commenced taking a subjective assessment and physical assessment. The student communicated effectively with the patient while performing the assessment and went on to perform of knee range of movement exercises and mobilization 20meters with a forearm support frame. By the time the student had mobilized the patient and helped the patient back to bed and had completed the intervention 40 minutes had elapsed. The supervisee however worked through the assessment and intervention in an adequate tempo making 40 minutes a more adequate timeframe for this part of the supervision activity. The supervisee then progressed to documents assessment, analysis, planning and the intervention in the patient chart and report to the ward staff about the patient's status keeping within the 15 minute timeframe planned.

Cantillon and Sargeant (3) advocate the use of a feedback method called the reflective feedback conversation. This entails the supervisor beginning feedback by asking the student to share any concerns about the completed performance before providing their own views in a constructive way. The supervisor then asks the student to reflect on what they might improve in the situation, elaborates on the student's response and corrects if necessary. Finally it is suggested that the supervisor checks for the trainee's understanding of the feedback.

When the student was asked to share any concerns with regards to their own performance, the supervisee identified concerns with their ability to determine when to progress the patient's level of mobilization. The supervisor elaborated on the supervisee's response by asking the student questions regarding clinical reasoning behind objectifying progression in mobilization status. After this the supervisee then provided clinically reasoning regarding short and long term goals for progression of the patient's physical function status which were confirmed by the supervisor. The supervisee also identified factors in the patient's subjective history that were of importance for discharge planning. By using this technique the supervisor helped the student identify areas of that they feel they need to improve on and then facilitated the students thinking regarding ways they can improve on this. This is a form of motivational interviewing which empowers the supervisee to implement self-determined and supervisor guided strategies for improvement of performance. The feedback from the supervisor to the supervisee concluded with a quantitative scoring of the APP. The student scored a 3 in the items for Professional Behaviour, Communication and Risk Management. A score of 2 was

given for the items in the Assessment, Analysis & Planning, Intervention, Evidence-based Practice categories. This feedback provided confirmation for the student that an independent observer could see that they were comfortable with the patient interaction and at an adequate level for the technical aspects of patient management noting the student's ability to improve in these areas. These aspects facilitate student reflective thinking to help them improve in the highlighted areas of the APP in sufficient time before formative mid placement feedback from their Clinical Educator.

References

1. Australian Physiotherapy Council. Australian Standards for Physiotherapy. Canberra: APC, 2006
2. Bernard JM, Goodyear RK. Fundamentals of clinical supervision (4th Ed) Upper Saddle River, NJ:Pearson Education Inc, 2009.
3. Cantillon P, Sargeant J. Giving feedback in clinical settings. *BMJ* 2008;337:1292-1294.
4. Clouder L, Toms J. Impact of oral assessment on physiotherapy student's learning in practice. *Physiotherapy Theory and Practice* 2008;24(1):29-42.
5. Cobia DC, Boer SR. Professional disclosure statements and formal plans for supervision: Two strategies for minimizing the risks of ethical conflicts in post-master's supervision. *Journal of Counseling and Development* 2000;78:293-296
6. Dalton M, Davidson M, Keating J. The Assessment of Physiotherapy Practice (APP) is a valid measure of professional competence of physiotherapy students: a cross-sectional study with Rasch analysis. *J Physiotherapy* 2011;57(4):239-46.
7. Dalton M, Davidson M, Keating J. The assessment of physiotherapy practice (APP) is a reliable measure of professional competence of physiotherapy students: a reliability study. *J Physiotherapy* 2012;58(1):49-56.
8. DeClute J, Ladyshevsky R. Enhancing clinical competence using a collaborative clinical education model. *Physical Therapy* 1993;73(10):683-689.
9. Wass V, van der Vleuten C, Shatzer J, Jones R. Assessment of clinical competence. *Lancet* 2001;357(9260):945-949.
10. WCPT Policies – Description of Physical Therapy. 2013. World Confederation for Physical Therapy. www.wcpt.org/policy/ps-descriptionPT. Accessed 21st Nov 2013.

An example of my teaching philosophy applying critical reflection aimed at the improvement of teaching activities

Allan Abbott

A description of the scenario

The situation is an observation of a physiotherapy student being given feedback from their clinical supervisor regarding their performance of an initial assessment of a patient day one post total hip replacement. It was the second week of the student's first 5 week clinical placement on an orthopaedic ward. It was late in the day and the supervisor was pressed for time. The supervisor observed the student while the student conducted an assessment of the patient's condition. The assessment included an examination of respiratory, circulatory, neurological status and level of pain control in order to provide treatment aimed at optimising the patient's condition and to initiate patient mobilisation. The supervisor took over parts of the patient assessment without the student indicating that they needed their help. After the patient assessment was completed the student consulted with the supervisor and proceeded by describing to the patient the results of the assessment and the need for the patient to perform deep breathing exercises to optimise their respiratory status and foot pump exercises to optimise their circulatory status. The student then proceeded with the help of the supervisor to mobilise the patient and complete the patient consultation.

How feedback was delivered

After the patient consultation was complete, the supervisor gave the student feedback while they were standing in the patient's room. The supervisor began by asking the student how they thought they went with the assessment. The student replied by explaining that they felt they performed all relevant aspects of the post-operative assessment of the patient's condition and come to the conclusion that the patient required respiratory and circulatory exercises and that mobilisation could be initiated. The supervisor then proceeded abruptly by telling the student that their examination was not thorough enough and to go home and study more. The student then became defensive and responded by saying that they did what the supervisor had shown them to do previously. The supervisor then told the student that they have shown them a much more thorough examination procedure many times during the placement and they the student's performance needs to drastically improve for the student to pass their mid-placement assessment. The student seemed bewildered but nodded in response to what the supervisor said before the supervisor rushed away.

Critical reflection of the feedback situation

According to Ende (1), the principles of using feedback for clinical teaching include:

- Work as an ally of the student.
- Have predetermined time and place for formal feedback.
- Have the student give an assessment of their performance
- Use well-defined, mutually planned goals for performance to base feedback on.
- Give feedback on specific behaviours, not general performance.
- Give feedback in small, digestible quantities.
- Use language that is non-evaluative and nonjudgmental.

The supervisor seemed to work as an ally to the student during the consultation with the patient but took over certain aspects of the assessment. This could have been an opportunity for the supervisor to give brief feedback on specific aspects of the student's assessment of the patient. Using phrases such as "Let me give you some quick feedback on how you can do that another way to determine..." lets the student know that they are receiving feedback on a specific activity (2). After the patient consultation, the supervisor began giving the student more formal feedback in the patient's room. This may not have been the optimal environment for giving the student feedback as a more private setting may have been more comfortable for the student to receive feedback.

Cantillon and Sargeant (3) advocate the use of a feedback method called the reflective feedback conversation. This entails the supervisor beginning feedback by asking the student to share any concerns about the completed performance before providing their own views in a constructive way. The supervisor then asks the student to reflect on what they might improve in the situation, elaborates on the student's response and corrects if necessary. Finally it is suggested that the supervisor checks for the trainee's understanding of the feedback.

When critically reflecting on the current feedback situation, the supervisor began by asking the student to express how they thought they went with the patient assessment. The supervisor received a vague response from the student describing their satisfaction with parts of the assessment that lead them to choose their treatment interventions. The student's vague response may be the result of certain student based barriers to feedback such as their worry of "saving face" (4). In this case a strategy the supervisor could utilise is formulating mutual attainable performance goals to base critical reflection on. This may help to minimise student performance anxiety. Strategies to develop the student's self-evaluative response could be the use of confirming or discussing what the student has reflected on or simply using prompting questions such as asking the student to describe what they could do better next time (5). Instead of facilitating the student's self-reflection of their performance, the supervisor gave negative feedback to the student that is more destructive than constructive for adult learning (6). The supervisor neglected the principle outlined by Ende (1) recommending use of language that is non-evaluative and nonjudgmental. Additionally, the supervisor provided vague feedback on general performance rather than directing feedback focused on specific behaviours that the student can rectify (1). Consequently, the feedback situation changed from a two-way dialog to a one way dialog. A recent study investigated supervisors self-reported perceptions of effective feedback and compared this to an independent observer analysis of the supervisor's formal feedback to students discovering incoherence between theory and practice (7). Common supervisor centred factors that could be barriers of a two-way feedback process in this case could include time limitation, lack of skill in facilitating student self-evaluation or a culture of utilising "apprenticeship models" for clinical education practice (4).

References

1. Ende J. Feedback in clinical medical education. *JAMA*. 1983;250:777–781.
2. Branch WT, Paranjape A. Feedback and Reflection: Teaching Methods for Clinical Settings. *Academic Medicine* 2002;77:1185-1188.
3. Cantillon P, Sargeant J. Giving feedback in clinical settings. *BMJ* 2008;337:1292-1294.
4. Delany C, Molloy E. *Clinical education in the health professions*. Sydney: Churchill Livingstone, 2009.
5. Frye A, Hollingsworth M, Wymer A, Hinds A . A qualitative study of faculty techniques for giving feedback to interns following an observed standardised patient encounter. In:

Scherpbier A, vander Vleuten C, Rethans J, van der Steeg A (eds) *Advances in medical Education*. Dordrecht: Kluwer Academic Publishers, 1997.

6. Knowles M. *Andragogy in action*. San Francisco: Jossey-Bass, 1984.
7. Molloy E. *Insights into the formal feedback culture in physiotherapy clinical education*. School of Physiotherapy and Department of Education, University of Melbourne, 2006.

An example of my teaching philosophy applied in curriculum development

Allan Abbott

Introduction

This curricular development proposal will focus on the implementation of pain curricula in the Bond University Doctor of Physiotherapy program. The proposal is outlined according to the key elements of curricular development outlined by Harden et al (1986) and Kern et al (2009). These include problem identification and general needs assessment, the expected student outcomes, organisational and educational strategies, teaching methods, assessment, communication as well as evaluation and feedback.

Problem identification and general needs assessment

According to Kern et al 2009, complete problem identification requires a general as well as a targeted analysis of the current approach to identify the need of curriculum development. This is followed by the identification of the ideal approach, with the difference between the ideal approach and current approach representing the needs assessment.

General analysis

From a broad general perspective, the central messages from the 2010 International Pain Summit in Montreal and the 2010 Australian National Pain summit highlighted that there is currently major deficits in the knowledge of all health care professionals regarding the mechanisms and management of pain. Pain Education Survey research by Briggs et al (2011) and Watt-Watson et al (2009) have supported this notion with a low number of pain education teaching hours reported in many pre-registration health care profession courses internationally.

Pain education is of particular importance for physiotherapy, as pain is the most common reason that people seek physiotherapy care. Physiotherapists have an ethical responsibility as health professionals to have an accurate understanding of the human pain experience so as to best help those seeking their care. This means that physiotherapists need to be educated appropriately in modern pain neuroscience, so they can assess relevant factors that might modulate the pain experience and provide effective pain management. There is a need for further international research into physiotherapy pain education, including accurate estimation of not only pain education quantity but also the effectiveness of education.

Targeted analysis – current approach

Currently in the Doctor of Physiotherapy program at Bond University, pain neuroscience content is only briefly covered in the curriculum where the teaching of pain assessment and treatment techniques occurs across several subjects. It has not previously been highlighted as a core theme in theme throughout the Doctor of Physiotherapy program.

Ideal approach

An ideal approach to pain curricular reform would be that the implementation of comprehensive education and training in pain management will give the students' knowledge and resources to deliver best-practice evidence-based care (National Pain Strategy, 2010).

The International Association for the Study of Pain (IASP) has developed pain education curricula to support pre-registration training and professional development for health professionals. This would be a fundamental resource to use in the Doctor of Physiotherapy program at Bond University, when designing curricula to ensure core competencies for assessment and management of pain.

Needs assessment

There is a clear need to highlight pain as a core them and embed more thorough core pain neuroscience content into the Doctor of Physiotherapy Program. This is needed to support applied learning of pain assessment and treatment based on a solid pain neuroscience foundation.

The target audience and stakeholders

This curriculum development plan is designed for the Doctor of Physiotherapy Program at Bond University. Therefor it is appropriate for physiotherapy students who have previously completed courses in anatomy, physiology, and kinesiology or movement science. Teachers involved in the delivery of the curriculum need to have a good understanding of the multidimensional nature of pain and to have experience in the assessment, measurement and management of pain in relevant clinical conditions. The curriculum is also designed to fulfill competencies relative to specific Australian Physiotherapy Council (APC) competency criteria and the IASP pain curriculum for entry level physiotherapists (APC 2006; IASP 2010).

Implementations of the pain curriculum development proposal

Broad goals for the program

The goal of embedding more pain curriculum into the Doctor of Physiotherapy Program is to develop the students understanding of the multidimensional nature of pain, competently perform the assessment, measurement and implement a pain management intervention for varied clinical conditions. Students will develop an applied theoretical understanding of models behind interventions as well as the empirical evidence for effectiveness of these interventions.

Pain curriculum Intended Learning Outcomes (ILO)

Bloom’s numbered taxonomy system is used to categorize the level of cognitive, psychomotor and affective domains for pain curriculum ILO’s across the Doctor of Physiotherapy Program (Bloom etal 1956; Krathwoh etal 1964; Dave 1970).

Upon completion of this pain curriculum, the student will be able to:	Alignment to Learning Taxonomy Levels		
	Cognitive	Psychomot or	Affective
1. Apply knowledge of basic science of pain to the assessment and management of people with pain.	3		
2. Promote health and well-being through prevention of pain and disability.			4
3. Assess and measure the biological and psychosocial factors that contribute to pain, physical dysfunction and disability using valid and reliable assessment tools.	4	4	
4. Assess professional, system, patient, family and community barriers to effective pain assessment and	4		

management.			
5. Develop an evidence-informed physical therapy management program in collaboration with the client/patient, directed at modifying pain, promoting tissue healing, improving function and reducing disability.	6		
6. Implement management that includes patient education, active approaches such as functionally oriented behavioural movement re-education approaches and exercise (including pacing), and passive approaches such as manual therapy, and application of electrophysical agents as relevant.		4	
7. Demonstrate an awareness of their scope of practice to evaluate and manage patients experiencing pain using evidenced-based practice strategies for clinical decision-making.	3		3
8. When appropriate, refer patients in a timely manner for additional care to practitioners with expertise such as medical and surgical, behavioral and psychological, or pharmacological interventions.	5		
9. Recognize individuals who are at risk for under-treatment of their pain (e.g., individuals who are unable to self-report pain, neonates, cognitively impaired).	1		
10. Practice in accordance with an ethical code that recognizes human rights, diversity, and the requirement to "do no harm."	6		
11. Reflect critically on effective ways to work with and improve care for people with pain.	6		
12. Regularly update personal knowledge on pain and its management.	1		

Curriculum content

1. Multidimensional Nature of Pain

A. Magnitude of the problem: epidemiology of pain as a public health problem with social, ethical, and economic considerations

B. Current theories of the anatomical, physiological, and psychological basis of pain and pain relief.

C. Definition of pain and the multidimensional nature of the pain experience.

D. Impact of age, gender, family, culture, spirituality, and the environment on the pain experience

E. Role and responsibilities of the physical therapist in pain management and the integration of physical therapy into the interdisciplinary team.

F. Roles and responsibilities of other health care professionals in the area of pain management and the merits of interdisciplinary collaboration.

G. Integration of physical therapy interventions into an holistic management strategy in collaboration with other professions (health and non-health).

H. Pain across the life span (physiological and psycho-social factors, implications for assessment, measurement, and intervention)

- Implications and assessment of pain in infancy, childhood, and adolescence with reference to optimizing physical, psychological, educational and social development and integrate these into the management strategy.
- Specific problems faced by the elderly with painful conditions with respect to the influence of co-morbidities, access to appropriate services and maintenance of independence.

I. Basic science:

- Understand and describe nociceptors and the adequate stimuli to activate nociceptors in different tissue types (i.e. skin, muscle, joint, viscera). Explain the afferent innervations of the spinal cord from different tissue types, and how pain from different tissues is processed centrally.
- Define and describe peripheral sensitization and how these changes are associated with pain perception.
- Describe neurogenic inflammation, the neurotransmitters involved in this process, and how these neurotransmitters could contribute to peripheral pain processing.
- Understand the changes and role of ion channels, excitatory neurotransmitters, and inhibitory neurotransmitters in the peripheral nervous system and in non-neuronal cells, and explain how these changes are important in the processing of pain transmission.
- Describe animal models of pain. Understand what the models are trying to mimic, and why one would use an animal model to study pain.
- Describe the pain pathways involved in the sensory discriminative and motivational affective component of pain.
- Describe and define central sensitization and how this is similar and different from peripheral sensitization.
- Describe and understand the mechanisms that underlie pain behaviors: referred pain, primary hyperalgesia, secondary hyperalgesia, allodynia.
- Understand the role of excitatory neurotransmitters, inhibitory neurotransmitters, and glia in the central nervous system in enhancement of pain transmission, and changes that occur as a result of tissue injury.
- Describe the descending pathways that modulate pain transmission.
- Understand the differences between pain facilitation and pain inhibition, brain sites, and neurotransmitters that play a role in this process. In

particular understand how these pathways can be activated by non-pharmacological treatments.

- Understand the long-term consequences of chronic pain on the brain.
- Understand neuroimaging tools and key brain regions underpinning the experience of pain, and how this changes depending upon the context, cognitive and emotional state of the individual.
- Compare and contrast two or more theories on the interactions between pain and motor function (e.g. Vicious Cycle Theory and Pain Adaptation Theory).

2. Pain Assessment and Measurement

A. Recognize the differences between acute and chronic pain and the implications for assessment and management of the patient.

B. Emphasize performance of a comprehensive assessment using reliable and validated tools in the acute pain phase to prevent the onset of chronicity.

C. Use a biopsychosocial approach for assessment of pain and disability as it accounts for the multidimensional nature of pain in domains relevant to physical therapy practice.

D. Account for the multidimensional nature of pain by including appropriate assessment measures for primary domains including:

- Sensory, Affective, Cognitive, Physiological, Behavioral

E. Recognize strengths and limitations of commonly used measures for different pain dimensions:

- Self-report measures as "accepted standard" not gold standard
- Physical performance measures including Functional Capacity Evaluations (FCEs)
- Physiological/autonomic response measures

F. Modify pain assessment strategies to match inherent variability associated with the patient's clinical presentation:

- Individual factors (e.g. age, sex, etc.)
- Sociocultural influences (e.g. spirituality, ethnicity, etc.)
- Clinical characteristics of pain (e.g. duration, anatomical location, etc.)
- Pain type and state (e.g. neuropathic pain, cancer pain, etc.)
- Vulnerable populations (e.g. communication barriers, cognitive impairment etc.)

G. Interpret, critically appraise (reliability, validity, and responsiveness), and implement available pain assessment instruments for:

- Screening for the development of chronic conditions

- Identifying accepted patient subgroups for application of treatment
- Determining clinical relevance and/or magnitude of patient outcomes

H. Understand the need to monitor and review the effectiveness of treatment/management and modify treatment and management strategies appropriately.

I. Understand the need to refer to relevant health professional as appropriate and in a timely manner.

3. Management of Pain

A. Demonstrate an ability to integrate the patient assessment into an appropriate management plan using the concepts and strategies of clinical reasoning

B. Understand the principles of an effective therapeutic patient/professional relationship to reduce pain, promote optimal function and reduce disability through the use of active and where appropriate, passive pain management approaches

C. Assist patients to develop a daily routine to support achievement and, where necessary, readjustment of habits and roles according to individual capacity and life situation

D. Understand the need to involve family members and significant others including employers where appropriate.

E. Use a person-centered perspective to formulate collaborative intervention strategies consistent with a physical therapy perspective

F. Understand appropriate pharmacology

- Understand the principles of the pharmacology of medications used to treat pain: non-opioid medications, opioids, adjuvants, topical analgesics and local anaesthetics
- Understand the limitations of the pharmacological management of chronic pain, the importance of combining pharmacological approaches with non-pharmacological management of chronic pain and the use of such strategies alongside appropriate evidence-based active self management strategies

G. Patient education

- Recognise the impact of, and evidence for, the use of therapeutic neuroscience education and self-management as a critical part of pain management.
- Design and apply appropriate educational strategies based on educational science.
- Identify the range of educational opportunities available across therapeutic domains (eg, injury, disease, medical and post surgical intervention) with consideration of age, culture and gender.

- Consider the scope and evidence for/against various contemporary therapeutic educational styles (e.g. biomedical, psychological, neuroscience) and models (e.g. stages of change theory) and service delivery modes including face to face, web-based, group education.
- Identify key variables which may impact on knowledge outcomes for the patient (eg self efficacy, health literacy, co-morbidities, culture), the clinician (eg health professional's pain-related beliefs), the message (e.g. use of multimedia), and the context (e.g. insurance limitations; risk reduction; injury prevention)

H. Behavioral management

- Understand and apply functional behavioral analysis of pain conditions.
- Appraise the value of screening tools in the identification of psychosocial factors predictive of persistent disability.
- Apply behavioural approaches (physical and cognitive behavioral components) and evaluate the effects.

I. Exercise

- Understand the parameters (i.e., mode, frequency, duration, intensity) of therapeutic exercise for pain relief.
- Describe how to modify exercise parameters as they relate to the pain condition, age, psychosocial factors, and patient's health status.
- Recognize the importance of implementing adjunct therapies to address issues related to exercise prescription (i.e., biopsychosocial, fear avoidance behaviour, catastrophizing, cognitive behavioural therapy).
- Understand the importance of patient education in prescribing therapeutic exercise, including the concept of motivation, pacing) to enhance overall treatment effectiveness and compliance.

J. Reintegration into work (paid and unpaid employment): Identify the factors associated with prolonged work loss and integrate strategies to overcome barriers to return to work

- Understand the role of ergonomic principles, modified workplace accommodations
- Develop a management plan in co-ordination with employers and case managers

K. For the following interventions: Manual Therapy (massage, manipulation, mobilization), Acupuncture, Transcutaneous electrical nerve stimulation (TENS, IFC), Laser, Relaxation, Biofeedback

- Understand the proposed neurophysiological mechanisms and the associated effects, and for manual therapy the biomechanical effects, of each intervention as it pertains to pain management.
- Understand the principles of clinical application and current evidence for the each intervention in the management of different pain conditions.

4. Clinical Conditions

A. Understand the use of education, exercise and adjuvant physical therapy interventions as they pertain to specific acute and chronic pain conditions. The following is a list of different clinical conditions commonly managed with physical therapy. Other conditions may also warrant physical therapy interventions.

- Low back and neck pain, Arthritis, Headache and Migraine, Cancer pain, Fibromyalgia, Myofascial pain, Neuropathic pain, Complex regional pain syndromes, Temporomandibular disorder, Tendinopathies, Adhesive capsulitis, Sprains, Postoperative pain, Pelvic floor pain

Organisational and educational strategies

The IASP recommend that physiotherapeutic pain management should be taught independently in the curriculum from other traditional courses such as orthopedics, manual therapy, or physical agents (IASP 2010). Due to the difficulties of finding dedicated time for pain specific topics in the Doctor of physiotherapy program at Bond University, it is preferable to identify where there may be opportunities for other topics to ‘host’ elements of the core curriculum. For example, mapping where the elements of the IASP curriculum can be integrated with the existing content of the Doctor of Physiotherapy program would be a first step (See mapping table in Appendix 1).

The Principles of Physiotherapy subject in the beginning of the Doctor of Physiotherapy program is suitable for the delivery of part 1 (multidimensional nature of pain) of the curriculum content. Considering the concept of spiral curriculum, covering this content in the beginning of the program allows for an iterative repetition of these principles when they are later applied in parts 2-4 of the curriculum content (assessment & measurement, management of pain, clinical conditions) (Harden & Stamper, 1999).

The consecutive subjects delivered after the Principle of Physiotherapy subject cover clinical conditions commonly accompanied by pain. Because pain commonly accompanies musculoskeletal injuries it would be useful to emphasise it when presenting content on musculoskeletal conditions. It might also be emphasised in teaching of neurological or cardio-respiratory conditions where pain is a feature. The use of topics covering psychosocial aspects of health is common in physiotherapy programmes and this could be used as a vehicle to understand the psychosocial aspects of pain, including persistent pain. Units or modules dedicated to women’s health could ensure that elements of the core curriculum relating to ‘Sex and Gender Issues in Pain’ are incorporated into learning and teaching activities. Perhaps most obviously, the presentation of pain-relieving electro-physical agents should always reinforce knowledge of pain mechanisms and the multi-dimensional influences on pain. The PRISMS educational strategy model emphasises how curriculum needs to be increasingly clinical practice based so the application of knowledge to the context of real clinical problems is of importance (Bligh et al 2001).

In addition, the student centred and problem-based learning approach used in the Doctor of Physiotherapy program motivates the students to bring their previous experiences into discussion and problem-solving activities. As pain is a common experience and reported as a symptom in association with many health conditions, there are opportunities to promote the investigation of pain-specific content in problem based learning scenarios. According to

Harden's SPICE model, this would enable students to reflect on their beliefs and behaviour during their past pain experiences, and to examine how these might influence their future professional practice (Harden et al 1984).

Teaching methods

Currently in the Doctor of Physiotherapy Program, teaching methods such as lectures, practical demonstrations, standardised patient experiences and small group problem based tutorials are utilities. As outlined in Appendix 1, part 1 of the pain curriculum (Multidimensional nature of pain) will be added to the Principles of Physiotherapy subject in the form of a lecture. The curriculum mapping highlighted however that parts 2-4 of the pain curriculum are currently covered as hidden curriculum delivered in lectures, demonstrations of practice, standardised patient experiences and small group problem based tutorials. This has now enabled the alignment of this current curriculum content to the pain curriculum ILO's.

Assessment

The assessment program aligned to the pain curriculum ILO's and content is displayed in Appendix 1. The blueprinting of assessment measures is displayed in Appendix 2.

To decide what assessment tools to use to assess these learning outcomes in this assessment program, one must take into consideration the level of assessment and utility of assessment measures. Miller's (1990) Pyramid is an assessment framework that shows how the hierarchy of various learning levels can be matched to particular types of assessment. According to van der Vleuten & Schuwirth (2005) the utility of assessment methods need to take into consideration aspects of reliability and validity, educational impact, the method's acceptability to the stakeholders and the investment required in terms of resources. Therefore assessment is not just a measurement problem but an instructional design problem, comprising education, implementation and resource aspects. The utility model is useful not just for designing individual assessment measures but also devising an overall assessment program for the whole course (van der Vleuten & Schuwirth, 2005). Each summative assessment tool in the following assessment program will utilise the 50% pass mark.

The learning outcomes of the pain curriculum are at a level on the Miller's pyramid of application of knowledge and simulation of skills. However to be able to align assessment to these levels, this requires competency in the factual knowledge level. In line with the Miller's pyramid, the initial "knowledge" stage can be assessed with for example factual multi-choice questions (MCQs). A good example of a factual MCQ based assessment for pain curriculum is the psychometrically validated Neurophysiology of Pain Questionnaire (NPQ) which contains 19 item statements for which the student can indicate whether they are true or false (Moseley 2003; Catley et al 2013). Although according to Norcini et al (1985) this level of sampling (19 items) is considered too low for adequate reliability, repeated use of the NPQ in each subject containing pain content vertically throughout the Doctor of Physiotherapy program could be used as a formative assessment tool to quickly and feasibly address individual student learning and aid progression in areas of knowledge weakness to prepare their ability to apply knowledge. The NPQ has been used in clinical studies to monitor knowledge change with pain education-based intervention which provides support for its educational impact (Moseley 2003).

With the progression to the application of knowledge stage, observation and feedback on Problem Based Learning (PBL) tasks will be used as vehicle for formative feedback in each subject containing pain content vertically throughout the Doctor of Physiotherapy program. In

summative assessment of the application of knowledge, clinical context based MCQs, Short Answer Questions (SAQs) and Key Feature Problems (KFPs) will be utilised in each subject containing pain content vertically throughout the Doctor of Physiotherapy program. The reliability of KFPs have been found to be good with the level of sampling dependent upon if a suite of assessment approaches are used (Farmer & Page, 2005). Validation of KFPs entails piloting the problem with discussion, review and editing by colleagues new to the problem, and confirmation of the correctness of answers through reference to suitable literature (Farmer & Page, 2005). KFPs allow more realism and complexity while maintaining moderated requirement for time and judgement in scoring.

With the progression to the simulation level of Miller's pyramid, this will be assessed formatively with direct observation and meaningful feedback in the practical components of resource sessions in each subject containing pain content vertically throughout the Doctor of Physiotherapy program. Furthermore, summative assessment will occur through in vitro OSCEs (Hauer et al, 2011). The OSCEs will use multiple stations with examinees performing various clinical tasks at each station. Tasks will include test interpretation, history taking, physical examination, patient education and treatment for pain conditions (Turner & Dankoski, 2008). OSCEs provide high educational impact for preparing students for clinical placement while maintaining moderated requirement for time and judgement in scoring and resources needed for implementation (Vendrely, 2002).

After mapping the current pain curricular content in the Doctor of Physiotherapy Program in line with the IASP pain curriculum, hidden curriculum could now be clearly aligned with the learning outcomes of the IASP pain curriculum and areas lacking in the current content could be identified and added. This allowed for blueprinting of relevant assessment measures aligned to specific IASP pain curriculum learning objectives.

Communication

Teachers have the responsibility to ensure that students have a clear understanding of the pain curriculum ILO's, content outline and assessment outline. This will be provided to the students in the form of a thematic outline of the pain curriculum in the Doctor of Physiotherapy Program.

Time frame for implementation

It is planned that this pain curriculum development plan will be implemented for the 2014 intake for the Doctor of Physiotherapy Program occurring in may.

Barriers and facilitators to implementation

One main barrier to the implementation of the pain curriculum development plan is the lack of available time for adding new content in the Doctor of Physiotherapy Program. The mapping exercise has however shown that not much addition content is needed but rather the pain curriculum plan has clarified previous hidden content and aligned it to specific ILO's and assessments. The structuring of current content can be seen as a resource rather than a barrier.

Evaluation and feedback

A participant-orientated approach will be used evaluate the students perceptions of the pain curriculum in each subject outlined in the mapping exercise to have pain curriculum delivered in it (Cook 2010). This will be in the form of a questionnaire to determine the student's perceptions in qualitative form on how the content delivered has helped their ability

to assess, measure and manage pain conditions related to the subject clinical area. A question will also investigate potential areas of improvement that will be used to improve the future delivery and refinement of the pain curriculum.

Reflection on approach taken to curriculum development proposal work

Developing a curriculum development proposal work has provided me with new knowledge and practical skill in identifying curricular problems and general needs assessment, developing intended learning outcomes, as well as aligning organisational and educational strategies, teaching, assessment, evaluation and feedback methods.

The most challenging part of the curriculum development proposal work was constructively aligning intended learning outcomes, relevant learning activities and assessment. Because the curriculum development plan aimed to implement the International Association of the Study of Pain (IASP) recommended pain curriculum into the entire Doctor of Physiotherapy, the first step was to map the current pain content being delivered vertically throughout the program. This was a time consuming task but a task that was important to conduct for not just the sake of the curriculum development proposal but also because the Doctor of Physiotherapy program is currently going through a re-accreditation process where dominant themes in the program need to be mapped. Despite this demanding task, it laid the foundations for highlighting what parts of the IASP curriculum that were already being taught as hidden curriculum and where the rest of the IASP curriculum could be implemented. After doing this, the alignment between the intended learning outcomes for the pain curriculum and the content could be performed.

When mapping the content being delivered and adding pain curriculum where needed, associated learning activities were aligned. The blended learning resource sessions used in the Doctor of Physiotherapy Program utilise didactic lecturing, small group case studies and practical skills training. Problem Based Learning tutorials are also used. These were deemed appropriate to deliver the revised IASP aligned pain curriculum making this step not so challenging. However it was challenging then to align the assessment program to the content delivered and the intended learning outcomes. Considering van der Vleuten's utility algorithm and Miller's assessment taxonomy helped in aligning what assessment methods were most relevant.

The curriculum development proposal has provided me with the tools needed to approach a similar problem in the future. As other core themes have been identified for the Doctor of Physiotherapy program, similar methods will be used for curriculum development proposals aimed at these identified themes. Because there may not be international associations with existing recommendations for curriculum in these theme areas, other methods of proposing relevant curriculum content and learning outcomes will be needed. These may include contacting relevant organisations that could provide input into curriculum needed in entry level physiotherapy education.

References

1. Australian Physiotherapy Council (APC). Australian Standards of Physiotherapy, Canberra, 2006. Available from: <http://www.physiocouncil.com.au/standards>. [Retrieved 24 January 2014].
2. Bligh J, Prideaux D, Parsell G. PRISMS: new educational strategies for medical education. *Medical Education* 2001;35:5205-1.

3. Bloom BS. (Ed.), Englehart MD, Furst EJ., Hill WH., Krathwohl DR., Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain, David McKay Company, Inc. New York, 1954, 1956.
4. Briggs EV, Carr EC, Whittaker. Survey of undergraduate pain curricula for healthcare professional in the United Kingdom. *Eur J Pain* 2011;15:789.
5. Catley MJ, O'Connell NE, Moseley GL. How good is the Neurophysiology of Pain Questionnaire? A Rasch analysis of psychometric principles. *The Journal of Pain* 2013;1-10.
6. Cook DA. Twelve tips for evaluating educational programs. *Medical Teacher* 2010; 32:296-301
7. Dave, RH. Developing and writing educational objectives (Psychomotor levels pp. 33-34), 1970.
8. Farmer EA, Page G. A practical guide to assessing clinical decision-making skills using the key features approach. *Medical Education* 2005;39:1188-1194
9. Harden RM, Sowden S, Dunn WR. Educational strategies in curriculum development. *Medical Education* 1984;18:284-297.
10. Harden RM, Stamper N. What is spiral curriculum. *Medical Teacher* 1999;21(2):141-3.
11. Harden RM. Ten questions to ask when planning a course or curriculum, *Medical Education* 2009;20:356-365.
12. Hauer KE, Holmboe ES, Kogan JR. Twelve tips for implementing tools for direct observation of medical trainees' clinical skills during patient encounters. *Medical Teacher* 2011;33:27-33.
13. Hays R. Assessment in medical education: roles for clinical teachers. *The Clinical Teacher* 2008;5:23-27.
14. International Association for the Study of Pain (IASP). IASP Curriculum Outline on Pain for Physical Therapy, 2010. Available from: <http://www.iasp-pain.org/Education/CurriculumDetail.aspx?ItemNumber=2055> [Retrieved 25 January 2014].
15. Kern DE, Thomas PA, Hughes MT. Curriculum development for medical education. A six-step approach. 2nd ed. Baltimore: The John Hopkins University Press; 2009.
16. Krathwohl DR, Bloom BS, Masia BB., Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook II: Affective Domain, Longman Inc., 1964.
17. Miller G. The assessment of clinical skills/competence/performance. *Acad Med* 1990;65(9):63-67.
18. Moseley GL: Unraveling the barriers to reconceptualization of the problem in chronic pain: The actual and perceived ability of patients and health professionals to understand the neurophysiology. *J Pain* 2003;4:184-189.
19. National Pain Strategy; 2010. Available from: <http://www.painaustralia.org.au/> [Retrieved 24 January 2014].
20. Norcini JJ, Swanson DB, Grosso LJ, Webster GD. Reliability, validity and efficiency of multiple choice question and patient management problem item formats in assessment of clinical competence. *Med Educ* 1985;19:238-47.
21. Turner JL, Dankoski ME. Objective Structured Clinical Exams: A Critical Review. *Fam Med* 2008;40(8):574-8.
22. van der Vleuten CP, Schuwirth LW. Assessing professional competence: from methods to programmes. *Med Educ* 2005;39:309-317.
23. Vendrely A. Student assessment measures in physical therapy education: An overview and literature review. *Journal of Physical Therapy Education* 2002;16(2):64-69.

24. Watt-Watson J, McGillion M, Hunter J, Choiniere M, Clark AJ, Dewar A, Johnston C, Lynch M, Morley-Forster P, Moulin D, Thie N, von Baeyer CL, Webber K. A survey of prelicensure pain curricula in health science faculties in Canadian universities. *Pain Res Manage* 2009;14:439

Appendix 1
Pain curriculum mapping

SUBJECT CODE	SUBJECT NAME	CURRENT CURRICULUM CONTENT AND EDUCATIONAL STRATEGIES	NEW PROPOSED CONTENT AND EDUCATIONAL STRATEGIES	ASSESSMENT METHODS	ALIGNMENT TO INTENDED LEARNING OUTCOMES
PHTY91-401	Principles of Physiotherapy (7wks content)	Peripheral nociception and pain gating mechanisms briefly discussed in the physical (massage/manual therapy weeks 3&4) and electrophysical (TENS week 6) management of pain lectures and applied as a learning outcome in 1 PBL	<p>Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum:</p> <ol style="list-style-type: none"> 1) Continue with current content covering ISAP curriculum 3K 2) Add 1x3hr lecture outlining the ISAP curriculum 1A-I (multidimensional nature of pain). Implemented before current content is delivered, i.e. ideally in week 3. 	<p><u>Formative Assessment</u></p> <p>Neurobiology of pain test can be used formatively. Practical components of resource sessions and PBL's used to give formative feedback.</p> <p><u>Summative Assessment</u></p> <p>Theory exam – MCQs, SAQs and KFQs for content related to multidimensional nature of pain</p> <p>OSCE- verbalise rationale for and perform pain treatment technique</p>	1,2,4,9,10,12
PHTY91-402	Musculoskeletal Physiotherapy I (5wks content)	The principles of pain assessment, measurement and management are applied to lower limb peripheral musculoskeletal disorders (acute and chronic) including	<p>Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum:</p>	<p><u>Formative Assessment</u></p> <p>Neurobiology of pain test can be used formatively. Practical components of resource</p>	1-12

		post-operative pain conditions. Discussed in 10x3hr resources session and 4xPBL's and 1xstandised patient experience.	1) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<p>sessions and PBL's used to give formative feedback.</p> <p><u>Summative Assessment</u></p> <p>Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain</p> <p>OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique</p>	
PHTY9 1-403	Cardio-respiratory Physiotherapy I (5wks content)	The principles of pain assessment, measurement and management are applied to cardiorespiratory and abdominal post-operative pain and differential diagnosis of visceral pain. Discussed in 10x3hr resources session and 4xPBL's and 1xstandised patient experience	<p>Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum:</p> <p>1) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A</p>	<p><u>Formative Assessment</u></p> <p>Neurobiology of pain test can be used formatively. Practical components of resource sessions and PBL's used to give formative feedback.</p> <p><u>Summative Assessment</u></p> <p>Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain</p>	1-12

				OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique	
PHTY9 1- 404	Musculoskeletal Physiotherapy II (4wks content)	The principles of pain assessment, measurement and management are applied to upper limb peripheral musculoskeletal disorders (acute and chronic) including post-operative pain conditions as well as spinal post-operative pain conditions. Discussed in 8x3hr resources session and 3xPBL's and 1xstandised patient experience	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 1) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Formative Assessment</u> Practical components of resource sessions and PBL's used to give formative feedback. <u>Summative Assessment</u> Theory exam – Short and long answer Q's for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique	1-12
PHTY9 2-405	Cardiorespiratory II (4wks content)	The principles of pain assessment, measurement and management are applied to cardiorespiratory and abdominal post-operative pain and differential diagnosis of visceral pain. Discussed in 8x3hr resources	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 1) Continue with current content covering ISAP	<u>Formative Assessment</u> Practical components of resource sessions and PBL's used to give formative feedback.	1-12

		session and 3xPBL's and 1xstandised patient experience	curriculum 2A-I, 3A-K, 4A	<u>Summative Assessment</u> Theory exam – Short and long an-swer Q's for content related to as-sessment, measurement and man-agement of pain OSCE- verbalise rationale for and perform pain assessment, measure-ment and treatment technique	
PHTY92-408	Musculoskeletal Physiotherapy III	The principles of pain assessment, measurement and management are applied to spinal musculoskeletal disorders (acute and chronic). Discussed in 16x3hr resources session and 6xPBL's.	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 1) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Formative Assessment</u> Neurobiology of pain test can be used formatively. Practical components of resource sessions and PBL's used to give formative feedback. <u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique	1-12

PHTY9 2-409	Neurological Physiotherapy				
PHTY9 2-412	Physiotherapy Leadership, Management and Advocacy				
PHTY9 2-413	Physiotherapy for Chronic Disease and Disability	The principles of cancer pain assessment, measurement and treatment. Discussed in 1x3hr lecture	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 1) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique	1-12
PHTY9 3-415	Maximising Human Potential	Chronic widespread pain assessment, measurement and management. Discussed in 1x3hr lecture.	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 1) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique	1-12

PHTY9 3-416	Evidence Based Practice Project I				
PHTY9 3-418	Evidence Based Practice Project II				
PHTY9 3-420	The Well Rounded Physiotherapis t				

Appendix 2. Blueprinting of pain curriculum content across the Doctor of Physiotherapy Program's university imbedded subjects excluding clinical education subjects

SUBJECT CODE	SUBJECT NAME	CURRENT CURRICULUM CONTENT AND EDUCATIONAL STRATEGIES	NEW PROPOSED CONTENT AND EDUCATIONAL STRATEGIES	ASSESSMENT METHODS
PHTY91-401	Principles of Physiotherapy (7wks content)	Peripheral nociception and pain gating mechanisms briefly discussed in the physical (massage/manual therapy weeks 3&4) and electrophysical (TENS week 6) management of pain lectures and applied as a learning outcome in 1 PBL	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 3) Continue with current content covering ISAP curriculum 3K 4) Add 1x3hr lecture outlining the ISAP curriculum 1A-I (multidimensional nature of pain). Implemented before current content is delivered, i.e. ideally in week 3.	<u>Formative Assessment</u> Neurobiology of pain test can be used formatively. Practical components of resource sessions and PBL's used to give formative feedback. <u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to multidimensional nature of pain OSCE- verbalise rationale for and perform pain treatment technique
PHTY91-402	Musculoskeletal Physiotherapy I (5wks content)	The principles of pain assessment, measurement and management are applied to lower limb peripheral musculoskeletal disorders (acute and chronic) including post-operative pain conditions. Discussed in 10x3hr resources session and 4xPBL's and 1xstandised patient experience.	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 2) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Formative Assessment</u> Neurobiology of pain test can be used formatively. Practical components of resource sessions and PBL's used to give formative feedback. <u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment,

				measurement and treatment technique
PHTY91-403	Cardio-respiratory Physiotherapy I (5wks content)	The principles of pain assessment, measurement and management are applied to cardiorespiratory and abdominal post-operative pain and differential diagnosis of visceral pain. Discussed in 10x3hr resources session and 4xPBL's and 1xstandised patient experience	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 2) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Formative Assessment</u> Neurobiology of pain test can be used formatively. Practical components of resource sessions and PBL's used to give formative feedback. <u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique
PHTY91-404	Musculoskeletal Physiotherapy II (4wks content)	The principles of pain assessment, measurement and management are applied to upper limb peripheral musculoskeletal disorders (acute and chronic) including post-operative pain conditions as well as spinal post-operative pain conditions. Discussed in 8x3hr resources session and 3xPBL's and 1xstandised patient experience	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 2) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Formative Assessment</u> Practical components of resource sessions and PBL's used to give formative feedback. <u>Summative Assessment</u> Theory exam – Short and long an-swer Q's for content related to as-sessment, measurement and man-agement of pain OSCE- verbalise rationale for and perform pain assessment, measure-ment and treatment technique

PHTY92-405	Cardiorespiratory II (4wks content)	The principles of pain assessment, measurement and management are applied to cardiorespiratory and abdominal post-operative pain and differential diagnosis of visceral pain. Discussed in 8x3hr resources session and 3xPBL's and 1xstandised patient experience	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 2) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Formative Assessment</u> Practical components of resource sessions and PBL's used to give formative feedback. <u>Summative Assessment</u> Theory exam – Short and long answer Q's for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique
PHTY92-408	Musculoskeletal Physiotherapy III	The principles of pain assessment, measurement and management are applied to spinal musculoskeletal disorders (acute and chronic). Discussed in 16x3hr resources session and 6xPBL's.	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 2) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Formative Assessment</u> Neurobiology of pain test can be used formatively. Practical components of resource sessions and PBL's used to give formative feedback. <u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique
PHTY92-409	Neurological Physiotherapy			

PHTY92-412	Physiotherapy Leadership, Management and Advocacy			
PHTY92-413	Physiotherapy for Chronic Disease and Disability	The principles of cancer pain assessment, measurement and treatment. Discussed in 1x3hr lecture	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 2) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique
PHTY93-415	Maximising Human Potential	Chronic widespread pain assessment, measurement and management. Discussed in 1x3hr lecture.	Highlight ISAP curriculum areas covered in session learning objectives to reduce hidden curriculum: 2) Continue with current content covering ISAP curriculum 2A-I, 3A-K, 4A	<u>Summative Assessment</u> Theory exam – MCQs, SAQs and KFQs for content related to assessment, measurement and management of pain OSCE- verbalise rationale for and perform pain assessment, measurement and treatment technique
PHTY93-416	Evidence Based Practice Project I			
PHTY93-418	Evidence Based Practice Project II			
PHTY93-420	The Well Rounded Physiotherapist			

Reflections on use of assessment within my teaching philosophy

Allan Abbott

My understanding of student assessment is that it is a process of gathering information on how well students are doing in achieving the intended learning outcomes of the course. Assessment and timely feedback should be used to aid students to attain the intended learning outcomes. This requires that the assessment methods used are properly aligned to the course intended learning outcomes. As a teacher in musculoskeletal and research methodology related coursework in the Doctor of Physiotherapy program, the assessment methods used in my teaching practices include both formative and summative approaches.

Formative assessment approaches are used for the purpose of “assessment for learning” where the teacher and student work together to assess the student’s knowledge, what they need to learn to improve and extend this knowledge, and how the student can best get to that point. The formative assessments methods I have used in my teaching at Bond University includes the use of rubrics based on specific performance criteria and reflections on student performance. This has provided the basis for providing targeted feedback for student performance in problem based learning tutorial work and standardised patient learning experiences. To complement this formative assessment process, I have also given students reflective learning tasks to think critically about their learning, to understand performance standards and critique their own work in relation to these standards.

Summative assessment approaches used for the purpose of “Assessment of learning” include written examinations, oral presentations and objective structured clinical examinations. These assessments have been used to give final grades for the student’s level of knowledge and skill in line with the course intended learning outcomes.

When considering the principles of assessment in relation to my own current practice, my assessment methods are aligned to the intended learning outcomes for the coursework I have delivered, but I feel that the clarity in which these are aligned could be improved. I feel I need to converse this to the students in a more simplified manner to inform them of the big picture with regards to intended learning outcomes, the alignment with the material to be delivered and the alignment of assessment. Even though this is mapped out in the subject outline documents given to students, I feel I should clarify the alignment regularly with students to assure their understanding of the purpose of assessment, the structure of assessment and the advantages of receiving and acting upon feedback to improve learning in line with the intended learning outcomes.

To conform with the principles of “assessment for learning”, I also need to improve on giving more timely and targeted feedback to students about their work. This should be done by explaining the reasoning behind my judgements immediately after the student assessment, insightfully using the evidence for future individual student learning activities and to motivate the students in setting personal learning goals from the assessment evidence.

I believe assessment should always be available for both teachers and students to use as a strategy to assist them in learning about how students learn, checking what has been learnt and providing direction for future learning.

I believe an assessment framework is important for selecting the appropriate level of assessment with regards to the level of the intended learning outcomes. The understanding of Miller's pyramid (1990) has provided me with a guide for aligning the appropriate level of assessment dependent upon if the intended learning outcome is on a basic level of knowledge, the application of knowledge, simulation of skills or the in-vivo performance of skills for skills competency. This is helpful in blueprinting where intended learning outcomes are aligned to specific teaching content and also specific assessment techniques. The Hamdy (2006) paper provides a good guide for blueprinting.

I have developed an understanding for the appropriateness of assessment instruments according to the following criteria (1) validity, (2) reliability, (3) educational impact, (4) stakeholder acceptability and (5) practicality including cost. In my previous experience with considering the acceptability of assessment instruments, I have considered these aspects to a certain extent without specific knowledge of the literature reported in this field. The paper by van der Vleuten (1996) provides me with a good guide for taking into consideration the validity and reliability issues involved with assessment, the education impact and acceptability of the assessment as well as the costs and resources involved.

With knowledge of both Miller's assessment pyramid and van der Vleuten's criteria for assessment appropriateness, new light has been shed on possible areas we can analyze and improve on in the assessment program in the Doctor of Physiotherapy Program. This has generated the formulation of some further research questions as follows:

- 1) How does Miller's application assessment level relate to Miller's simulation assessment level with regards to student performance on theory based assessment types (MCQ,SAQ,KFQ) compared to OCSE and simulation patient based assessment types in the Doctor of Physiotherapy Program?
Analyses – correlation/regression between assessment levels and the utility of the assessments using van der Vleuten's utility model (reliability, validity, educational impact, acceptability, resources).
- 2) What is the relationship between student performance on simulated patients and OSCE based assessments according to Miller's simulation level assessment in the Doctor of Physiotherapy Program?
Analyses – correlation/regression between assessment levels and the utility of the assessments using van der Vleuten's utility model (reliability, validity, educational impact, acceptability, resources).
- 3) How does student performance according to Miller's application level based assessments (MCQ,SAQ,KFQ) and simulation based assessment (OSCE and simulated patients) relate to in vivo clinical placement assessment for the Doctor of Physiotherapy Program?
Analyses – correlation/regression between assessment levels and the utility of the assessment using van der Vleuten's utility model (reliability, validity, educational impact, acceptability, resources).
- 4) Does the inclusion of simulated patients compared to historical data where no simulated patient experiences occurred improve the student's outcomes according Miller's application level based assessments (MCQ,SAQ,KFQ) and simulation based

assessment (OSCE) and in vivo clinical placement based assessment for the Doctor of Physiotherapy Program?

Analyses – comparison of Bond simulated patients based assessment data to historical data of the assessment. Comparison of appropriateness of the 2 assessment programs according to van der Vleutens utility model (reliability, validity, educational impact, acceptability, resources)

The contingencies for investigating these research questions are as followed:

- A good historical sample is available for analysis (theory papers including MCQ,SAQ,KFQ, also OCSE, clinical APPs) as a control group for comparisons.
- The Doctor of Physiotherapy simulated patient study plan is already formed and ethically approved in accordance with a national HWA financed project for embedding simulated patient learning experiences into physiotherapy programs. Bond ethics approval for these additional research questions however needs to be amended.
- Approval from HWA project leaders is also needed to confirm that Bond University simulation patient assessments can be utilized in these additional analyses.

References

1. Miller GE. The assessment of clinical skills/competence/performance. Acad Med 1990;65(Suppl.9):S63–S67.
2. Hamdy H. Blueprinting for the assessment of health care professionals. The Clinical Teacher 2006; 3: 175–179
3. van der Vleuten CPM. Assessment of professional competence. Advances in Health Sciences Education 1996; 1:41-67.