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Improving students' interpersonal skills through experiential small group learning

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Abstract

Health professional students must be equipped with the skills necessary to interact with patients. Effective interpersonal skills are difficult to both learn and teach, requiring development, practise and evaluation in both educational and clinical settings. In professions such as physiotherapy, traditional approaches to teaching these skills have encompassed clinical modelling, and stand-alone didactic teaching of the theory behind communication. These provide limited opportunity for students to practise and receive feedback on their interpersonal and communication skills. This paper describes the implementation of an experiential small group learning approach in an undergraduate physiotherapy program and discusses outcomes. Implications for practice are that: experientially based small group learning with opportunities for practise, reflection, self-evaluation and feedback, can improve students' confidence and interpersonal skills; consistent and scaffolded participation in experiential learning opportunities and assessment of this participation across the program is key to this approach. Interpersonal skills remain a challenge for new graduates; support and mentoring in this domain by supervisors may enhance the transition to work.

Keywords

Experiential learning, small group learning, problem based learning, physiotherapy education, interpersonal skills, preparation for practice.

Introduction

Health professional students must be equipped with the skills and compassion necessary to interact with patients, especially those who are at their most vulnerable and in need of help. In physiotherapy "effective communication in all forms underpins every aspect of good practice" (Physiotherapy Board of Australia, 2014). Interpersonal skills extend beyond patient and practitioner relationships: effective interpersonal communication is necessary between healthcare providers; between healthcare providers and carers or family members; within team and group settings (Berry, 2007; Reynolds, 2005).

Interpersonal skills entail effective communication, empathy, active listening, and cultural competence as well as professionalism. Communicating professionally includes "showing respect for people, providing sound evidence or arguments to support your proposed or actual actions, and working within the relevant ethical and legal parameters of professional health practice" (Higgs, Ajjawi, McAllister, Trede & Loftus, 2008, p. 7).

Interpersonal skills are difficult to both learn and teach, requiring development, practise and evaluation in both educational and clinical settings (Reynolds, 2005). Preparing students for clinical settings involves a broad range of skills, including ability to use clinical reasoning, patient positioning and handling, and communication and interpersonal skills. In professions such as physiotherapy, there have traditionally been two approaches to teaching these skills: clinical modelling, and stand-alone didactic teaching of the theory underlying professional communication.

The clinical modelling approach frequently occurs within practical classes, where class time is focused on discipline specific skills, with limited opportunity for students to practise and receive feedback on their interpersonal and communication skills (Maloney, Storr, Paynter, Morgan & Ilic, 2013).

The second approach involves teaching the theory behind communication and interpersonal skills. A review of teaching and learning communication skills in physiotherapy in the UK (Parry & Brown, 2009) indicated the majority of programs offered specific stand-alone communication modules in early years of the course, using didactic methods, and assessed via oral or written reports. When education about communication is based on theoretical knowledge alone, with no alignment to practical applications, the transfer of that knowledge to the clinical setting seldom happens (Wloszczak-Szubzda & Jarosz, 2013).

Health professional education programs are now introducing more explicit teaching and assessment of interpersonal and communication skills under the banner of "professional skills". Gibson and Molloy (2012) indicated newly graduated health professionals have "a greater need for professional skill development, and assessment, within the health professions". Specific to physiotherapy, Ajjawi & Higgs (2008) describe interpersonal skills, including communication, collaboration and critical self-evaluation, as important skills and attributes which need to be explicitly included in physiotherapy programs if we are to better prepare students for employment. Evidence indicates it is important that students are motivated to change and develop their communication skills, and that the training should be experientially based and include formative feedback (Parry & Brown, 2009, p. 298).

Experiential small group learning

At Charles Sturt University (CSU), in regional New South Wales, Australia, physiotherapy has been taught since 1998, with an intake of 50-60 students per year. The four year undergraduate degree program took a traditional physiotherapy approach in which students attended lectures for theoretical content and practical classes for clinical skills. Students went on clinical placement blocks in second, third and final years. Interviewing skills were taught from the first year of study in large groups of 20-25 students. The focus was on gaining relevant clinical information, with limited opportunities for modelling and practice of interpersonal skills.

In 2010, a significant change was made to the undergraduate physiotherapy degree at CSU with the transition from a traditional approach with a single Problem Based Learning (PBL) subject in final year, to an integrated PBL course in which key professional practice subjects in every year use the small group, PBL approach. At the same time, the course was offered on a second campus.

Students commence small group tutorial sessions from Week One in first year. Tutorial groups have between 9 and 12 students and cover one clinical case each week, with two tutorial sessions, a lecture, a practical class and a plenary session which draws together the content for that week, linking learning outcomes to the case.

Within tutorial sessions the focus is on physiotherapy specific outcomes, and also communication, interpersonal skills and effective group dynamics. Students will have worked in 11 different groups by the time they graduate, with multiple opportunities for developing interpersonal skills, and effectively coping with different group dynamics, as well as self and peer evaluation and feedback.

PBL groups are facilitated by physiotherapist tutors drawn from academic and clinical staff. Typical subject delivery involves two tutors on each campus, commonly one permanent academic staff member and one casual tutor from the local physiotherapy community. The tutors act as facilitators of learning, putting the discussion on the right track when needed, and assisting the group to identify aspects they need to research further. The tutor uses open-ended questions to encourage critical thinking and collaborative learning, and models the various steps of the reasoning process. There is a focus on student and group needs, rather than content delivery (Azer, 2008). The small group setting enables activities and approaches for experiential based learning and formative feedback.

In first and second year, prior to clinical placements, role play is used, with students taking on the role of physiotherapist and having the opportunity to practice their communication skills in relation to patient interviews, patient education, conversations with other professionals, difficult or personal conversations with patients, and dealing with difficult situations as a student. These role plays provide opportunities for students to reflect on their performance, make changes and be given immediate feedback. During tutorials, students also practise both closed and open ended questioning, both as part of role plays, but also when clarifying their understanding of cases and interacting with peers and tutors. Interviewing skills are assessed in the 1st year in a reflective task, in which students video themselves interviewing a peer “patient” for a simulated case, and then view and critique their performance and reflect on ways to improve. The broader communication skills are also assessed in practical exams. (Appendix 1: 2nd year Practical exam rubric – communication)

Interpersonal and communication skills are further developed within the PBL process in the following ways:

- students present concise information about their weekly research topic to their peers each week;
- the tutorials are facilitated such that students build on information provided by others;

- students extend the group conversation by asking pertinent questions to further their understanding about the case;
- students practise using professional language and explaining concepts in lay terms;
- students negotiate with each other around group activities and weekly research topics; and,
- students engage in structured reflections, both individually and as a group, on their performance at set time points throughout each year where they will provide peer feedback to others in their group.

There are individual interviews with tutors to facilitate self-reflection and to review individual performance within the group. The tutor assesses these skills during each session through a scaffolded approach which builds expectations for performance across the years. (Appendix 2: 2nd year rubric components for "Communication and working within groups")

Student interpersonal and communication skills relating to effective team participation, helping a team to achieve outcomes, and team leadership have been scaffolded to move students progressively toward stronger understanding and, ultimately, greater independence in both the PBL learning process (Abbott, 2014) and also teamwork skills. In the first year all tutorials are facilitated by a tutor, in 2nd year, one tutor moves between two groups for the first tutorial such that students run the group but have the reassurance that they are on the right track. In 3rd year, the students run the first tutorial completely alone – with "group leader" guides similar to the tutor guides. In the final year, there is increasing complexity of the cases so tutors fully facilitate the tutorials.

The increasing requirement for students to run group sessions themselves allow for the development and demonstration of group leadership skills pertinent to such professional activities as participating in a ward meeting, chairing a family conference, or running a training session for staff, and are more specifically assessed in the 3rd year. (Appendix 3: Scaffolding of "Communication and working within groups" assessment items across the years).

Outcomes

Student outcomes

To evaluate the impact of this curriculum change, we investigated how prepared our final year PBL students felt for physiotherapy practice, in comparison with final year students from the Traditional course. This research used a modified version of the *Preparation for Hospital Practice Questionnaire* (PHPQ) (Dean, Barratt, Hendry & Lyon 2003; Hill, Rolfe, Pearson, & Heathcote 1998) to survey graduands across eight key domains:

- *interpersonal skills* (4 questions, for example, deal confidently with "difficult" patients);
- *confidence and coping* (6 questions, for example, remain calm in difficult situations);
- *collaboration* (4 questions, for example, be sensitive to the needs of other staff);
- *patient management and practical skills* (5 questions, for example, carry out basic physiotherapy rehabilitation procedures) ;
- *understanding science (as basis of disease and therapy)* (4 questions, for example, apply an understanding of basic sciences to clinical conditions);

- *prevention* (preparedness to incorporate health promotion and disease prevention) (6 questions, for example, encourage patients to improve their health habits);

- *holistic care* (appreciation of impact of multiple variable on patients' health) (6 questions, for example, appreciate the importance of a patient's cultural/ethnical background); and

- *self-directed learning* (evaluation of performance, identification of learning needs) (6 questions, for example, take responsibility for own learning).

Modifications to the survey involved changes to the wording of 13 of the 41 questions to reflect physiotherapy practice. These modifications did not change the essence of the questions. For example, "handle most clinical emergencies" became "handle most clinical situations" and "select drugs on the basis of their costs, risks and benefits" became "select treatments on the basis of their costs, risks and benefits." As such, we felt that these changes would minimally impact on the reliability of the questionnaire. Students were asked to indicate responses on a six-point Likert Scale (0=don't know; 1=very inadequately; 2=inadequately; 3=neutral; 4=adequately; 5=very adequately).

Results showed that both the PBL cohort (n =42, RR= 72%) and the Traditional cohort (n=16, RR=37%) generally perceived themselves to be adequately prepared for physiotherapy practice. The mean scores of each scale of the PHPQ were compared between cohorts using an independent samples Mann-Whitney U-test which showed a significant difference between the mean scores of the traditional (2.99, CI: 2.5-3.4) and PBL cohorts (3.53, CI: 3.4-3.8) in relation Interpersonal skills. There was also a significant difference between the mean scores of the traditional (3.64, CI: 3.3-3.9) and PBL cohorts (4.16, CI: 4.0-4.2) in Confidence.

It is interesting to note that although the PBL cohort felt more prepared for practice in terms of their interpersonal skills (mean rating 3.53) than did the traditional cohort (mean rating 2.99), this was still the domain with the lowest ratings. The interpersonal skills subscale included: dealing with difficult patients, counselling a distraught patient, speaking with a patient about their terminal illness, and dealing with a dying patient. The implications for employers are that new graduates may feel a need for further development of their interpersonal skills, and may require formal support during their early working life, with emphasis on developing skills to work with distraught patients, and deal with death and dying. From a teaching perspective, although the experiential, small group approach has been more effective than the traditional approach, there is scope for improvement.

These findings need to be interpreted with some caution as the results for the PBL cohort may be inflated due to greater sample size. In addition, the data may be confounded by the single year sample in each cohort. This aspect is acknowledged but could not be addressed at the time the study commenced.

We propose that the consistent and scaffolded exposure to experiential learning and assessment is the key difference in our approach which could explain these changes. This may support the value of implementing PBL in this holistic way, with the PBL subjects being well integrated and scaffolded both horizontally within a year, and vertically throughout the years. Indeed, the model of experiential learning adopted in our Physiotherapy course, by utilising PBL and other student-centred activities, corresponds with the model suggested by Fowler (2008), illustrated in Figure 1, optimising both experience and reflection to generate the desired learning outcomes.

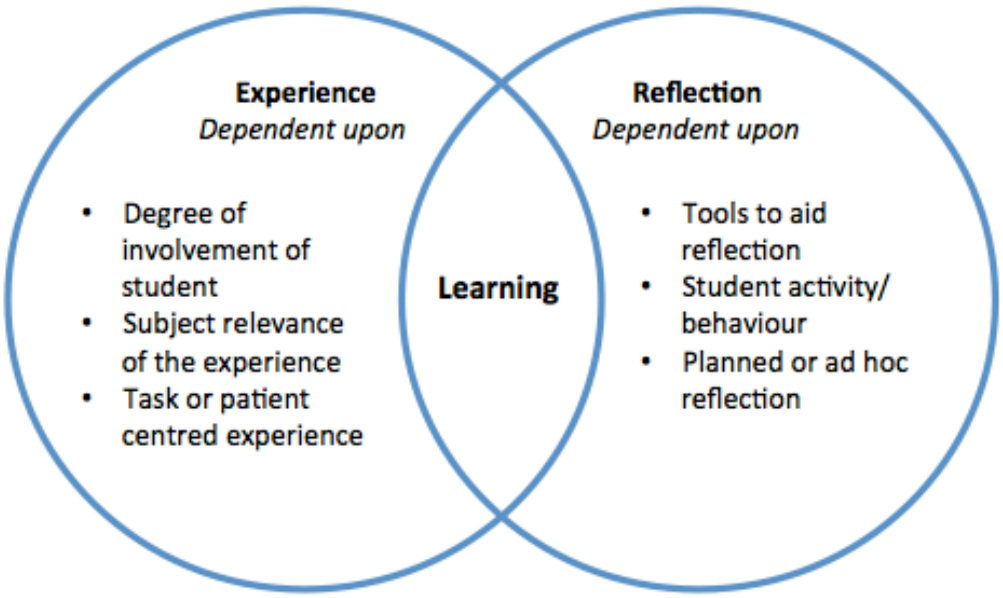

Figure 1. Experiential learning (from Fowler, 2008, p. 430)

Student perspective

CSU students were routinely surveyed at the beginning of their second year, using the Student Experience Questionnaire (SEQ). (Appendix 4: Student Experience Questionnaire (SEQ) results summary). There were similar levels of agreement (i.e. less than 10 percent difference) between the PBL and Traditional cohorts for just over half of the statements. Some statements, however, showed more marked differences (over 20%) between the cohorts. Statements with which substantially more of the PBL group agreed include:

- the course sharpens my analytical skills;
- my course helps me to develop the ability to plan my own work;
- relevant learning resources are accessible when I need them; and,
- I am satisfied with the quality of the academic support provided by the university.

These results suggest the PBL students have an increased confidence in their independent learning skills, and feel supported by academic staff in this experiential small group learning approach. However, this does not necessarily mean the students are enthusiastic about the PBL process. There was a marked difference between the groups, with 28% fewer PBL students than Traditional students agreeing with the statement "University stimulates my enthusiasm for further learning" mirroring results of Birgegard & Lindquist (1998) and Wijnia, Loyens & Derous (2011). Birgegard & Lindquist (1998), for example, found medical students did not like PBL, but felt it better prepared them in terms of self-improvement, critical thinking and problem-handling.

A pattern seen across many of the responses was greater polarity of opinions within the PBL cohort, with more students feeling strongly, either positively or negatively, about many of the statements. There are consistently more "strongly agree" responses from the PBL cohort than the Traditional cohort. Although the percentage of students disagreeing is small, there is a greater prevalence of statements with which some PBL students disagree (88% of statements) that do

Traditional students (59%), suggesting there may be a small cohort who don't feel the course is supporting their learning needs. This is consistent with the findings of Hunt, Dwyer, Higgs & Adams (2005) who found the PBL approach liberating for many students, but challenging for a few.

Staff perspective

Academic staff were approached to provide qualitative feedback on their feelings about the new small-group problem-based learning approach. Those staff who teach into PBL seemed generally positive about the small group learning approach although there are recurring issues around the logistical complexity of running such a time and staff intensive course across two campuses with challenges around equity and appropriately skilled staffing. A female first-year tutor offered that:

> *The first year subject has a tutor in each tutorial, we assess specifically for the interpersonal skills we want to improve - Tutors need to be trained, supported and assessed themselves on how they develop these skills... PBL is costly and tutors need training in facilitation before they do PBL*. (Female 1, first year tutor)

In terms of the capacity of small-group learning to improve students' interpersonal skills, the response from staff is mixed. The following quotes demonstrate a diversity of responses.

- *The students engage more with not only the content, but the intent, of the tutorials, and as a facilitator it is wonderful to watch the growth of these students across the years – this is particularly evident in those students who initially struggle to open up in a group setting, but blossom with the opportunity to practise their communication and interpersonal skills in a small and safe environment.* (Female 2, first, second and third year tutor)

- *There needs to be a careful dissection of Interpersonal skill development. ... it occurs for those who engage, if they choose not to (engage) then little or no growth occurs.* (Female 3, clinical education coordinator)

- *Too much PBL get them used to talking and not doing!* (Female 3, clinical education coordinator).

What's next

This paper discusses initial evidence in support of the integrated PBL approach in our undergraduate physiotherapy course. Specifically, it looks at the potential value of PBL as a tool for aiding students' development of interpersonal and communication skills. Dolmans, De Grave, Wolfhagen and Van Der Vleuten (2005) discuss the four key learning principles that are integrated into PBL; learning should be a constructive, self-directed, collaborative and contextual process. The collaborative principle, in particular, may be a driver in the development of interpersonal and communication skills. Dolmans et al. (2005) indicated that there are factors within this collaboration that enhance learning. It may be that several of these factors, which are present in PBL tutorials enhance not only learning but also confidence in inter-personal and communication skills. However, within our course design process, these factors are not explicitly addressed neither within the tutor training, nor within the assessment process. Whilst there is some indication that the PBL cohort felt more prepared for practice in terms of their interpersonal skills, the results indicate clear scope for further improvement in this area. A more explicit focus on factors within the collaborative learning situation, such as elaborations, verbalisation, co-construction, and mutual support, both in teaching and assessment, may reinforce the development of interpersonal and communication skills in our students.

We plan to further develop our PBL assessment with a longitudinal tool which is progressively challenging and has criterion-referenced objective standards of student performance. These standards will specifically guide the students and tutors in the PBL process and provide formative feedback to the students on their professional and interpersonal skills (Elizondo-Montemayor, 2004). It is known that assessment plays an important role in further developing multiple dimensions of the medical profession (Friedman, 2000). Specifically integrating collaborative factors into the assessment process may help students to understand and focus on those interpersonal and communication skills required for effective collaboration. It appears critical to the success of this approach that our PBL tutors are also well trained, supported (Bosse et al., 2010) and evaluated on how they facilitate the development of professional and interpersonal skills in their students.

We have some anecdotal evidence to suggest that whilst the PBL approach to learning and scaffolding of interpersonal skills benefits many students, those students who do not engage with the process may be less successful than they may have been with the traditional approach. This requires further exploration in terms of how accurate and prevalent these perceptions are, and specifically which of the strategies used may enhance student engagement and motivation. To understand which factors block students from engaging, we need to consider such questions as: are the modern insights that learning needs to be a constructive, self-directed, collaborative and contextual process true for all students?; Are there some factors within a collaborative learning situation which, for some, may actually hinder development? Savin-Baden and Howell Major (2004) suggested that "students' prior experiences of learning and the particular view of learning they adopt largely affects their ability to engage with and manage PBL" (p. 135).

In considering those students who fail to engage in the interpersonal and communication aspects of PBL, there appear within our cohorts to be at least two groups: students who struggle with the communication requirements of the process; and students who appear disengaged with the whole PBL approach. For the former group, this could relate to underlying English language skills, or confidence around speaking in a group setting. These students may do well with a specific focus on strategies to enhance their ability to verbalise, and co-construct, and a reinforcement of team mutual support within the process. For this group, the potential for PBL to actively assist in developing their interpersonal and communication skills remains high.

For the latter group, that is, students who appear disengaged with the whole PBL approach, considering factors that may either inhibit or encourage "tuning in cognitively and socially" (Dolmans et al., 2005) may be more relevant. Both Ellis, Goodyear, Brilliant and Prosser (2008) and Hendry, Lyon, Prosser and Sze (2006) alluded to the fact that students need to make a clear connection between the learning activity in which they are engaged, and the goal of the learning. Hendry et al. (2006) suggest we may need to help students "develop their understanding of what PBL is about" to help counteract their perception that this form of learning fails to provide sufficiently clear goals, knowledge and skills (p. 574). Perhaps a more explicit understanding of the direct relevance of these skills to the daily practice of physiotherapy, together with more directed and targeted assessment, may help these students to value and engage with PBL.

What are the implications for students who are unable or unwilling to engage in the PBL process? The greatest impact we see to date appears to be in their preparation for workplace learning; this group of students often struggle during their workplace learning experiences particularly with their inter-personal and communication skills and many require further time to reach a competent level of performance. It would seem unlikely that the Traditional approach would provide better preparation for inter-personal and communication skills in early clinical placements, this aspect, however, has not been explored. The planned changes to further enhance the potential of PBL as a tool to develop interpersonal and communication skills with a focus on specific strategies to engage all students may help us to better prepare all students for their clinical placements.

Conclusion

Implementation of a small-group learning approach in the new PBL integrated Physiotherapy undergraduate degree has been a challenging but worthwhile experience. There appear to be benefits for students in the areas of independent learning and interpersonal skill development and satisfaction with the support they receive, although this does not necessarily extend to enthusiasm for further learning. Experientially-based small-group learning allow opportunities for practice, reflection, self-evaluation and feedback and as such can improve students' interpersonal skills. A consistent and scaffolded participation in experiential learning opportunities and assessment, across the Physiotherapy program, with a focus on engaging all students, appears key to the success of the approach.

Whilst staff who teach into the PBL subjects were generally positive about the experience, some concerns are expressed over the suitability of this approach for all students. Our experiences point to the need for better understanding of the underlying factors and impact on those students who do not engage with the experiential small-group learning approach. The literature suggests that, for some students, more explicitly articulating the requirements, goals, skills and knowledge of PBL and relevance of these to professional competence are crucial to their engagement with PBL.

Despite improvements with this approach, interpersonal skills remain a challenge for new graduates. We cautiously argue there is sound justification for further exploration of how to best apply and assess PBL as a tool for improving inter-personal and communication skills.

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Appendix 1: 2nd year Practical exam rubric – Communication

PART B	STANDARDS	HD	D	C	P	F
Be able to demonstrate effective communication skills for a team approach to a client's care, with an emphasis on goal setting.	COMMUNICATION /5 • Clear instruction • Explanations – purpose of technique • Appropriate warnings • CI/Precautions checked • Client monitoring, feedback	Efficiently includes all necessary components / elements of assessment and/or treatment communication.	Includes all components / elements of assessment and/or treatment communication	Includes almost all components / elements of assessment and/or treatment communication.	Includes most of the components / elements of assessment and/or treatment communication.	Includes less than half of the components / elements of assessment and/or treatment communication.
		5	4	3	2.5	<2.5
	Quality of communication /3	Language is outstanding, clear, succinct, professional, no use of jargon, relaxed ease of rapport with patient.	Good use of language and good rapport with client, no use of jargon.	Good use of language and good rapport with client, minimal use of jargon.	Adequate language and interaction with client, may have slight awkwardness at times, may use some jargon.	Awkward use of language, difficulty relaying communication to client and developing rapport.
		3	2.5	2	1.5	0.5-1
Your Mark /8						
Comments						

Appendix 2: 2nd year rubric components for "Communication and working within groups"

Unsatisfactory (0-49%)	Satisfactory (50-64%)	Good (65-74%)	Very Good (75-84%)	Excellent (85-100%)
• Does not listen to group members. • Speaks over other students. • Repeats things already stated.	• Actively listens to other group members. • Does not speak when others are speaking. • Does not repeat something already stated.	• As for satisfactory *plus*	• As for satisfactory *plus*	• As for satisfactory *plus*
• Dominates discussion.	• Builds on what others are saying by adding another statement.	• Builds on what others are saying by relating own opinion to that of the other person.	• Builds on what others are saying, paraphrasing to check they have understood the meaning, synthesising the information to create a new opinion.	• Builds on what others are saying, paraphrasing to check they have understood the meaning, synthesising the information to create a new, supported opinion.
• Uses colloquial terminology.	• Uses a mixture of discipline and colloquial terminology.	• Consistently & correctly uses discipline terminology	• Consistently and correctly uses discipline terminology.	• Consistently and correctly uses discipline terminology and clearly explains unfamiliar terminology.
• Fails to actively participate in the discussion.	• Actively participates in the discussion.	• Actively participates in discussion and relates learning issues to case.	• Actively participates in the discussion and relates learning issues to case, clarifying ideas.	• Actively participates in the discussion and relates learning issues to case, clarifying ideas.
• Fails to ask any questions.	• Asks questions but these may be closed.	• Asks open questions to deepen discussion	• Consistently asks open questions to deepen discussion.	• Consistently asks open questions and integrates response into the discussion.
		• Attempts to involve quieter members in discussion	• Actively involves quieter members in discussion	• Actively involves quieter members in discussion via various techniques

Appendix 3: Scaffolding of "Communication and working within groups" assessment items across the years

Criteria	1st year	2nd year	3rd year
Questioning	Focus is on gaining confidence to ask questions.	Expected to be able to ask open questions, focus is on gaining skills in consistency and integrating responses into discussion.	Expected to both ask and answer questions.
Involvement	Expected to at least attempt to build on what others say.	Expected to actively participate in discussions.	Expected to actively participate in discussions.
Leadership	Not expected, but acknowledged at Very good and excellent levels.	Good level of performance or above require evidence of leadership, e.g. involving quieter members in discussion.	As for 2nd year *Plus* evidence of leadership in PBL process.
Leadership in PBL process	Group leaders fully supported by tutors.	Group leaders developing skills in independently running tutorials, but not assessed in these skills.	Leadership in PBL assessed, e.g. at pass level, 50-65% of the time. Occasionally works to drive the PBL process through engaging other class members, only moving case on when appropriate, consistently identifying when group is moving through the case too quickly/superficially, clarifying information from tutor when required.

Appendix 4: Student Experience Questionnaire (SEQ) results summary.

(Response rates: Traditional n = 15 32%, PBL n = 17 23%. Responses to statements relating to institutionally provided resources have not been included.)

Statement	% agree (includes Strongly Agree and Agree)		% Strongly Agree		% Disagree (includes Strongly Disagree and Disagree)		% Strongly Disagree	
	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort
The course provides me with a broad overview of my field of knowledge.	100	88	13	24	0	6	0	0
The course develops my confidence to investigate new ideas.	93	94	27	24	0	0	0	0
My lecturers are extremely good at explaining things.	40	59	13	18	0	12	0	6
Course materials are relevant and up to date.	80	71	0	18	0	24	0	0
The course develops my problem solving skills.	80	76	13	47	0	18	0	0
I am confident in locating relevant information for my study through the library.	60	41	7	12	20	24	7	6
The course helps me develop my ability to work as a team member.	80	88	7	47	7	6	0	0
My university experience encourages me to value perspectives other than my own.	100	88	40	35	0	6	0	0
The study materials are clear and concise.	60	59	0	0	7	18	0	0
The teaching staff of this course motivate me to do my best.	60	65	7	18	7	18	0	6

Statement	% agree (includes Strongly Agree and Agree)		% Strongly Agree		% Disagree (includes Strongly Disagree and Disagree)		% Strongly Disagree	
	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort
The course sharpens my analytical skills.	60	82	7	24	0	6	0	0
I am satisfied with the course and careers advice provided.	53	59	7	24	13	18	0	0
The teaching staff work hard to make their subjects interesting.	73	71	13	24	13	6	0	6
University stimulates my enthusiasm for further learning.	87	59	13	18	0	12	0	6
My course helps me to develop the ability to plan my own work.	67	88	7	24	0	6	0	0
The course improves my skills in written communication.	80	65	7	12	13	24	0	0
As I do this course, I feel confident in tackling unfamiliar problems.	60	76	7	0	7	6	0	0
It was made clear what resources were available to help me learn.	67	71	20	18	0	6	0	6
Relevant learning resources are accessible when I need them.	53	82	27	18	7	0	0	0
The staff put a lot of time into commenting on my work.	47	53	0	12	33	18	0	0

Statement	% agree (includes Strongly Agree and Agree)		% Strongly Agree		% Disagree (includes Strongly Disagree and Disagree)		% Strongly Disagree	
	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort	Trad. cohort	PBL cohort
I learn to apply principles from this course to new situations.	93	88	0	18	0	6	0	0
The teaching staff normally give me helpful feedback on how I am going.	60	65	0	12	7	12	0	0
The staff make a real effort to understand any difficulties I might be having with my work.	53	71	7	0	20	0	0	0
I consider what I learned valuable for my future.	93	76	20	35	0	12	0	0
I feel I belong to the University community.	73	82	0	47	13	6	0	0
Where it is used, the information technology in learning and teaching is effective.	80	71	7	24	0	12	0	0
I am satisfied with the quality of the academic support provided by the university.	60	82	7	24	20	6	0	6
Overall I am satisfied with the quality of this course.	73	82	13	35	7	12	0	6