# Tutor Experiences with Facilitating Interprofessional Problem-Based Learning

**Lisa Margaret Jewell, PhD; Marcel D'Eon, PhD; Nora McKee, MD, CCFP; Peggy Proctor, PT; Krista Trinder, MA**

## Abstract

*Background:* This article describes tutors' experiences with facilitating interprofessional problem-based learning (iPBL), a topic rarely discussed in the literature. We examined tutors' perceptions of what it was like to tutor iPBL, including the rewarding and challenging aspects. We also reported differences between new and experienced tutors.

*Methods and Findings:* The data presented in this article were collected using three versions of a paper-and-pencil survey ($N = 77$, $N = 99$, and $N = 97$ for each version of the survey, respectively) and six focus groups. Surveys were completed at the conclusion of iPBL modules. Both quantitative and qualitative results indicated that tutors found the experience of facilitating iPBL to be rewarding and encountered few challenges. Tutors felt the training they received prepared them well to tutor. They also felt that facilitating iPBL increased their knowledge in the topic area of the iPBL module and of other professional roles, that it enhanced their skills as facilitators, and that they enjoyed observing students learn. New tutors reported significantly more learning and skill development than experienced tutors.

*Conclusions:* Four lessons were derived from our research: 1) use iPBL to offer IPE; 2) invest in tutor training and support; 3) help tutors trust the process; and 4) consider tutor recruitment and retention strategies.

*Keywords:* Interprofessional education; Problem-based learning; Tutors; Facilitation

## Introduction

What are promising ways to deliver interprofessional education (IPE) for health science students, and how might they best be organized? These are profoundly important questions for IPE, which is in its infancy at most Canadian universities. This article describes the experiences of tutors who have facilitated interprofessional problem-based learning (iPBL) [1,2], which is one approach to delivering IPE at the University of Saskatchewan (U of S) in Saskatoon, Canada. Many authorities in healthcare believe that students should be trained in specific interprofessional competencies (e.g., professional roles, communication and negotiation skills, and patient-/client-centred care) in their undergraduate or pre-licensure professional training programs [3-7]. Further, D'Eon [8] recommends that IPE make extensive use of relevant, well-structured, and progressively more complex cases through the expert application of co-operative and experiential learning principles. Accordingly, we identified iPBL as an appropriate strategy for offering IPE to our students, since it incorporates many of the important co-operative and experiential learning principles underlying PBL while enabling students to gain interprofessional competencies.

An important factor to the success of iPBL is using tutors who are prepared to effectively facilitate this mode of learning. To date, only a few studies have been published that focus on iPBL [1,3,9–12] or explore tutors' experiences of facilitating either

IPE [13,14] or PBL [15,16]. We believe it is important to understand the tutor experience of iPBL in order to provide tutors with sufficient support and development and enhance their effectiveness as facilitators. In addition, we want to make tutoring an enjoyable experience because instructors who are satisfied are more likely to be productive, motivated, and committed to their role as tutors [17]. Our research is relevant to the recruitment, retention, support, and development of iPBL tutors.

## Background

### Combining PBL and IPE: Tutors' experiences with facilitating iPBL, PBL, or IPE

The aim of our study was not to examine the advantages or disadvantages of delivering IPE through PBL; however, a few words of justification do provide context for our approach. Various authors and researchers have expounded the strengths and weaknesses of PBL over the past nearly 40 years, with generally inconclusive results. Recent studies show some clear advantages of a PBL curriculum [18–21]. More research is obviously required, but we chose iPBL many years ago for the theoretical advantages of active engagement of the students, the co-operative and collegial aspects, and the emphasis on self-directed learning [8]. Though Freeth [22] recommends that IPE *not* be conducted as PBL if a uni-professional PBL curriculum is already in place, the reasons she provides do not apply to our situation because we did not have a uni-professional PBL curriculum. Indeed, to the contrary, we have gathered evidence that the PBL approach is an effective delivery mode for IPE [2].

Existing research indicates that tutors of interprofessional groups require different skills than those needed to facilitate uni-professional groups [23], but this research was not specific to working with *PBL* groups. In general, the literature recommends that interprofessional tutors have strong group facilitation skills because they will not be able to rely on their own profession-specific expertise when guiding student discussions and work [5,11,22]. For example, a pharmacist who is serving as a tutor for an interprofessional group cannot truly serve as a content expert to the students from nutrition, medicine, nursing, or physical therapy. Similarly, in the PBL process, facilitation skills and fidelity to the PBL process of student discovery and co-operative learning are emphasized. As such, both IPE and PBL put considerable weight on the facilitation skills of the tutor and less weight on content expertise.

But does a lack of content knowledge lessen the learning experience for the students? Studies comparing the effectiveness of content and non-content expert PBL tutors (using measures of student satisfaction and academic achievement) have been largely inconclusive, though process skills seem slightly more crucial than content knowledge [24–31]. However, this debate is complicated because content expertise is poorly defined [32]. The original developers of PBL likely assumed that all tutors were at least physician clinicians [33], and, to them, content expert meant someone with specialist knowledge in particular aspects of medicine relevant to the case at hand. In our iPBL modules, most of the tutors are clinicians but, of course, not in all the disciplines represented in each group. According to the available

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

www.jripe.org

research, these clinicians likely possess the background knowledge needed to be effective group facilitators, though they are not, nor can they be, content experts in every profession. Consequently, we believe that PBL groups are not compromised when they are facilitated by clinicians who are not experts in all professions but who do have some relevant background knowledge and effective facilitation skills. In fact, we have found iPBL to be effective for teaching students both content knowledge and about other professions [2,34,35]. Seeing the congruency between IPE and PBL, and wanting to test our intuition that tutors would find the experience enjoyable and manageable, we sought to learn about and describe the actual experiences of tutors who participated in iPBL groups to ensure tutors would: 1) have sufficient support and development to enhance their effectiveness, and 2) find the iPBL facilitation enjoyable to ensure optimal recruitment and retention.

Previous studies on the experiences of PBL tutors have found that they become more confident facilitating with more experience [9,16,36] and that one of the greatest challenges they face is finding a balance between trusting the process and providing information [9,13–15]. Tutors also have reported high levels of intrinsic motivation associated with a belief in the philosophy of PBL and a sense of responsibility to facilitate learning among students [16]. Finally, specific training for interprofessional group facilitation has been identified by tutors as being important [13,14]. Since our research explores the experiences of iPBL tutors, it enabled us to compare their experiences to the more frequently reported experiences of uni-professional PBL and interprofessional small group (non-PBL) tutors.

As outlined above, very few studies report on delivering IPE through PBL, and, of those, even fewer have explored the tutor experience. We conducted a literature review wherein we searched MEDLINE, ERIC, and CINAHL using the following keywords in combination: PBL, interprofessional, interdisciplinary, multi-professional, multi-disciplinary, tutor, and facilitator. Most of the studies located involved a limited number of related professions, and all but two [2,9] were small-scale, optional experiences. Interprofessional PBL, as practiced at the U of S, involved up to seven different professions and as many as 300 students at a given time. Moreover, it was mandatory for most students. Given the relative void in the literature in this area, our study was primarily exploratory. From our review of the literature and our own experiences as uni-professional and, eventually, iPBL tutors, we expected to find that: 1) training for tutors in classic PBL (i.e., training which adheres to the best practices of teaching development [34]) would be sufficient because of the strong emphasis placed on process and facilitation, 2) tutors would find facilitation enjoyable since they volunteered and were trained well, 3) the interprofessional nature of the groups would not impose serious challenges because of the nature of the PBL process employed, and 4) tutors would become more skilled at facilitating iPBL with increasing experience.

## A description of iPBL at the U of S
The iPBL collaboration at the U of S began in 2003 with students in physical therapy and medicine and eventually grew to include pharmacy, nutrition, nursing, social

work, and clinical psychology. At times, we engaged over 300 students in the same case on the same afternoons, as previously documented [2]. These health and human services programs were then, and are still, delivering curricula using a conventional pedagogical design (lectures, small group discussions and exercises, skills laboratory work, and various patient and clinical experiences). Moreover, these programs deliver their curricula independently, despite their co-existence on one campus. In 2003, not only was the PBL experience new to students and tutors, but so was IPE.

Since the U of S health science programs had not incorporated any PBL into their curricula prior to the iPBL modules, there were virtually no trained tutors on campus. The PBL tutor training experience, previously described in D'Eon, Proctor, Bassendowski, and Udahl [34], was structured with pre-workshop preparation, small- and large-group discussions, observation of a staged but "real" PBL group facilitated by the workshop leaders, role play practice of specific facilitation skills, pre-module orientations, and pre- and post-PBL session support meetings. An hour before the initial session of each module, all tutors participated in an orientation for the specific module where they reviewed key elements of the case and crucial facilitation skills and tasks. To further support and develop tutors, informal and voluntary 15–30 minute briefing and de-briefing support sessions were offered while the modules were underway. This training program has proven to be successful and conforms to many best practices in faculty development [37].

Interprofessional PBL at the U of S consists of three modules that explore different challenges facing healthcare professionals: the interface of traditional Aboriginal beliefs with the modern healthcare system, HIV/AIDS as a chronic disease within the modern healthcare system [2], and palliative and end-of-life care [35]. Each of the three patient "problems" or "cases" were carefully constructed and pilot tested, involving close consultation with both community experts and experienced PBL educators. As each new education program joined the iPBL process, they were encouraged to review each case and offer suggestions to ensure it was relevant to students from their particular speciality. Each of the three modules has been regularly revised on the basis of community stakeholder and student feedback.

We employ a classical form of PBL—small group case studies that: 1) present situations to learners for which, by design, they are generally unprepared, 2) allow for student self-directed learning in identifying and seeking out the knowledge needed to address the case before them, and 3) focus on group processes especially important in an interprofessional situation. The unique element of our PBL modules is their interprofessional nature, which is a major source of challenges and opportunities for our tutors. Given the novelty and complexity of iPBL facilitation, we wanted to explore the experience of our iPBL tutors.

## Method

The findings presented in this article reflect data collected from a number of tutor evaluation surveys and focus groups conducted over a four-year period (2006 to 2010). The format of the survey changed over the years in accordance with the types of information we required about the tutors' experiences with facilitating iPBL. We

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

www.jripe.org

present below the specific nature of each version of the tutor survey employed, including the number of tutors who completed each version; however, before doing so, we provide some general information about the tutors' backgrounds and the process of collecting data.

All tutors volunteered to facilitate the iPBL modules and came from diverse academic and clinical backgrounds, including education, medicine, nursing, nutrition, occupational therapy, pharmacy, physical therapy, psychology, and social work. Most tutors were either faculty members, clinicians who practiced in the surrounding community, or graduate students. In any given year, roughly half of the tutors were new, and we found that we were continually recruiting tutors to facilitate the iPBL modules. Approximately 28 to 30 tutors were required for each module.

All tutors were asked to complete an evaluation survey after every iPBL module they facilitated and were given time at the end of each module to do so. Given that some tutors facilitated more than one iPBL module, the same person may have contributed more than one evaluation survey to the present study; however, because we believed that each survey completed by a tutor reflected a unique experience, we included all data collected in our analyses.

Prior to any data collection, ethics approval for this study was sought and received from the U of S Behavioural Research Ethics Board. Informed consent was obtained from tutors each time they completed a survey or participated in a focus group.

### Version 1: Open-ended tutor survey

In the 2006/2007 academic year, a written survey consisting of open-ended questions was used to assess the tutors' experiences with facilitating a given iPBL. Given the infancy of the iPBL project at that time, open-ended evaluation questions were deemed most appropriate, as they allowed us to explore the tutors' experiences without placing constraints on the nature of those experiences (as is often the case when closed-ended or Likert-type questions are used) [38]. To inform the training and support we offered tutors, we were particularly interested in learning about the aspects of the iPBL process that were working well for the tutors, the areas they found challenging, and what it was like to be an interprofessional tutor. Therefore, the open-ended survey asked tutors to comment on: 1) what they enjoyed about facilitating the iPBL module, 2) what they struggled with or found challenging, and 3) what it was like to tutor students from other professional programs. Tutors also were provided with the opportunity to offer additional comments about their experience.

In total, 77 tutors completed the survey, reflecting a response rate of 100% (data were aggregated across the three iPBL modules offered that year: HIV/AIDS, Palliative Care, and Aboriginal Health). Approximately 44% of the tutors were new (i.e., this had been their first or second experience with facilitating a module), whereas the remaining 56% were experienced (i.e., they had facilitated three or more modules).

### Version 2: Closed-ended tutor survey

In the 2007/2008 academic year, tutor surveys consisting of 22 closed-ended items with a Likert-type response scale and two open-ended responses were employed.

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

www.jripe.org

The closed-ended items were designed to reflect the themes that emerged from Version 1 of the tutor survey. The questions examined the learning environment of both the tutors and students; tutors' observations of student interaction; and tutors' perceptions of their own effectiveness, time management, and comfort with the information discussed in the module. All items were answered on a 7-point scale (0 = strongly disagree; 3 = don't know; and 6 = strongly agree) with an option of "not applicable." Before the surveys were distributed, the working group (which consisted of four team members) and a handful of tutors were asked to review the survey to establish the face validity of the items.

Data were collected from 99 tutors over four modules, reflecting a response rate of 85%. This time, 56% of the tutors were experienced, whereas 44% were new. An exploratory principle axis factor analysis was conducted to assess the factor structure of the survey. Seven items were removed as they either loaded on multiple factors or did not load satisfactorily on any factors. A second factor analysis of the remaining 16 items resulted in a four factor model: learning environment, student behaviour and interaction, perceived effectiveness as a tutor, and content issues. However, three of these factors had alpha values ranging from .46–.62, indicating low internal consistency.

### Version 3: Closed-ended tutor survey revised

To address the issue of internal consistency present in the first version of the closed-ended tutor survey, it was revised in the 2008/2009 academic year. This tutor survey consisted of 47 Likert-type questions that examined the general aspects (12 items), rewarding aspects (15 items), and potential challenges (18 items) of tutoring. The survey also contained two open-ended questions, which allowed tutors to comment on other interprofessional experiences and to provide additional comments. All items were answered on the same 7-point scale described above, with higher scores reflecting greater agreement, greater rewards, or greater challenges (see the Appendix for a copy of the survey).

To date, this survey has been employed in the 2008/2009 and 2009/2010 academic years and has been completed by 97 tutors from five modules, reflecting a response rate of 87%. Approximately equal numbers of new and experienced tutors have responded to the survey. Another factor analysis will be conducted once 200 surveys have been completed, as a sample of at least that size is recommended for generating stable factor structures [39]. At that time, we hope to identify reliable subscales and reduce the length of the survey. See Table 1 for a summary of the number of tutors who completed each survey.

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

**www.jripe.org**

### Table 1: Tutor demographic information per iPBL module

| Academic year/tutor survey version | Total number of tutors ($N$)[a] | Previous experience ($N$)[b] | Professional background ($N$) |
|---|---|---|---|
| 2006/2007 | | | |
| Version 1:<br>Open-ended tutor survey<br>(data collected from 3 modules) | 77 | 34 New<br>41 Experienced<br> 2 Unknown | 16 Medicine<br> 5 Nursing<br>13 Nutrition<br>28 Pharmacy<br>15 Physical therapy |
| 2007/2008 | | | |
| Version 2:<br>Close-ended tutor survey<br>(data collected from 3 modules) | 99 | 54 New<br>44 Experienced<br> 1 Unknown | 4 Education<br>26 Medicine<br>13 Nursing<br> 7 Nutrition<br>22 Pharmacy<br>11 Physical therapy<br> 4 Psychology<br> 9 Social work<br> 3 Other |
| 2008/2009 – 2010 | | | |
| Version 3:<br>Close-ended tutor survey revised<br>(data collected from 5 modules) | 97 | 46 New<br>51 Experienced<br> 1 Unknown | 2 Education<br>18 Medicine<br>20 Nursing<br> 9 Nutrition<br>21 Pharmacy<br> 6 Physical therapy<br> 5 Psychology<br> 4 Social work<br> 1 Science<br>11 Other |

[a]Survey data have been aggregated across all iPBL modules (i.e., HIV/AIDS, Palliative Care, and Aboriginal Health) tutors potentially facilitated for each survey instrument
[b]New = first or second experience tutoring; Experienced = third or more experience tutoring

### Focus groups

In the 2006/2007 and 2007/2008 academic years, one focus group was held after each iPBL module to further explore the tutors' experiences with facilitation. In total, six focus groups were held. All tutors were invited to participate in the focus group, but typically only three to five tutors chose to attend. Because 28 to 30 tutors were required for any given module, approximately 17% of tutors opted to participate in a particular focus group. Those who participated belonged to a variety of professions and had varying levels of experience with facilitating iPBL modules. The focus groups lasted one hour and were held during lunch in a meeting room on the university campus. They were facilitated by a member of the research team

(LJ) and detailed written notes were recorded by another member of the team (KT) or a research assistant.

During the focus group, tutors were asked to: 1) share the highlights of facilitating the iPBL module, 2) explain how their own knowledge of the content area influenced their experience as a tutor (including their comfort and ability to facilitate the module), 3) reflect on how the iPBL process went (including what they enjoyed and found challenging), 4) comment on what it was like to be a tutor of an *interprofessional* group (including how their own knowledge of other professions influenced their comfort with, and ability to, facilitate the group), and 5) discuss how prepared (or unprepared) they felt to tutor the iPBL module.

### Data analysis

Quantitative data were analyzed using descriptive statistics and univariate statistical tests (i.e., independent samples *t*-tests). A thematic analysis [40] was used to analyze the qualitative data (i.e., the written comments provided by tutors and notes taken during focus groups). Because this study was exploratory, an open coding process was employed wherein emerging themes were identified by the participants' use of common words and/or expression of similar concepts. As more data were analyzed, the codes were further refined, thus becoming more specific and reflective of the data. Both *in vivo* codes (i.e., those derived from participants' own words) and "sociological" codes (i.e., those that reflect theoretical interpretations of participants' words) were employed [41]. As new or contradictory information arose, codes were modified or added to better fit the data. This process of coding is in line with the grounded theory approach [42]. Qualitative data from all four sources (i.e., survey versions 1, 2, and 3 and the focus groups) were originally analyzed independently of each other; however, upon comparing the results across sources, it was evident that similar themes had emerged and the data were subsequently merged.

Two team members (LJ and KT) were responsible for coding the majority of the data. They initially coded the data independently of each other and then reviewed each other's coding to verify whether each instance belonged to a given thematic category. Since the remaining team members were both tutors and researchers, the findings were then presented to the rest of the team, who participated in a combined member-checking and peer-review process. Specifically, the team was asked to critique LJ's and KT's interpretations of the data and to reflect upon the extent to which the qualitative findings were consistent with their experiences of tutoring, as well as their knowledge of other tutors' experiences. All discrepancies were resolved through discussion. This process served to enhance the confirmability of the data by ensuring that the interpretations made were accurate [43].

Using several versions of the survey to generate both quantitative and qualitative data to support the essential themes identified and to overcome the limitations associated with either data collection method also enhanced the credibility of the study [44]. To enhance the transferability of the data, as much information as possible has been provided about the tutors and the iPBL modules to describe the context in which this study took place [43]. This will enable other researchers employing iPBL

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013


www.jripe.org

to determine whether it is appropriate to transfer our findings to their particular population and setting. Finally, to ensure the authenticity of the data, we used the participants' own words, where possible, to describe their experiences [45].

## Results

The quantitative findings presented in this section reflect those obtained from the most recent version of the tutor survey (Version 3) only. Qualitative comments derived from Versions 1, 2, and 3 of the tutor survey, as well as from the focus groups, are used to further support the results presented and offer deeper insight into the tutors' experiences.

### Feelings of preparation for being an iPBL tutor

Participants reported that, after completing the tutor training workshop, they felt prepared to apply their new skills in the areas of: problem-based learning, interprofessional education, facilitation, evaluating PBLs, practice strategies for PBL, case discussions, PBL case design, and collaborative team building.

During focus groups, tutors indicated that, at first, they felt nervous about facilitating an iPBL module, but they became comfortable once the process started. They reported that the tutor training sessions did "a good job" of preparing them to be iPBL tutors. In particular, tutors mentioned that the strategies discussed in the tutor training sessions about how to deal with "problem" situations were particularly helpful. As well, tutors noted that the fishbowl session (i.e., a session where they observed a mock iPBL student group work through a case) was invaluable. Although tutors were generally satisfied with the training session, they would have preferred to receive more information about the content area of the iPBL module in the tutor package, including information about related health and social services available in the community where the U of S is situated.

### General aspects of being an iPBL tutor

Overall, tutors gave their experience of facilitating the iPBL modules favourable evaluations, with the majority of items on Version 3 of the tutor survey receiving high ratings. Means and standard deviations for the five items with the highest ratings directly related to the experience of being an iPBL tutor are presented in Table 2. In particular, tutors valued the knowledge they gained while facilitating the module and reported that their skills increased. Sentiments regarding tutors' increased knowledge, skill, and confidence are reflected in the following comments:

> Excellent learning experience for both students and tutors! Great opportunity to practice group communication skills and facilitate interprofessional learning.

> I enjoyed learning from the students—I also learned a great deal about HIV—it is an area I do not have a lot of personal experience in. I learned a variety of info from various disciplines.

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

www.jripe.org

This is an opportunity that I thrive on. The learning for me is always there, no matter what level of knowledge I have on the subject.

Each time I tutor a PBL, I become more relaxed, confident.

## Table 2: General items, rewarding aspects, and challenges of the iPBL modules (*N* = 97)

| General Items[a] | Mean | SD | 95% CI |
|---|---|---|---|
| 1. I value the knowledge that I gained while facilitating this PBL module. | 5.02 | 1.05 | 4.81-5.23 |
| 2. I increased my skill as a PBL tutor/teacher by facilitating this module. | 4.85 | 0.92 | 4.67-5.04 |
| 3. I believe that I gained a greater sense of satisfaction facilitating interprofessional PBL than I would facilitating uni-professional PBL modules. | 4.80 | 1.41 | 4.51-5.09 |
| 4. I found it easy to facilitate this PBL module. | 4.75 | 1.19 | 4.50-4.99 |
| 5. I found it easy to engage the students in discussion. | 4.72 | 1.13 | 4.49-4.95 |
| 6. I would prefer to facilitate interprofessional PBL modules than uni-professional PBL modules. | 4.72 | 1.53 | 4.41-5.04 |
| Rewarding Aspects of the iPBL[b] | | | |
| 7. Contributing to interprofessional education through facilitating this PBL module | 5.39 | 0.80 | 5.23-5.55 |
| 8. Contributing to the development of collaborative care through facilitating this PBL module | 5.32 | 0.88 | 5.14-5.49 |
| 9. Hearing the perspectives of students from different disciplines | 5.29 | 0.81 | 5.13-5.46 |
| 10. Observing students learn about the scopes of practice of other healthcare professionals | 5.20 | 0.85 | 5.03-5.37 |
| 11. Student engagement in interprofessional learning | 5.19 | 0.88 | 5.01-5.37 |
| 12. Observing the students learn as an interprofessional team | 5.19 | 0.87 | 5.01-5.37 |
| Challenges of the iPBL[c] | | | |
| 13. Getting too involved in the group | 3.12 | 2.00 | 2.70-3.54 |
| 14. Engaging students in discussion | 2.75 | 1.88 | 2.18-3.32 |
| 15. Passive student(s) in the group | 2.24 | 2.02 | 1.81-2.67 |
| 16. Facilitating the steps and stages of the PBL process in a competent manner | 1.88 | 1.72 | 1.52-2.24 |
| 17. Poor or inconsistent student attendance | 1.75 | 1.94 | 1.33-2.16 |

[a]1 = Strongly disagree; 3 = Don't know; 6 = Strongly agree
[b]1 = Not at all rewarding; 3 = Neutral; 6 = Very rewarding
[c]1 = Not at all challenging; 3 = Neutral; 6 = Very challenging

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

www.jripe.org

### Rewarding aspects of being an iPBL tutor

All 15 items pertaining to the rewarding aspects of being an iPBL tutor received scores greater than 4.00, indicating that tutors found the sessions rewarding. The items with the highest ratings are reported in Table 2. Tutors valued that they were able to contribute to both interprofessional education and the development of collaborative care by facilitating the module. This is supported by the following comments:

> A great experience. I think there is huge potential for changing the professional climate when we educate our students in this kind of collaborative environment. We need to do more of this!

> I really enjoy facilitating their learning and equalizing the playing field.

> I support this effort as one of many ways to break down barriers between professions in training.

> I really enjoyed working with other disciplines. They all brought different views and information to the group. They all worked extremely well together, and I think this will improve relations between professions in the future.

The tutors indicated that seeing the students interacting and learning as an interprofessional team was rewarding. This is echoed in the following comments:

> I enjoyed the way [the students] worked as a team. This is what I enjoyed the most. They were interested in learning the other aspects of the other professions (they chose their research based on the other professions). They got a better understanding of each other's roles and had respect for what each profession could provide.

> Everyone worked well together and certainly learned from each other. They were openly praising the "group members and dynamics." Very enjoyable for myself as a facilitator and very rewarding to observe the group members collaborate so well (and to be so appreciative of each other's knowledge).

> Great experience, especially to watch the cross learning and for groups of students to realize that someone from another discipline knows what they know!

### Challenges of the iPBL

Overall, the tutors reported experiencing relatively few challenges associated with facilitating the modules. Only one item, pertaining to preventing themselves from getting too involved in the group, received a rating higher than the scale midpoint of 3.00 (see Table 2 for greater detail). In the following comments, the tutors describe their struggle with ensuring they are not too directive when facilitating the iPBL modules:

I guess I am still learning to be a facilitator and not a lecturer—the important role of a tutor. There was some frustration by students expecting "answers." It is sometimes a challenge to point them in the right direction.

The greatest challenge was not giving information to the students but to let them find the answers themselves. I enjoyed the process and look forward to participating again.

Sometimes I did not know how much of my own experiences to share.

Although other challenges were rarely encountered, they included engaging students in discussion, working with passive students, facilitating the iPBL in a competent manner, poor or inconsistent student attendance, and dealing with too much time allotted for a module. The following comments describe some of the additional challenges tutors experienced:

The most challenging aspect was "probing" (and feeling it was appropriate to do so!) so that the students would think more deeply and not just stop at the "issue identification" stage.

Getting the students to talk to each other rather than to me. At times it was very challenging to get my group to talk even after probing questions. My group was very quiet and it was a rewarding challenge to get them to talk, especially amongst themselves. At times I was uncomfortable with the silence, but with more experience I think I will improve.

I wish I had more knowledge of Aboriginal Culture, Health, and Healing so I could make sure students were on the right track.

I was doing it for the first time, everything was a challenge—so next time will be much easier. I guess the challenge will always be to motivate students who are not interested and hope for healthy, respectful, and productive group dynamics.

### Placing value on iPBL

In general, tutors believed that the modules were valuable learning experiences for the students and that students learned more from iPBL than from uni-professional PBL. The following comments reflect the value tutors placed on iPBL and a belief in the philosophy of IPE.

PBL is a great way for students to initiate dialogue with each other and to develop interprofessional relationships

I think interprofessional PBLs are fabulous. I've worked in hospitals as a clinical pharmacist, and I love the fact that students are now learning about the roles of different healthcare professionals.

It was an interesting experience to be a tutor not only for IP group but also for the PBL process—I think I prefer IP rather than just my own college since one gets such a pleasant and informative broader perspective on the patient care.

### Comparing new and experienced tutors

Independent samples $t$-tests were conducted to compare the responses of new and experienced tutors beginning in the 2008/2009 academic year on Version 3 of the tutor survey ($N = 97$). Effect sizes (Cohen's $d$) were calculated as a measure of practical significance, where .2 = small, .5 = medium, and .8 = large. In general, new tutors scored higher than experienced tutors on items pertaining to gaining knowledge and acquiring skill as an iPBL tutor. Experienced tutors found it easier than new tutors to facilitate the iPBL module and found poor attendance and facilitating the module in a competent manner to be less challenging. Items for which statistically significant differences were found are reported in Table 3.

### Table 3: Comparisons between new and experienced tutors ($N = 97$)

| Item | New Tutor $M \pm SD$ | Experienced Tutor $M \pm SD$ | Difference |
|---|---|---|---|
| Increased my knowledge about other health science professions. | 4.11 ± 1.50 | 3.38 ± 1.32 | $t(93) = 2.53, p = .013, d = .52$ |
| I value the knowledge that I gained while facilitating this PBL module. | 5.33 ± 0.88 | 4.75 ± 1.11 | $t(94) = 2.85, p = .005, d = .57$ |
| I found it easy to facilitate this PBL module. | 4.43 ± 1.19 | 5.02 ± 1.13 | $t(92) = -2.45, p = .016, d = -.51$ |
| I increased my skill as a PBL tutor by facilitating this module. | 5.27 ± 0.81 | 4.49 ± 0.86 | $t(94) = 4.55, p < .001, d = .93$ |
| Rewarding—my learning about interprofessional healthcare teams. | 4.56 ± 1.01 | 3.98 ± 1.22 | $t(93) = 2.49, p = .015, d = .49$ |
| Rewarding—my learning about other healthcare professions. | 4.51 ± 1.08 | 3.98 ± 1.27 | $t(93) = 2.18, p = .031, d = .45$ |
| Rewarding—increased skills as a PBL tutor. | 5.31 ± 0.67 | 4.42 ± 0.95 | $t(93) = 5.24, p < .001, d = 1.08$ |
| Rewarding—observing the students learn as an interprofessional team. | 5.42 ± 0.75 | 4.98 ± 0.91 | $t(93) = 2.56, p = .012, d = .53$ |
| Rewarding—hearing the perspectives of students from different disciplines. | 5.49 ± 0.66 | 5.12 ± 0.90 | $t(93) = 2.26, p = .026, d = .47$ |
| Challenging—poor or inconsistent student attendance. | 2.25 ± 2.05 | 1.32 ± 1.75 | $t(85) = 2.29, p = .025, d = .49$ |
| Challenging—facilitating the steps and stages of the PBL process in a competent manner. | 2.52 ± 1.84 | 1.31 ± 1.40 | $t(88) = 3.54, p = .001, d = .74$ |

## Discussion

This study served to expand our knowledge about tutors' experiences of facilitating iPBL. We wanted to better understand the tutors' experiences to enhance their effectiveness and satisfaction with iPBL. Based on a review of the literature and our own experiences as iPBL tutors, we fully expected to discover that the basic training for uni-professional tutors would be strong preparation and, not only would the interprofessional nature of the small groups be manageable, but tutors would actually find facilitation energizing, exciting, and enjoyable. We did indeed find what we ourselves had experienced and seen informally in others but had never documented. In summarizing the results, we would like to share four lessons we have learned about iPBL that may be of use to other researchers and academics interested in supporting tutors to facilitate iPBL.

### 1. Use iPBL as an approach to offer IPE

Based on our tutors' experiences, PBL has been an excellent method for delivering IPE. This is a common finding in the few papers on iPBL [1,3,9–12]. Indeed, tutors indicated a preference for facilitating iPBL rather than uni-professional PBL and valued the opportunity to contribute to IPE by facilitating iPBL modules. In fairness, since our university has generally only offered iPBL, our tutors may not have had the opportunity to facilitate uni-professional PBL to make an informed assessment of their preference. However, the interprofessional element has not been a significant challenge for our tutors and was, in fact, one of the elements that drew them to facilitate our iPBL modules. Seeing students learn, learning themselves, and witnessing interprofessional collaboration were reported to be the great attractions for tutors. Moreover, the challenges tutors experienced were the same challenges encountered by uni-professional PBL tutors (and which have been documented repeatedly in the literature): not knowing when to intervene, how to deal with problem situations, and not providing content expertise [9,15,16,46].

Other researchers [22] have suggested that it is not appropriate to incorporate IPE in PBL if a uni-professional PBL curriculum already has been established. However, since we did not have uni-professional PBL, we have not encountered any difficulties integrating IPE into PBL and offering iPBL as a new learning modality at our university. iPBL has been well received by tutors and students alike [2]. Our tutors frequently commented that they perceived iPBL as a means to break down barriers across disciplines; to allow students to learn about, and collaborate with, different professions; and to achieve a broader perspective of patient care. Thus, our findings lend support to our theoretical a priori position that PBL, by its very nature, is well suited to IPE because of its emphasis on facilitation and student-directed learning.

### 2. Invest in training and support for tutors

Our tutors consistently reported that the tutor training sessions prepared them to facilitate iPBL, which is consistent with previously published research citing a need to train tutors [34]. Tutors of iPBL believed that "it was easy" to facilitate iPBL and

**Jewell, D'Eon,
McKee, Proctor,
& Trinder**

engage students in discussion (4.7 out of 6, see Table 2) as a result of the solid preparation they had taken, and they found the experience enjoyable and exhilarating. This is remarkable because the training was only two half-days (i.e., a total of 8 to 9 hours) and essentially the same as for uni-professional PBL, suggesting that the same training may be used to support tutors in facilitating both iPBL and uni-professional PBL. Support measures (module orientations and pre- and post-session briefings) also contributed to feelings of confidence (as attested to by survey and focus groups comments), allowing tutors to have the opportunity to work through any individual or group challenges they faced during a given module. Consequently, to other educators who are considering iPBL, we recommend extensive training for tutors (with a focus on enhancing facilitation skills and navigating the iPBL process) to increase tutors' feelings of preparedness and to enhance their overall effectiveness.

Further, the tutors' enjoyment of the process may be some indication that the iPBL modules themselves were well organized. Co-ordinators of the iPBL ensured that all materials, group assignments, and paperwork were organized in advance of the sessions, allowing tutors simply to arrive, quickly become orientated to that week's materials, and begin facilitation. In fact, it is possible that the cases were so well prepared that anyone (including individuals from non-health science professions) could successfully facilitate the modules. It may be that the success of the modules is somewhat dependent on the quality of the iPBL cases and not solely on the specific characteristics of tutors and their training. Regardless, we recommend centralizing the organization of preparing materials and specifying the process (e.g., for meeting their groups, submitting paperwork) as much as possible in advance to minimize the amount of work required by tutors prior to, and following, each iPBL session.

### 3. Help tutors to trust the process

One of the most significant challenges our tutors faced was feelings of apprehensiveness and inadequacy in terms of facilitating iPBL and effectively guiding students through a case despite a perceived lack of content expertise. Both our new and experienced tutors have demonstrated to us that, if they trust the process (i.e., accept that they do not need to be content experts, and that students will buy into PBL and do what is needed to successfully engage with the case at hand), they will be able to successfully facilitate iPBL. Our results also demonstrated that, as tutors gain experience, they: 1) become more familiar with the iPBL process; 2) gain confidence in their ability to facilitate iPBL by having the opportunity to observe students successfully increase their content knowledge and learn about interprofessional roles; 3) improve their facilitation skills; and 4) learn how to hold back from sharing their own expertise, thereby allowing students to find their own answers. Thus, our findings add further support to past research and our own contention that facilitation skills, and not content expertise, are most important to being an effective and competent PBL tutor [15,24–31,36].

## 4. Consider how best to recruit and retain tutors

Being able to recruit and retain tutors is critical to the success of iPBL. First, and foremost, we worked to ensure that tutoring was an enjoyable experience for tutors, and our results indicated that it was. Tutors identified several rewarding aspects of facilitating iPBL, such as enhancing their facilitation and group communication skills, increasing their content knowledge in a given area, increasing their knowledge of interprofessional healthcare teams, observing students learn, and contributing to the development of collaborative care. It has been helpful to share some of the benefits other tutors have experienced when attempting to recruit new tutors.

Despite the personal rewards associated with tutoring, we have struggled with the retention of tutors. Approximately 50% of our tutors are new each year, and although we have always been fortunate enough to recruit the 28 to 30 tutors required to run each iPBL module, tutor recruitment and retention have been two of the greatest challenges we have faced. On the basis of our results, we found this dilemma: more experience made it easier for tutors to facilitate iPBL but also made tutoring somewhat less rewarding. Specifically, responses from new tutors revealed that they experienced significantly greater increases in their own knowledge and skills and received more enjoyment from observing students learn compared to experienced tutors. In contrast, experienced tutors found it significantly easier to facilitate iPBL and encountered fewer challenges. These findings have led us to question whether there is a novelty effect associated with being an iPBL tutor (given that both IPE and PBL are relatively new to our institution) that "wears off" with experience and may contribute to our current rates of turnover.

We also suspect that our ability (or lack thereof) to structurally support iPBL at an institutional level also influenced our ability to retain and recruit tutors. Due to a lack of capacity, our approach to tutor recruitment and retention was program specific, wherein each program involved in a given iPBL module was responsible for recruiting a specific number of tutors that was proportionate to the number of their students that would be participating in the iPBL module. As a result, as many as six or seven programs were independently responsible for recruiting tutors (often through word of mouth), and we did not have a systematic approach for keeping in contact with past tutors, reaching new tutors, thanking tutors, sharing evaluation reports with tutors, and keeping them up-to-date on student issues. Ultimately, we required a central hub to maintain consistent communication with tutors but lacked the institutional support to do so.

Related to the lack of structural support for offering iPBL, most of our tutors were faculty members, graduate students, or clinicians recruited from the community who volunteered their time. While tutors did receive a small honorarium for their efforts, being an iPBL tutor was generally not an official or recognized component of their jobs. Thus, once tutors stopped reaping as many rewards from tutoring, they may have decided to focus their energies on the aspects of their jobs that are officially and formally recognized. Alternatively, because all iPBL tutors at our institution currently volunteer for the role, it may be that individuals are not able to consistently clear their work schedules in order to be "free" for the dates and times

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

**www.jripe.org**

of our various iPBL modules, since there is no formal expectation that they participate. Advocating for iPBL tutoring to be recognized in faculty review and tenure processes at an institutional level may be one way to retain more tutors and recruit new ones. A change such as this at the institutional level would suggest that iPBL is both valuable and valued. Wilhemmson et al. [47] concur that institutional support is essential for sustaining an IPE curriculum that includes approaches such as iPBL.

We have spent much time discussing the recruitment and retention of our tutors, largely because these are issues that have not been discussed in the literature, yet they pose the greatest challenges for the sustainability of iPBL. We urge future researchers to further explore this issue to accrue knowledge about common challenges with tutor recruitment and retention, reasons underlying those challenges, the extent to which they influence retention and recruitment, and suggestions for overcoming them.

### Limitations and future directions

As with any study, our study has a few limitations we would like to mention. First, we collected limited demographics. For instance, we lack information about the specific number of modules tutors had facilitated, their gender, their substantive professional positions, and their reasons for becoming a tutor (i.e., was tutoring an expected component of their jobs or an opportunity they specifically sought?). This information would be helpful for gaining further insight into the issues pertaining to the retention and recruitment of tutors mentioned above and increasing the transferability of our findings to other populations. Second, the participation rates in our focus groups were rather low. This limitation may, in part, be explained by the fact that many of the tutors facilitated more than one iPBL module, and once they had participated in one focus group, they generally did not participate in a second due to the similar content addressed in each one. Even so, it is possible that tutors who chose to attend focus groups differed in some way from those who did not, potentially as a result of having highly positive or negative experiences.

Third, and perhaps most notably, because of the exploratory nature of our study, we did not have a comparison group of tutors who had facilitated only uni-professional PBL modules or interprofessional small groups with whom we could compare the experiences of the iPBL tutors. It is possible that the tutors' perceptions of satisfaction with the amount they learned, their increased skill, and their contribution to the students' learning that they attributed to being an *interprofessional* PBL tutor may not be different than the satisfaction experienced as a result of facilitating comparable uni-professional PBL modules or even interprofessional small groups that do not use the classical PBL approach. At the University of Saskatchewan, where PBL has been largely *interprofessional* PBL and IPE has mostly been PBL, it is difficult to tease out the value tutors placed on iPBL from either PBL or IPE separately. In future, we encourage researchers to include a comparison group to better understand the experiences of being an iPBL tutor versus a uni-professional PBL tutor or a non-PBL IPE tutor. It also would be valuable to directly link tutors' perceptions of their effectiveness as iPBL tutors and their strengths as a tutor

(e.g., facilitation skills, content knowledge, and group communication skills) to students' learning outcomes to determine what tutor skills and characteristics are associated with the greatest amount of learning among students.

## Conclusions

In summary, with this study we were able to offer valuable insight into tutors' experiences of facilitating iPBL modules. Tutors reported great satisfaction with iPBL and rarely encountered challenges that detracted from their experience. They valued iPBL both as an opportunity for personal growth and as a way of contributing to IPE and the development of collaborative patient care. Being able to increase their own knowledge in the content area of the module and other professional roles, enhance their skills as facilitators, and directly observe students from different health disciplines learn with, and from, each other over the course of each module were noted aspects of the process they deemed to be particularly rewarding. Consequently, it appears that iPBL is a unique learning opportunity, not only for students, but also for tutors. Our approach to tutor development and support is generating high satisfaction levels. We intend to continue with our current system, and we encourage other education programs to consider a similar approach for preparing tutors to facilitate iPBL.

## Acknowledgements

## Abbreviations

iPBL: Interprofessional problem-based learning
IPE: Interprofessional education
PBL: Problem-based learning
U of S: University of Saskatchewan

## References

1. Barrows, H.S. (2000). *Problem-based learning applied to medical education,* 2nd edition. Springfield, IL: Southern Illinois University School of Medicine.
2. D'Eon, M., Proctor, P., Cassidy, J., McKee, N. & Trinder, K. (2010a). Evaluating an interprofessional problem-based learning module on the care of persons living with HIV/AIDS. *Journal of Research in Interprofessional Practice and Education, 1*(2) 109–126.
3. Solomon, P., Salvatori, P. & Guenter, O. (2003). An interprofessional problem-based learning course on rehabilitation issues in HIV. *Medical Teacher, 25*(4), 408–413.
4. D'Amour, D., & Oandason, I. (2005). Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept. *Journal of Interprofessional Care, Supplement*, *19*(s1), 8–20.
5. Oandasan, I., & Reeves, S. (2005). Key elements for interprofessional education. Part 1: The learner, the educator and the learning context. *JIPC, Supplement*, *19*(s1), 21–38.
6. Romanow, R. (2002). *Building on Values: The Future of Health Care in Canada.* Saskatoon, SK: Commission on the Future of Health Care in Canada.
7. Freeth, D., Hammick, M., Koppel, I., Reeves, S., & Barr, H. (2002). *A critical review of evaluations of interprofessional education*. London: Learning and Support Network, Centre for Health Sciences and Practice.

8.  D'Eon, M. (2004). A blueprint for interprofessional learning. *Medical Teacher*, *26*(7), 604–609.
9.  Hughes, L., & Lucas, J. (1997). An evaluation of problem based learning in the multiprofessional education curriculum for the health professions. *Journal of Interprofessional Care*, *11*(1), 77–88.
10. Solomon, P., Binkley, J. & Stratford, P. (1996). A descriptive study of learning processes and outcomes in two problem-based learning curriculum designs. *Journal of Physical Therapy Education*, *10*, 72–76.
11. Reynolds, F. (2003). Initial experiences of interprofessional problem-based learning: A comparison of male and female students' views. *Journal of Interprofessional Care*, *17*(1), 35–44.
12. Goelen, G., De Clercq, G., Huyens, L., & Kerckofs, E. (2006). Measuring the effect of interprofessional problem-based learning on the attitudes of undergraduate health care students. *Medical Education, 40*(6), 555–561.
13. Lindqvist, M., & Reeves, S. (2007). Facilitators' perceptions of delivering interprofessional education: A qualitative study. *Medical Teacher*, *29*(4), 403–405.
14. Newton, C., & Wood, V. (2009). Reflections on facilitating an interprofessional problem-based learning module. *Journal of Interprofessional Care*, *23*(6), 672–675.
15. Haith-Cooper, M. (2003). An exploration of tutors' experiences of facilitating problem-based learning. Part 2- implications for the facilitation of problem based learning. *Nurse Education Today*, *23*(1), 65–75.
16. McLean, M. (2003). What can we learn from facilitators and student perceptions of facilitation skills and roles in the first year of a problem-based learning curriculum. *BMC Medical Education*, *3*(9), n.p.
17. Quinlan, K. M. (2003). Effects of problem-based learning curricula on faculty learning: New lenses, new questions. *Advances in Health Sciences Education*, *8*(3), 249–259.
18. Hoffman, K., Hosokawa, M., & Blake, R. (2006). Problem-based learning outcomes: Ten years of experience at the University of Missouri-Columbia School of Medicine. *Academic Medicine*, *81*(7), 617–625.
19. Koh G. C.H., Khoo, H.E., Wong, M.L., & Hoh, D. (2008). The effects of problem-based learning during medical school on physician competency: A systematic review. *Canadian Medical Association Journal*, *178*(1), 34–41.
20. Schafer, T., Huenges, B., Burger, A., & Rusche, H. A randomized control study on the progress in knowledge in a traditional versus problem-based curriculum. *Proceedings of the 2006 Annual Meeting of the Association for Medical Education in Europe*, Otone Congressi, Genoa. Italy, 14–18 September; 2006; Abstract 10H2, p. 208.
21. Schmidt, H.G., Vermeulen, L., & van der Molen, H.T. (2006). Long-term effects of problem-based learning on the attitudes of health care students. *Medical Education*, *40*(6), 562–567.
22. Freeth, D. (2010). *Interprofessional education in understanding medical education: Evidence, theory and practice*, Tim Swanwick (Ed.), pp 53–68. London: Wiley-Blackwell.
23. Freeth, D., Hammick, M., Barr, H., & Reeves, S. (2005). *Effective interprofessional education: Development, delivery and evaluation*, pp. 14–21, 25. Blackwell, Oxford.
24. Bochner, D., Badovinac, R.L., Howell, T.H., & Karimbux, N.Y. (2002). Tutoring in a problem-based curriculum: expert versus non-expert. *Journal of Dental Education, 66*(11), 1246–1251.
25. de Grave, W.S., Dolmans, D.H.J.M., & van der Vleuten, C. P.M. (1999). Profiles of effective tutors in problem-based learning: Scaffolding student learning. *Medical Education*, *33*(12), 901–906.
26. Dolmans, D., Gijselaers, W., Moust, J., de Grave W., Wolfhagen, I., & van der Vleuten, C. (2002). Trends in research on the tutor in problem-based learning: Conclusions and implications for educational practice and research. *Medical Teacher, 24*(2): 173–180.
27. Groves, M., Règo, P., & O'Rourke, P. (2005). Tutoring in problem-based learning medical curricula: The influence of tutor background and style on effectiveness. *BMC Medical Education, 5* (20), n.p.
28. Hay, P.J., & Katsikitis, M. (2001). The 'expert' in problem-based and case-based learning: Necessary or not? *Medical Education, 35*(1), 22–26.
29. Kaufman, D.M., & Holmes, D.B. (1998). The relationship of tutors' content expertise to interventions and perceptions in a PBL medical curriculum. *Medical Education, 32*(3), 255-261.
30. Matthes, J., Marxen, B., Linke, R.M., Antepohl, W., Coburger, S., et al. (2002). The influence of tutor qualification on the process and outcome of learning in a problem-based course of basic medical pharmacology. *Naunyn-Schmiedeberg Archives of Pharmacology*, *366*(1), 58–63.
31. Gingerich, A., Mader, H., & Payne, G.W. (2012). Problem-based learning tutors within medical curricula: An interprofessional analysis. *Journal of Interprofessional Care*, *26*(1), 69–70.
32. Albanese, M. (2010). Problem-based learning. In *Understanding medical education: Evidence, theory and practice*, Tim Swanwick (Ed.), pp. 37–52. London: Wiley-Blackwell.

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

www.jripe.org

33. Albanese, M. (2004). Treading tactfully on tutor turf: Does PBL content expertise make a difference? *Medical Education*, *38*(9), 916–920.

34. D'Eon, M., Proctor, P., Bassendowski, S., & Udahl, B. (2010b). Effective programmatic tutor training for interprofessional problem-based learning. *Journal of Faculty Development*, *24*(1), 5–10.

34. McKee, N., Goodridge, D., Remillard, F., & D'Eon, M. (2010). Interprofessional palliative care problem-based learning: Evaluation of a pilot module as a teaching and learning method. *Journal of Interprofessional Care*, *24*(2), 194–197.

35. Cleverly, D. (2003). Inquiry-based learning: Facilitators' perceptions of their effectiveness in the tutorial process. *International Journal of Nursing Studies*, *40*(8), 829–841.

36. Steinert, Y., Mann, K., Centeno, A., Dolmans, D., Spencer, J., & Gulula, M. (2006). A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. *Medical Teacher*, *28*(6), 497–526.

37. Dillman, D.A., Smyth, J.D., & Christian, L.M. (2000). *Internet, mail, and mixed-mode surveys: The tailored design method.* Hobken, NJ: John Wiley and Sons.

38. DeVellis, R.F. (2003). *Scale development, theory and applications,* 2nd edition. Thousand Oaks, CA: Sage.

39. Boyatzis, R.E. (1998). *Transforming qualitative research: Thematic analysis and code development.* Thousand Oaks, CA: Sage.

40. Narvaez, R.F., Meyer, I.H., & Kertzner, R.M. (2009). A qualitative approach to the intersection of sexual, ethnic, and gender identities. *Identity: An International Journal of Theory and Research*, *9*(1), 63–86.

41. Strauss, A. (1999). *Qualitative analysis for social scientists.* Cambridge, England: Cambridge University Press.

42. Creswell, J.W. (2007). *Qualitative inquiry and research design: Choosing among five approaches.* Thousand Oaks, CA: Sage.

43. Morrow, S.L. (2005). Quality and trustworthiness in qualitative research in counselling psychology. *Journal of Counseling Psychology, 52*(2), 250–260.

44. Tobin, G.A., & Begley, C.M. (2004). Methodological rigour within a qualitative framework. *Journal of Advanced Nursing, 48*(4), 388–396.

45. Maudsley, G. (2002). Making sense of trying not to teach: an interview study of tutors' ideas of problem-based learning. *Academic Medicine*, *77*(2), 162–172.

46. Wilhelmsson, M., Pelling, S., Ludvigsson, J., Hammar, M., Dahlgren, L.O., & Faresjo, T. (2009). Twenty years experiences of interprofessional education in Linkoping: Ground-breaking and sustainable. *Journal of Interprofessional Care*, *23*(2), 121–133.

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

**www.jripe.org**

## Appendix: Research Instrument

### Tutor Evaluation of an Inter-Professional Problem-Based Learning Group (HIV/AIDS Case 2010)

Please provide us with some information about your experience as a tutor for this PBL module. Your answers are anonymous and strictly confidential, as outlined in the consent form. We will use this data for program evaluation to improve the facilitation of IPE PBL modules and for research (if you give permission to use the data for this purpose) to generate scholarly publications and make conference presentations. If you DO NOT want the data used for research purposes check the box below.

I DO NOT want the researchers to use this anonymous data for their research. ☐

I am a: **new tutor** (1st or 2nd experience) _____     **experienced tutor** (≥3x) _____

**How many times have you facilitated the HIV/AIDS PBL module?** _____

**My professional background is**:_____

Choose a number from the scale shown below for each question to indicate your degree of **agreement** with the following statements and write this number directly on this sheet. Choose number 9 for "not applicable".

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 9 |
|---|---|---|---|---|---|---|---|
| Strongly Disagree | | | Don't Know | | | Strongly Agree | Not Applicable |

1. ____ During the PBL module, I increased my own knowledge about HIV/AIDS.
2. ____ During the PBL module, I increased my own knowledge about other health science professions.
3. ____ I value the knowledge that I gained while facilitating this PBL module.
4. ____ I found it easy to facilitate this PBL module.
5. ____ I felt effective as a PBL tutor.
6. ____ I found it easy to engage the students in discussion.
7. ____ I increased my skill as a PBL tutor/teacher by facilitating this module.
8. ____ I believe that this interprofessional PBL module simulates a real-life situation.

9. ___ This interprofessional PBL module was a valuable learning experience for the students.

10. ___ I believe that students learn more from interprofessional PBL than they would from uni-professional PBL.

11. ___ I would prefer to facilitate interprofessional PBL modules than uni-professional PBL modules.

12. ___ I believe that I gained a greater sense of satisfaction facilitating interprofessional PBL than I would facilitating uni-professional PBL modules.

Choose a number from the scale shown below for each question to indicate the extent to which you found the following items rewarding and write this number directly on this sheet. Choose number 9 for "not applicable".

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 9 |
|---|---|---|---|---|---|---|---|
| Strongly Disagree | | | Don't Know | | | Strongly Agree | Not Applicable |

To what extent did you find the following to be a rewarding part of facilitating the PBL module?

13. ___ Students directing the learning process

14. ___ High quality research done by students

15. ___ Students learning about HIV/AIDS

16. ___ Student engagement in interprofessional learning

17. ___ That the PBL case simulated a real-life situation

18. ___ Observing the students interact as an interprofessional team

19. ___ Observing students learn about the scopes of practice of other health care professionals.

20. ___ My learning about interprofessional health care teams

21. ___ My learning about other health care professions

22. ___ My learning about HIV/AIDS

23. ___ Increased skill as a PBL tutor

24. ___ Observing the students learn as an interprofessional team

25. ___ Hearing the perspectives of students from different disciplines

26. ___ My contributing to interprofessional education through this PBL module

27. ___ My contributing to the development of collaborative care through this PBL module

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

www.jripe.org

Choose a number from the scale shown below for each question to indicate the extent to which you found the following items challenging and write this number directly on this sheet. Choose number 9 for "not applicable".

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 9 |
|---|---|---|---|---|---|---|---|
| Strongly Disagree | | | Don't Know | | | Strongly Agree | Not Applicable |

To what extent did you find the following to be a challenging part of facilitating the PBL module?

28. ___ Engaging students in discussion
29. ___ Getting too involved in the group
30. ___ Insufficient time to complete the PBL module
31. ___ Time allotted for the PBL module was longer than necessary
32. ___ Dealing with problematic student interactions
33. ___ Lack of interaction between students
34. ___ Poor or inconsistent student attendance
35. ___ Students' inappropriate use of personal digital assistants (PDAs) and other electronic devices
36. ___ Students expecting me to provide content and/or answers
37. ___ Power struggles or conflicts among professional groups
38. ___ Dominant student(s) in the group
39. ___ Disrespectful behaviour between students
40. ___ Disrespectful behaviour towards me
41. ___ Student group was too large
42. ___ Student group was too small
43. ___ Getting students to discuss their respective professional roles.
44. ___ Dealing with interpersonal dynamics
45. ___ Facilitating the steps and stages of the PBL process in a competent manner
46. ___ Passive student(s) in the group
47. ___ Breaking down professional barriers
48. What other interprofessional teaching have you engaged in within the last 12 months?

_____

_____

_____

49. Please write any additional comments here. Your ideas are important to us.

_____

_____

_____

Thank you!

Journal of Research in
**Interprofessional
Practice and
Education**

Vol. 3.2
August, 2013

**www.jripe.org**