What good facilitators do to promote effective student learning in a problem-based learning environment: implications for design of staff development programmes

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Abstract
This paper is an extension of an earlier study that examined the factors influencing facilitators’ successful adaptation to a problem-based learning (PBL) environment. The current study focuses on the specific strategies employed by effective facilitators in the PBL classroom to promote critical thinking as well as collaborative and self-directed learning among learners. Republic Polytechnic’s Certificate in Facilitation programme is used as a benchmark of quality facilitation in order to assess the effectiveness of facilitator actions and discourse in meeting these student goals. The aims of this qualitative study are twofold: 1. to describe what good facilitators do in the classroom and how they do it, and 2. to consider how staff development initiatives can support faculty in becoming good facilitators. Data from 12 candidates nominated for the Outstanding Facilitator Award over the last four years is collected through video classroom recordings, lesson observation reports and teaching portfolios and then analysed to detect facilitation patterns in the range of strategies and discourse used. Findings reveal three themes influencing the quality of teaching and learning in the PBL classroom: 1. questioning techniques of facilitators; 2. timeliness of facilitator response; and 3. facilitator awareness of unique learning goals and situations. The result of this study suggests the way staff development programmes are designed and conducted needs to be relooked in order to better support the training and learning needs of PBL facilitators in achieving greater alignment between classroom practices and certification expectations. This paper ends with a discussion of some of the initiatives implemented in the last six months to address these gaps in our staff development framework, specifically the introduction of a peer coaching framework and a training roadmap for academic staff at different stages of their professional development.

Keywords: problem-based learning, facilitation, staff development, questioning, critical reflection

1. INTRODUCTION
Republic Polytechnic (RP) is an institution of higher learning for post-secondary learners pursuing diplomas in key and emerging industries such as engineering sciences, leisure management and food technologies. It adopts a problem-based learning (PBL) framework for all its academic modules with staff taking on the role of a facilitator during classroom interactions. Given the pervasiveness of this pedagogical approach across diploma programmes and throughout the three years of diploma study, a Certificate in Facilitation programme was designed in 2004 to meet the needs of the organisation in describing, developing and evaluating the competencies and attitudes required of a good facilitator. With this articulation of facilitation standards came the challenge of designing a staff development programme that would support faculty in achieving the milestones outlined in the certification expectations. To do so, we must firstly understand what good facilitators do in the classroom so that we can map these attributes onto our staff development roadmap.

The attributes of a good facilitator are well-documented by PBL researchers in the area of medical training [1-3] and higher education [4-6]. They cite an effective PBL tutor as one who is able to guide learners in
actively constructing knowledge in collaborative, self-directed and critically reflective ways. These key characteristics and evaluation standards are captured in O’Grady & Ong’s [7] rationalisation of the approach taken in designing the Certificate in Facilitation framework in RP, which incorporates portfolio assessment, a classroom recording and an interview in order for candidates to demonstrate evidence and reflection of good facilitation practices.

However, what really goes on in the PBL classroom is much more complex, with facilitators often struggling to enact these well-defined attributes in a dynamic and often unpredictable classroom. Since its inception in 2004, more than 300 RP facilitators have gone through the certification process, yet the success rate of achieving certification has stood at 50% in the last four years and only recently risen to about 70%. In an earlier study, interviews with ten facilitators who achieved certification on their subsequent attempts revealed that they felt anxious, unclear and unaware of what they had to demonstrate to the certification panel the first time they went for the interview in spite of having read the certification guidelines [8]. Very few cited formal training or workshops as a contributing factor to their achievement. They attributed their later success in achieving certification to personal reflection, peer feedback and guided practice.

This certainly has implications on how staff development units and programmes can better support PBL facilitators. The lack of research in this area is raised by Murray & Savin-Baden [9] and Kolmos [10] and points towards the urgent need to respond – at both individual and organisational levels – to the range of challenges PBL facilitators face [11] in making a successful transition to a student-centred, problem-based model of teaching and learning.

This paper will address these gaps by examining RP’s certification and staff development programmes as a case study – it will describe the profile of a good facilitator through his/ her specific actions and discourse and suggest how staff development initiatives can support faculty in becoming good facilitators.

2. METHODOLOGY

In order to describe the profile of a good facilitator, the video classroom recordings, lesson observation reports and teaching portfolios of 12 candidates for the Outstanding Facilitator Award from 2006-2009 were analysed. These candidates were selected among their peers by the certification panel or their department heads for their exemplary facilitation skills. Patterns in the discourse, dispositions and actions employed by these facilitators were extrapolated from the data to formulate themes.

These themes were then compared with the various staff development initiatives and training evaluation reports collated since 2004 in order to examine where facilitator competencies were adequately or inadequately addressed by the formalised training programmes. Based on the findings, the paper ends with a discussion of what needs to be done for a PBL staff development programme to be effective in supporting staff in becoming successful facilitators.

3. FINDINGS

3.1 Profile of a good facilitator

The video classroom recordings, lesson observation reports and teaching portfolios of 12 facilitators nominated for the Outstanding Facilitator Award from 2006-2009 were examined in order to select and describe exemplars of the following learning attributes facilitators need to develop among their learners: 1. engaging learners in key concepts, issues and themes according to the lesson objectives; 2. helping learners reason effectively and develop deep understanding; 3. helping learners collaborate meaningfully with their peers; 4. helping learners to be self-directed in their learning approach; and 5. helping learners to be reflective about their learning process.
In summary, three key themes emerged from the data analysis that set these facilitators apart from their peers: 1. their questioning techniques when responding to a range of learning issues; 2. the timeliness of their response to unexpected learning obstacles; and 3. their awareness of unique learning goals and situations for individual learners. At the point of certification, the 12 facilitators had on average between two to three years of facilitation experience at RP and attended at least 100 hours of PBL-related staff development programmes from a menu of workshops and research platforms available. There was no discernible difference in their staff development exposure from their non-certified peers, suggesting that attending more training did not translate into higher pass rates during certification. Furthermore, the teaching portfolios and certification letters of these facilitators implied that they were effective because of their awareness of personal strengths and weaknesses and their ability to apply sound judgment in the classroom when interacting with learners.

From a staff development perspective, the questions that follow are whether these three qualities are ‘teachable’ – can we develop facilitators into problem-solvers, to recognise ‘teaching moments’ and to be sensitive to the various learning styles and motivations of their learners? To what extent are these themes a learned behaviour? How did these 12 facilitators arrive at these levels of competency? The next part of this paper will address these questions by examining the staff development programmes and their effectiveness over the last three years in supporting the development of facilitators.

In addition, these facilitators demonstrated sophisticated levels of critical reflection-in-action [12] in their portfolios, such as commenting on how they manage their challenges as a PBL facilitator and how they anticipate and overcome shortfalls in their teaching biases. They also showed high levels of empathy towards the different motivations and abilities of their learners. They were able to adapt to unexpected learning situations such as learners misinterpreting the lesson objectives by being flexible and quick-thinking in their adoption of alternative strategies and questions. They were also very conscious of the effect of what they said on their learners.

From the data examined, the 12 facilitators demonstrated the following exemplary actions in relation to the key competencies expected from the Certificate in Facilitation:

**Learning attributes** | **Exemplars of facilitator actions in the classroom**
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1. Conceptual engagement | - Connect with learners’ starting point and use appropriate scenario settings such as contexts or examples familiar to learners.  
- Scaffold learning by making connections between prior and new knowledge in order to gradually help learners reach the next level of understanding.  
- Use appropriate language, references and analogies to help learners overcome the challenge of difficult terms.
2. Reasoning | - Prompt learners to justify their claims and provide examples when explanations are vague or unconvincing.  
- Encourage learners to critique ideas by considering their value and limitations within the context of the problem scenario.  
- Comment on the quality of arguments presented.
3. Collaboration | - Help learners build on one another’s knowledge by modelling how feedback and constructive criticism is given.  
- Include reticent or quieter learners in group discussions.  
- Create opportunities for shared meaning across groups to take place.
4. Self-directedness | - Identify learning obstacles and suggest strategies to manage them.  
- Sharpen learners’ research and information management skills.  
- Develop professional habits of working in learners such as agenda-setting and action-planning.
5. Self-reflection | - Set clear criteria so that learners can evaluate themselves.  
- Draw attention to blind-spots, misconceptions and weak reasoning so that learners can address them.  
- Give feedback regularly.

**TABLE 1. Exemplars of good facilitation**

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3.2 Training evaluation

The early PBL staff development programmes in RP from 2004-2005 were focused largely on 5-day intensive workshops preparing new staff for classroom facilitation in the rapidly expanding polytechnic using RP’s one-day, one-problem framework. The evaluation reports of those programmes were also generic, with questions focusing on the relevance and quality of materials and vendor effectiveness. The participant feedback from the evaluation forms, which comprised 4-point Likert scale and open-ended questions, suggested that participants felt overwhelmed by information and wanted more practice, feedback and time for discussion and integration.

With the expansion of the staff development unit, more courses were added to the PBL staff development programme. On top of the core 5-day PBL introduction programme, other workshop themes on collaborative learning, classroom discourse and reflective practice were introduced that allowed for more overt sharing of strategies and opinions. The evaluation forms also evolved to allow more specific feedback on the effectiveness of activity design and quality of the trainer to be captured. From these evaluation reports, participants shared that they valued good role-modelling, sharing of strategies and peer feedback in helping them make a shift to a PBL environment.

From the analysis of the evaluation reports since 2004, we can infer the following key factors contributing to a successful PBL programme:

1. The level of individual attention given to participants in terms of opportunity for sharing, receiving feedback and practising or applying a skill;
2. The relevance of strategies and ideas in managing the range of learning issues brought into the discussion space; and
3. Good role-modelling of facilitation skills during trainers’ social and intellectual interaction with participants.

These factors were then taken into consideration when re-designing PBL training activities for staff. Class sizes for a number of workshops were reduced to allow more time to address specific issues and needs; activities included more role-play, scenario discussion and strategy formulation so that solutions came from the participants themselves; and reflective practice was incorporated through analysis of live or recorded discourse and reflective writing. While the feedback for such programmes was more positive compared to theory or information-heavy training workshops of large class sizes, there were also limitations in terms of the training load and capacity of the staff development team to support a growing staff population of almost 1000.

The current phase of the staff development programme recognises the challenges on both fronts – the need for customisation and the need to build capacity. In response to this, a peer coaching framework was developed late last year to tap on the strengths of a pool of over 120 certified facilitators who have been identified as potential peer coaches and help staff in their respective departments become more reflective and effective facilitators. The last part of this paper provides more detail on some of the initiatives implemented in the last six months to address these issues.

4. IMPLICATIONS FOR STAFF DEVELOPMENT INITIATIVES

The findings of what good facilitators do and data from the training feedback strongly indicate that a mechanistic training model of staff development is limited in its effectiveness when it comes to preparing facilitators for the Certificate in Facilitation. It has its practical usefulness when initiating novice facilitators into the unique one-day, one-problem PBL model so that they are broadly familiar with the day’s structure and outcomes; however an instructional and condensed training approach does not have a sustainable effect in developing novice facilitators into competent ones. Time, critical reflection and practice accompanied by feedback are critical in helping facilitators become comfortable and congruent with the educational philosophy of PBL.
The insights provided by researchers in the area of staff development and PBL reveal a need for reflection, modelling and metacognition to be built into lesson activities for facilitators. Little [13] writes of the need for “meta-level discussions” to take place so that knowledge, skills and experiences are overtly raised, transferred and applied; Kolmos reminds us of the systemic importance of facilitating change in an organisation in order to build a “culture based on reflection on action” [10]; and Savin-Baden urges us to take an educational development rather than a “how-to” staff training approach [4] that allows for educators to immerse themselves in the culture of problem-based learning. In other words, dialogue and reflective space are critical to a successful PBL staff support programme.

These were considerations that were taken into account when RP launched an academic learning roadmap for its staff in April 2009, with one strand for novice staff, a second for experienced staff preparing for certification, and a third for peer coaches. The novice programme comprises 104 training hours to be completed over an 18-month period, which includes formal workshops focusing on a range of facilitation competencies such as listening and questioning skills, assessing holistically, managing collaborative classrooms and understanding youth behaviour as well as a mentoring programme to support new staff in their transition to a PBL environment. The programme for staff with at least 18 months of facilitation experience and who have completed the 104 novice training hours targets those preparing for the Certificate in Facilitation and incorporates more reflective practice and sharing of strategies in the design of the programmes in this category. Together with the leadership strand to enhance existing certified facilitators’ capabilities as peer coaches, the learning roadmap aims to immerse new facilitators in a culture of problem-solving, collaborative discussions and reflective practice to develop learning mindsets and move them away from a skill-based training model.

Some existing activities in the staff development programmes that have shown positive impact on raising facilitators’ awareness of their complex learning journey continue to form an integral part of the overall learning plan – these include encouraging all staff to explore their “ontological positions as tutors and learners” [14] through the Teaching Perspectives Inventory [15]; organising an annual in-house “PBL Learning Retreat” for staff to reflect, re-energise and re-connect with the institution’s educational vision; providing lunchtime consultation sessions for staff to discuss classroom challenges; and incorporating problem scenarios and problem-based sessions into the workshop design to form a framework for engaging in authentic learning, assessment and curriculum issues.

Feedback from participants in the last six months has been encouraging, with many citing the following features as contributing to their positive learning experience: smaller class sizes of 15-20 that promote more personalised conversations; micro-teaching opportunities that allow for situational practice and feedback; discourse and problem analysis activities that support reflection-on-action; and resourceful and creative ideas on engaging and motivating learners. A parallel system to support staff developers in designing appropriate programmes for the learning roadmap has also been in place since 2008. This consists of a review process that checks how closely matched the activities created are with adult learning and learner-centred principles; it also provides opportunities for trainers from different staff development strands to give one another feedback and refine activities and questions for better alignment and synergy.

Negative impressions of the Certificate in Facilitation are also addressed through these staff interactions so that staff members perceive the programme more as a developmental rather than evaluative process. In an earlier study on facilitator’s attitudes towards certification [8], it was found that what helped facilitators to be successful in their subsequent attempts at certification was a positive attitude towards learning, peer support and reflective space and time. These factors need to be built into the staff development programmes and institutional culture to ensure consistency and congruence in our approach to learning and professional development. For example, one recent initiative in the certification process has been to invite candidates who are considered “more ready” – this includes encouraging them to attend a series of workshops focusing on helping them articulate the rationale for specific facilitation processes and actions; submitting an analysis of their own classroom recording; and observing a certified colleague’s class and/or being observed prior to their portfolio preparation. Such ‘facilitator preparedness’ has accounted for a significant rate of increase in pass rates from 50% to almost 70% in the last year.
4. CONCLUSION

Understanding what good facilitators do and what makes them successful helps us to understand how to design a more effective PBL staff development programme that supports staff socially, conceptually and emotionally. We recognise that for some, the transition from an apprentice or transmission model of teaching to a student-focused one is not always easy, hence skills-training alone is inadequate in changing paradigms or entrenched beliefs about teaching and learning; for those who have found that alignment, we want to make that tacit transformation more overt so that others can learn from their experiences. Regardless of the ease or difficulty of these journeys, they should be treated as personalised and progressive experiences, hence support from heads of department, senior management and their peers in the form of feedback, encouragement, teaching awards and reflective time plays a critical role in shaping confidence about how they think about and apply PBL principles.

The next phase of this study will examine the pilot group of facilitators who have started on the learning roadmap since April 2009 to analyse the effectiveness of the new initiatives taken to support them in their journey towards the Certificate in Facilitation. Together with the feedback acquired from the evaluation forms, this valuable information will continue to educate us about facilitating change to a PBL model and developing a culture of reflective practice, open sharing and transformational learning.

References