

From Teaching to Facilitation; Experiences with Faculty Development Training

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Abstract

A shift from teaching to learning is characteristic of the introduction of Problem Based Learning (PBL) in an existing school. As a consequence the teaching staff has to be trained in skills like facilitating group work and writing cases. Most importantly a change in thinking about teaching and learning will have to be realized. In the implementation of PBL it makes a difference how the core features of the problem and the role of the facilitator have been defined. This paper will present components of a PBL faculty-development training programme and discuss the relevance with respect to the learning objectives for the teachers.

Keywords: *Faculty development, PBL workshop, Change to PBL*

1. Introduction

Problem Based Learning (PBL) is often said to involve a change of paradigm, or more specifically a shift from teaching to learning (De Graaff and Kolmos 2007). As a consequence, faculty development programmes aiming to train teachers in new skills are an integral part of the implementation of PBL. Teachers need to learn skills, like how to design a learning environment, how to write a case and how to facilitate a group process, but more importantly they need to re-define their professional identity in what is called a process of culture change. In this paper the outline for PBL faculty development training will be analysed based on extensive experience in running such programmes.

2. Different PBL Models

By the end of the sixties of the last century PBL emerged as the principal educational method at the new medical curriculum of McMasters University in Canada. PBL aims to involve students actively in the learning process, challenging them to work on problems from practice. Inspiration for the development of PBL principles came from pedagogues and psychologists like Jérôme Brunner, Maria Montessori, John Dewey, William Kilpatrick (Heitmann, 1996). In second half of the twentieth century the movement was carried on by American educators like Carl Rogers (1961), David Kolb (1984) David Boud (1986) and Donald Schön (1988). Theoretically their work fits nicely in the constructivist understanding of cognition from Piaget and Vygotski. The work of David Kolb on experiential learning is also often mentioned in this context. In practice PBL takes many shapes, resulting in a plethora of PBL models, ranging from PBL lectures, where the teacher builds his presentation around a case from practice to self-organized group work outside formal education. Several authors made attempts to classify different types of PBL (Barrows, 1986, Savin Baden, 2000, Prince and Felder, 2006; De Graaff & Kolmos, 2007).

The most important differentiation is the one between problem-based and project-organised learning. Both approaches originate for a large part from the same pedagogical background. Except, maybe, concerning the Marxist political orientation that influenced the development of Project Organised Learning in Europe, in particular in Germany and Denmark (Illeris, 2007). The section below focuses on the main differences between the 'project' PBL and the 'problem' version.

A project provides students with a challenging task that usually requires more than one single person to complete (Algreen-Ussing, 1990). Working out a solution among themselves in a small group is highly motivating for the students, as recognized by Kilpatrick In working on the project the students apply knowledge they acquired before and they learn new knowledge when they need it (Kilpatrick et al, 1921). The objective of a project is to solve a specific problem. As a consequence, it is by definition limited in time: the project ends when the problem is solved. Going from one project to the next the students gain experience in collaborating in a team in solving authentic problems from professional practice (Heitmann, 1996). Working on problems from practice has been a part of many university curricula for many years. For instance, Barry Maitland, the dean who introduced PBL in architecture at Newcastle University in Australia observes that 'Architecture courses around the world almost universally retained one problem based learning feature derived from the origins of architecture education in tutelage and apprenticeship to a practitioner' (Boud and Felitti, 1991). Interestingly this same architecture studio learning stood model for the development of the concept of the 'reflective practitioner' by Donald Schön (1988).

An alternative to having a group actually solving a problem is to trigger a learning process through using the problem as input for a group discussion. In such a case the 'problem' could be a description of a natural phenomenon, challenging the group to

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come up with a satisfactory explanation or a situation from professional practice as starting point for the discussion on the ensuing learning process. The choice of the type of problem depends very much on the profession the curriculum is training for. Working in a project is a natural preparation for a professional career in engineering. For other professions the link to a project is less obvious. In medicine, law or business administration it makes more sense to start with a case, or some observations in the context of practice. The way to present such cases to the students is in the form of a written description, sometimes supplemented with graphics. Unlike with a project assignment relevance is the most important criterion for the quality of a case rather than authenticity. A good case description reflects professional practice at a day-to-day level, i.e. a problem should not be a very rare combination of symptoms, or a situation so complex that even the most experienced practitioner will have difficulty overseeing everything (see Norman, 1988, for a comprehensive analyses of the concepts problem based learning and problem-solving).

The next aspect that differentiates between different versions of PBL is the location of the learning. PBL group work requires rooms to accommodate small groups rather than large classes or lecture halls. Work on an authentic technical project is done preferably in a workplace. Creating the right space for learning often is a big logistic challenge in setting up a PBL curriculum.

Alternative teacher roles are connected to different types of PBL. In the Maastricht PBL model the role of the tutor is defined strictly as a process facilitator. The tutor is a teacher that does not teach and consequently does not have to be a content expert. Students can consult content experts on request. In order to help students in running their own group process the groups are facilitated by a process facilitator (named 'tutor' in Maastricht) who helps them to work according to the principles of the 7-step procedure of problem solving (Schmidt and Moust, 2000). By contrast the project facilitator in the Aalborg model has to be a content expert, guiding students to make the right choices. In some schools this is taken one step further with the teacher assuming the role of project leader. However, when the teacher takes on much of the responsibilities of running the project, the motivation of the students is bound to decrease.

Also the task of the teacher with respect to assessment of learning outcomes varies across different types of PBL. Evidently, the Maastricht non-content expert facilitator cannot judge student-performance in anything but process skills. In order to resolve the problem that students tend to focus their attention on content they expect to be crucial in the examinations – thus limiting their freedom in self-directed learning - Maastricht did develop a progress test, an assessment method that is independent of the study programme (Verwijnen et al, 1982). In most other curricula teachers retain the responsibility to evaluate the learning outcomes of their own courses. For projects this tends to take the form of a project exam. In Denmark for some years the project exam has been banned by a government, which ruled that all exams at University must be based on an individual performance (after recent elections this ban has been lifted). Even so the project exam remains a complicated assessment instrument with serious issues regarding the measurement reliability.

3. Faculty Development Programmes and an outline for PBL training

Traditionally there is no need for a pedagogic qualification in order to teach in higher education. For a long time professional expertise and research performance were deemed sufficient to qualify as a professor. In the second half of the last century many universities in the North West of Europa, recognising the need for pedagogic training, established staff development centres. Usually, these centres offered pedagogic training on a voluntary basis, limiting the impact (De Graaff and Sjoer, 2006). Since the beginning of the present century the attention for the role of staff development in ensuring the quality of teaching and learning increased markedly (De Rijdt, 2011). For instance, in the Netherlands all universities agreed to enhance training programmes for newly appointed teachers and to recognize results from each other's staff development programme (De Graaff et al, 2006).

Staff development is an essential aspect of educational innovation, in particular when a new pedagogic method is introduced, like PBL. Self-directed collaboration in small groups is a core characteristic of PBL. Students are expected to run their own group-meetings and to plan their own study activities. Implementing PBL entails a process of organisational change. The allocation of responsibility for tasks like educational design and assessment of learning outcomes must be re-considered and the teaching staff should acquire new competencies. For the people involved, adjusting to the process of educational innovation implies a process of cultural change. For instance, the members of teaching staff need to learn share responsibilities across traditional discipline boundaries and to collaborate in interdisciplinary educational design teams, very much like the student study groups.

Over the past 25 years the author has been conducting hundreds of workshops on PBL facilitation skills in many schools around the world. Often these workshops were part of an educational change strategy, ranging from an orientation stage to concrete preparations for actual implementation. The objective of such a workshop from the perspective of the persons driving the change process is consistent with a rational strategy as well as with a re-educative strategy (Chin and Benne, 1985). In the first place, a workshop is expected to inform staff members about the advantages of the PBL model. Therefore, general presentations on PBL principles and examples of best practices are often included in the training programme. Next, in order to understand what the introduction of PBL involves for the role of the teachers, there should be workshop elements allowing participants to practice PBL skills, like facilitation and case construction. The facilitator needs to practice techniques allowing them to make interventions without disturbing the on-going process of self-directed learning, like: summarizing, mirroring behaviour; asking open-ended questions and get feedback on his/her own performance. In some cases the workshop specifically aims to contribute to a change in attitude towards teaching and learning. An example of an exercise that aims for such objectives is the dance of educational innovation (De Graaff and Mierson, 2005).

Learning objectives and the most common elements of the training programme are represented in the overview in table 1. Please bear in mind that the time table only gives only a rough estimate of the time needed. The programme can easily be tailored to suit particular local needs, like repeating some of the practice elements in order to give more people the opportunity to participate.

Table 1. Components of PBL faculty development training

Intended Learning Outcomes for PBL training programme: After following the course the participant will be able to:

- recognize the active components of PBL
- apply the basic principles of PBL tutoring (facilitation the learning process)
- be able to reflect on his/her own tutorial skills
- understand the implications of implementing PBL
- motivate when to apply which PBL variety

Components of a 2-4 days faculty development programme:		
Topic	Comments	Time
Plenary presentations		
PBL Models and pedagogic principles	Basic background information	60 min
Best practices PBL	Inspirational examples	60 min
Facilitation versus teaching	Teacher tasks in a PBL curriculum	45 min
Designing an environment for active learning	Course development	45 min
Management of change	How to organise the change process	60 min
Assessment and evaluation	A key to successful implementation	60 min
Exercises		
Introduction participants	Breaking the ice	30 min
Learning and teaching experiences	Your own experience is your inner criterion	60 min
Designing an environment for active learning	Course development	120 min
Project work	Experiencing working in a project	180 min
Facilitation skills	Non-directive teaching	180 min
Project presentations and feedback	Assessing and being assessed	120 min
Strengths and weakness of PBL	Exchange of opinions and experience	90 min
Comments and Questions	Wrapping up	60 min

4. Evaluation

At the end of each training programme there is some time set aside for reflection on the programme with comments and question. In some cases there is also a more formal evaluation organised by the host institute. Usually these evaluations are mostly positive, although there are always some participants with comments. The point is such evaluations presume a quantitative analysis, calculating an average of ratings. However, how you experience a workshop depends at least partly on yourself. Therefore, it makes no sense to add up the ratings of 20 people who enjoyed the workshop with the score of one person who had a bad day.

For a thorough evaluation you would like to assess different aspects within the personal context of the persons involved. As such an evaluation would take up too much time we will have to look for alternatives. I have often used the following exercise, labelled 'one-word impressions' in order to sum up the comments is asking all participants to reflect on the course: *'Please take a few moments to look back at the past day(s). Try and find one word to sum up your experience. You do not need to elaborate or explain this one word'*. Below a selection of words collected during the past years is presented:

'fantastic'; 'inspirational'; 'new ideas'; 'challenging'; 'insight'; 'so easy'; 'unexpected', 'surprising'; 'possibilities'; 'potential'; 'flabbergasted'; 'shocked'; 'disoriented'; 'difficult to do'; 'disappointed'; 'positive'; 'experience'; 'facilitation'; 'stepping back'; 'observation'; 'safety'; 'mirror'; 'problems'

The list is not exhaustive, but it gives a good impression of the kind of one-word statements that are made (a few actually need more than one word). Of course people like to explain their word choice afterwards. What stands out in these explanations is that people really only start to get a grasp of the concept of facilitation after being confronted with direct feedback in a groups exercise. For most teachers at the start it is inconceivable to do anything but to take the lead in the process. Even in role-play exercises where they do not have the necessary expertise, many teachers naturally assume a position of authority. The surprise comes when they get feedback from colleagues who tell them how they experience such a facilitator intervention.

Surprisingly, some people alter the connotation of their one-word evaluation with their explanation. For instance, someone explicated that the apparently negative word *'disappointed'* came to his mind because it was all so simple now that he saw how it came together. In general I would say that the workshops have been successful for as far as it has been possible to generate this general feeling of understanding and in particular the sense of a growing ability to make it work in practice.

5. Conclusion and discussion

Faculty development constitutes an integral part of educational innovation. At the very minimum workshops will serve to explain teaching staff what the innovation is about in terms of teaching behaviour. A more ambitious objective is to initiate a

process of cultural change. It is difficult to answer conclusively the question to what extent such courses contribute to a change in educational culture. Of course the effectiveness will differ from one situation to the next. The overview generated by the 'one-word impressions' is highly subjective and by no means representative of all participants in a statistical sense. Still it generates a sense of the main trends in experiences at the end of the workshop. In particular because participants respond to other contributions and with the explanations afterwards added to complete the picture the impressionist understanding of the summing up is quite strong.

The key areas' in the faculty development training-programme appear to be the exercises that allow participants to practice PBL skills. The learning experiences quoted above show that course participants are more impressed by direct feedback on their own actions than by theoretical explanations of PBL concepts. Problem Based Learning requires a different type of interaction between teachers and students. Different in what way, depends on the type of PBL. In particular the role of a facilitator is difficult to learn for a teacher with extensive experience in a traditional curriculum. The facilitator is supposed to aim interventions primarily at the on-going process of self-directed learning. In project organised learning the facilitator needs to be a content expert, yet still the interventions should not obstruct the self-directed process. Acquiring the skills of a facilitator involves a re-definition of the role of a teacher. The evaluations of a large series of training programmes confirm that the most important learning experiences reflect a rising awareness of the effects of your interventions as a facilitator. The fact that in role-play exercises colleagues provide the feedback makes it even more effective. While essential for the implementation of PBL I would maintain that learning what it takes to become an effective facilitator adds value to any teacher in any type of curriculum.

Whether a strategy to implement PBL will be successful depends on many different factors. Yet, it is beyond a doubt that courses to train faculty in PBL skills are an essential part of the implementation of PBL and the most crucial effect of such a course is to raise the awareness of the teachers enabling them to change their perception of their own role in relation to the student's learning process.

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