# A Project Management Approach to Sustainable PBL Curriculum Design Implementation at Bahrain Polytechnic

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## ABSTRACT

This paper focuses on the implementation process of PBL at Bahrain Polytechnic, and in particular on the elements that need to be in place to facilitate the implementation of PBL in a sustainable manner. This paper will report on the adoption of a project management approach to sustainable PBL implementation at Bahrain Polytechnic. The methodology has a qualitative focus and combines document analysis with semi-structured interviews and focus groups with the key stakeholders (i.e. teaching staff, management staff, and students). An analysis of the qualitative data, with a key focus on whether a project management approach to PBL implementation is successful, is presented.

Bahrain Polytechnic was established in 2008, so it is still in an establishment phase. This has advantages, in the sense that many elements of the curriculum are still in development and can be designed according to PBL principles. At the same time however, teaching staff have eclectic backgrounds with various degrees of expertise, and when it comes to PBL, generally with very little experience. This has created significant challenges, as teachers tend to hold on much tighter to what they know (i.e. more traditional approaches to teaching). For PBL implementation, this has meant a much slower pace than was planned. In response the implementation team decided to adopt a project management approach to PBL implementation. Early indications are that this much tighter reporting structure and clear 'performance indicators' are proving to be effective in assisting with the transition process from a traditional curriculum to a PBL approach.

## KEYWORDS

Problem Based Learning, Project Management, PBL Implementation, Employability Skills, Bahrain Polytechnic

## INTRODUCTION

Bahrain Polytechnic has developed a unique model of Higher Education, aiming to position itself as the provider of choice for students seeking employment on graduation in an increasingly competitive labour market. The proposal to establish Bahrain Polytechnic was part of the Kingdom's strategic plans to address the issues associated with the depletion of oil resources and the need to diversify the economy in the context of an increasingly global trading environment.

Bahrain Polytechnic was established (by Royal Decree No. 65) in 2008 to meet the gap in education provision in the Kingdom of Bahrain for applied professional and technical education. The curriculum adopted by Bahrain Polytechnic is specifically designed to provide graduates with the attitude, knowledge and skills that will make them employees of choice in both the Kingdom and wider Gulf Labour Market.

Problem-based learning was identified early on as a particularly powerful pedagogy and teaching and learning approach to promote and develop transferable critical, creative thinking and entrepreneurial skills amongst students. Through well-designed work related problems that stimulate learning, Bahrain Polytechnic aims to ensure that students develop technical knowledge and skills, as well as the employability skills identified by industry as necessary attributes of a 'work ready' graduate.

As many of the elements of the curriculum were not pinned down initially, it was thought that to implement a Problem Based Learning (PBL) approach would be much easier than in more established traditional institutions (Paul, 2010), as its 'start up' status would give it more flexibility and a fresh start for many. Moreover, to expose its students to a range of international expertise and best practice Bahrain Polytechnic recruited staff from more than 20 different countries. Whilst this international flavour conveyed substantial benefits, it also created many unanticipated challenges. Staff had varying understandings and experience of PBL and this quickly proved to be a major factor in the slow progress towards PBL implementation. Furthermore, not all staff were convinced that PBL was a better approach. Another factor was the multiplicity of competing projects that staff were involved in during the establishment phase, an issue identified by external reviewers who recommended to focus on a smaller number of key projects first.

In response, Bahrain Polytechnic identified PBL implementation and the related Employability Skills Project as its major priorities for completion. The choice of these two projects is not coincidental, as they are closely intertwined. The key reason for the Polytechnic's choice of PBL as its main learning and teaching approach is that PBL is considered the most likely approach to deliver on its graduate profile, and in particular to deliver work-ready graduates.

In light of the issues identified as affecting the adoption of PBL across the Polytechnic, the PBL Steering Committee decided to adopt a much tighter project management approach to PBL implementation. Early indications from document analysis, focus groups and semi-structured interviews, are that this much tighter reporting structure and clear 'performance indicators' are proving to be effective in assisting with the transition process from a traditional curriculum to a PBL approach. The 'deliverables' are creating events that provide opportunities for engagement in conversations, from which socially constructed versions of Bahrain Polytechnic's PBL Model are expected to emerge. The project management approach allows for consistency through 'non-negotiable' elements, but at the same time facilitates the development of diverse and unique characteristics to suit individual programmes and disciplines.

## PBL AND EMPLOYABILITY SKILLS

Bahrain Polytechnic has developed a unique model of Higher Education, aiming to position itself as the provider of choice for students seeking employment upon graduation in an increasingly competitive labour market. The proposal to establish Bahrain Polytechnic was part of Bahrain's strategic plans to address the issues associated with the depletion of oil resources and the need to diversify the economy in the context of an increasingly global trading environment. Bahrain Polytechnic was established to meet the gap in education provision in the Kingdom of Bahrain for applied professional and technical education.

The curriculum adopted by Bahrain Polytechnic is specifically designed to provide graduates with the attitude, knowledge and skills that will make them work ready

and eminently employable. Curriculum includes the knowledge and skills to be acquired in programmes and courses, and the process of delivery and the physical and social context within which learning is delivered. Curriculum is all the learning which is planned and guided by Bahrain Polytechnic, whether it occurs individually or collaboratively, on campus or outside.

Bahrain Polytechnic emphasises Work Integrated Learning (WIL) as a key curriculum element in preparing students for the world of work and recognises the importance of a student-centred approach for effective delivery. WIL integrates academic and work-related activities through a Problem Based Learning (PBL) approach designed to promote critical thinking and team work. WIL provides students with meaningful authentic learning experiences relevant to the real world through a variety of strategies including: work placements based on agreed learning contracts, work simulations, cooperative projects developed in partnership with industry and opportunities to solve real industry problems. Whilst WIL is a concept that has been around for a long time, the particular advantage seen to Bahrain, is its ability, in combination with a PBL approach, to circumvent the skills discontinuity identified in current literature (Quest for Jobs, 2011).

Central to the application of WIL at Bahrain Polytechnic is the Problem Based Learning (PBL) approach in which all students' learning starts with a problem. There are many definitions and curriculum manifestations of PBL (Van Berkel et al., 2010; Barrett & Moore, 2011), but at Bahrain Polytechnic a very simple and flexible definition has been adopted, based on the notion that well-designed work-related problems stimulate learning to ensure that students develop technical knowledge and skills, as well as employability skills (communication, teamwork, problem solving, creativity and initiative). These employability skills have been identified by industry as necessary attributes of a 'work ready' graduate.

### *Graduate Requirements Emerging from Bahrain's Economic Vision 2030*

Bahrain's Economic Vision 2030 for economic growth and diversification is reflected in Bahrain Polytechnic's Academic Programme Planning and the 'Work Ready' Graduate Profile that is developed in consultation with employer networks, professional associations, government and civic agencies and Bahrain Polytechnic Curriculum Advisory Committees (CACs). Research in the formative stages of the Polytechnic indicated that employers were more concerned about a perceived lack of 'soft skills' than the academic knowledge of the current Bahraini graduates. This is both common and increasingly significant globally (Green, Hammer & Star, 2009).

The speed of 'knowledge obsolescence' is increasing almost faster than the rate at which graduates can be produced. This then draws into sharp focus what we must equip graduates with, so that they can be effective employees and responsive citizens: the work ready graduates of the future must be problem solvers, effective researchers and literate IT users, creative synthesizers of knowledge and confident communicators and presenters of their ideas (Davies, Fidler & Gorbis, 2011). They must become personal leaders and influencers who are able to justify and present opinions and decisions based on evidence in a way that adds value. Implicit in this

description is the fact they must have sufficient knowledge but more importantly, the skills to research, find information, evaluate it and synthesize effective solutions. Essentially they must show initiative and self discipline if they are to be work ready (Kek & Huijser, 2011).

As a result of this analysis of industry feedback, a set of eight Employability Skills essential for any graduate to be identified as 'work ready' was developed and internationally benchmarked, as shown in Figure 1. Employability Skills are the generic competencies industry have identified for effective participation in work and Figure 1 identifies what behaviours graduates will be expected to exhibit, and what they should be able to do in relation to these competencies.


Figure 1: The Graduate Profile of Employability Skills at Bahrain Polytechnic

***Problem Based Learning***

Problem-based learning at Bahrain Polytechnic is an integrated pedagogical approach to developing work ready graduates, rather than a specific teaching activity. The key reason for the Polytechnic's choice of PBL as a learning and teaching approach is that PBL is considered the most likely approach to deliver on its graduate profile, and in particular to deliver work-ready graduates. In his foreword to a book about PBL in Singapore, Stephen Bong states that 'innovation and creativity is not a choice for us [Singapore]. It is a necessity if Singapore is to continue to be successful in the global knowledge economy' (2002, p. ix). A similar claim can be made for Bahrain as it prepares for its future social and economic

development. Indeed, Bahrain's Economic Development Board (EDB) has identified three key challenges as part of its *Economic Vision 2030*:

- *Transforming the Bahraini economy by focusing on developing the quality and number of jobs for Bahrainis and improving skills for job seekers*
- *Competing in an increasingly global market place by encouraging innovation and developing new and growth sectors in the economy*
- *Exploiting unprecedented growth opportunities as the GCC continues to develop*

Although these three challenges are intimately related, we focus on the first and second one in this paper. As Wee and Kek note, 'in view of the complex and emerging new contexts in the global business environments, it seems natural that new demands are being placed on the suppliers of fresh graduates. New paradigms in conducting business and new competencies are needed' (2002, p. 11). Problem Based Learning is seen as having the potential to help facilitate such a paradigm shift. An often cited strength of PBL initiatives is that they facilitate the development of transferable or 'soft' skills (or what we call 'employability skills') such as teamwork, communication, information literacy, critical thinking, lifelong learning, problem solving, self management, planning and organization, and innovation and enterprise (Moore & Poikela, 2011; Kek & Huijser, 2011). On a global level, many employers identify such transferable skills as more important than technical skills or content knowledge (Drohan, Mauffette & Allard, 2011). PBL is a pedagogical approach that potentially allows higher education institutes to better address these needs, and to move away from more traditional and didactic approaches to learning and teaching, which are often purely focused on the transfer of knowledge and the reproduction of content. Majoor and Aarts (2010, p. 249, our emphases) cite the following summary about higher education by the World Bank:

> The world today is increasingly dependent on knowledge and therefore on people who are capable of *generating* and *applying* knowledge. Thus, the potential of a society to develop is critically related to the comprehensiveness and quality of its educational system and rate of participation of the population in that system.

The emphasis here is thus on *generating* and *applying* knowledge, rather than *reproducing* it, which is what more traditional approaches are focused on. Majoor and Aarts further argue that the problem with traditional teaching approaches is not only that the knowledge thus acquired is static, but more importantly that it is often outdated in a global context in which knowledge changes rapidly. They note that the qualitative challenges in higher education have their roots in the traditional lecture-based didactic tradition, which continues to dominate education in many developing countries (including Bahrain), and is not being adjusted to the changing needs of society (Majoor & Aarts, 2010; Davies, Fidler & Gorbis, 2011). Bahrain Polytechnic's adoption of PBL as its main pedagogical approach is an attempt to address these changing needs. More specifically, the needs of industry in a broad sense were an integral part of the development of Bahrain Polytechnic's graduate profile, which includes the eight 'soft' employability skills that are outlined above and are based on various surveys with employers in Bahrain, as well as continuous cycles of consultations with those

employers through the Curriculum Advisory Committees, professional associations, other consultation networks and individual companies.

Such collaboration is important to ensure that programmes are relevant, and that they are designed and delivered to respond to changing labour market needs in Bahrain and beyond. Overall then, PBL aligns well with the strategic objectives of the Polytechnic, as Figure 2 shows clearly.


Figure 2: PBL Alignment with Strategic Objectives

***Bahrain Polytechnic's PBL Model & Implementation Project Plan***

PBL implementation at Bahrain Polytechnic started in earnest in July and August 2010. In July, PBL expert Dr Terry Barrett (University College Dublin) visited to work with a sizeable number of staff for a week. These workshops initiated a series of PBL pilots in different courses across various programmes. In August, a newly appointed PBL specialist was tasked with developing a more comprehensive plan to implement PBL across all the Polytechnic's programmes. The initial plan was a five-year plan, based on slowly phasing in the PBL approach in selected courses, with a doubling of uptake each year thereafter. It was subsequently decided that this would be too slow, and in addition, it soon became clear that there was a wide variety of interpretations amongst staff about what PBL actually was. Therefore the Academic Director and the newly formed PBL Steering Committee initiated a process to develop a common understanding, with the aim of constructing a PBL model that would fit the needs of the Polytechnic. After various rounds of consultations, the model shown in Figure 3 was decided upon, because it is expected to lead to the graduate profile. As well, it provided enough flexibility to allow for programme-specific PBL models, as it is essentially a 'pick-n-mix' model, through which programme teams can decide which of the four options would be most appropriate at any stage of their programme.

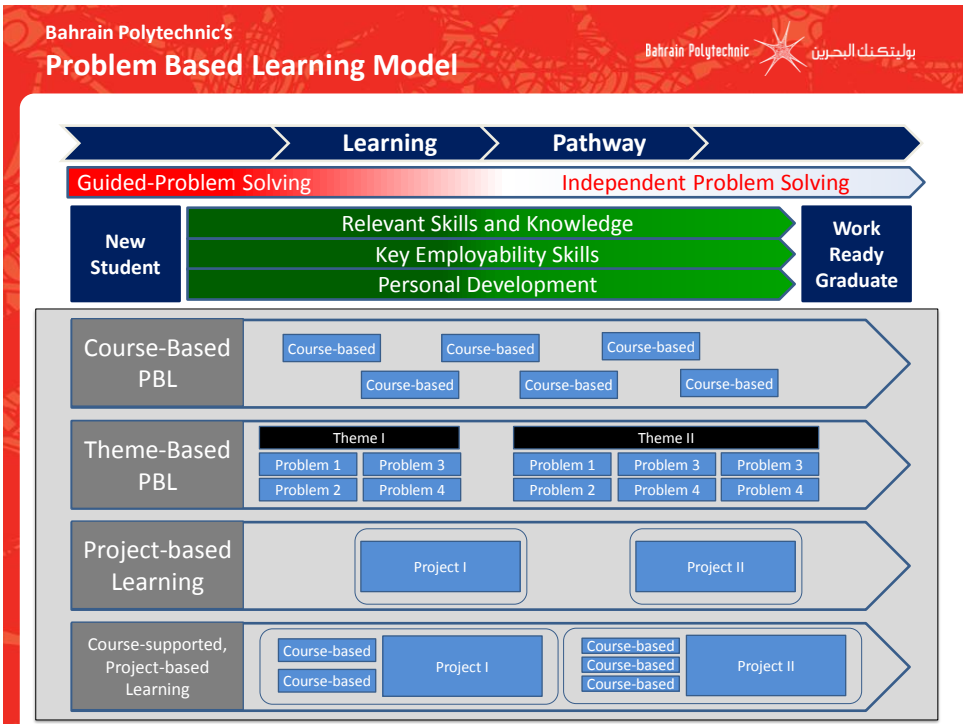


Figure 3: Bahrain Polytechnic Problem Based Learning Model

Once this PBL model was approved, implementation was able to start in earnest. However, progress was slow..A number of reasons for this lack of progress were identified including lack of clear understanding of requirements and implications, and a subsequent tendency for PBL to slip down the list of priorities, especially during busy teaching and administrative periods, as well as considerable staffing, workload and spacing pressures. These issues provided the catalyst for trying a different approach and a Project Management specialist was consulted to give the implementation process a clearer structure. The outcome was that PBL implementation is now treated as a project with clear deliverables and deadlines, as well as risk management strategies. The first deliverable has been a requirement for all Polytechnic programmes to map their programme in such a way that it aligns with the Polytechnic's PBL model. This paper reports on a qualitative evaluation of the initial stages of this approach.

## METHOD

Qualitative methods were deemed to be most appropriate, as the researchers were interested in people's perceptions, interpretations, and engagement with PBL implementation at this stage of the project. Three main sources of data informed this research: documents, feedback from programme/course PBL pilots and a series of interviews/focus groups on the project implementation stage itself.

### *Document Analysis*

A number of documents informed the context in which the PBL approach has been implemented over the three years since the Polytechnic was opened in 2008. These provided information about who the 'key players' in this process were. This included both teaching and management staff, as well as students who have been in courses in which the initial pilots took place.

### *PBL Pilots*

A number of tutors who championed the initial PBL pilots were interviewed and videoed to provide feedback on their experiences. These videos were analysed and themes identified. The interview questions were primarily designed to evaluate the courses in which these teachers piloted a PBL approach. The questions were broad and open-ended, and asked for example what worked well in their opinion, and what did not work well; what they were anxious about beforehand, what surprised them after implementation; and how they thought their students responded to it and learned. This data was gathered in one-to-one interviews, as well as in a public forum session, where other tutors and Polytechnic staff had the opportunity to ask questions of a panel of these PBL champions, some of whom were also the interviewees. Furthermore, a number of these champions had already presented their experiences in a series of public seminars about the same topic at an earlier stage.

The Diploma of Office Management (a small programme within the Faculty of Business) has been actively utilising a PBL approach across its programme for two semesters. This provided a valuable pilot, as there were small numbers of students and a team of tutors fully committed to the PBL approach. Feedback from employers, students and staff was gained on the work readiness of these students after a work experience block, providing data through a survey, and a follow up focus group was conducted with six Office Management students and one of the tutors, during which the role of PBL in their 'work readiness' was also discussed. This was recorded in the form of a digital sound file.

### *Interviews/Focus Groups on the Project Implementation Stage*

Staff involved in interviews and focus groups were both managers and tutors, and together covered most of the people on Academic Board, the Senior Management Team and members of the PBL Steering Committee. Furthermore, some individuals were asked follow-up questions (by phone and email) to gather specific feedback on issues that emerged during the course of the conversations.

A number of 'starter' questions were sent out ahead of the discussions (see Appendix A), with a consent form and information sheet. The conversations were conducted either as one-to-one naturalistic interviews, or more interactive focus groups. In total 15 staff participated in the conversations about PBL plans and the project approach to implementation. The discussions generally took about 30 minutes and the format was selected according to individual preference and availability. In the focus group sessions two researchers were present, while in the individual interviews, usually only one researcher was present to capture the responses and facilitate the session. Records of the feedback were captured by digital sound file and/or notes taken directly onto an iPad by one of the researchers.

## RESULTS AND FINDINGS

### *Pilot Findings*

The initial successful PBL pilots were spread over a number of Engineering courses, two Web Media courses and most of the Office Management Diploma courses. Key themes that emerged from the pilots related to preparation and anxiety about using a 'new' teaching approach, student engagement and learning, employability skills, 'trouble shooting' and professional development needs. Those

teachers who had decided to use a PBL approach more or less followed the structure (e.g. the 7 step PBL process) that Terry Barrett had outlined during her visit to Bahrain Polytechnic (Barrett & Moore, 2011). The initial anxiety stemmed largely from the potential unpredictability of PBL in the classroom, when compared with more traditional content-based teaching approaches where every minute is carefully planned and in the teacher's control. A good example of this came from one of the Engineering teachers, who gave his students a problem in the form of a one sentence statement in which they had to find a way to get the Chilean miners out of the collapsed mine. He soon found out that his students had no idea how to start with it, nor indeed where Chile was, so he had to quickly adapt his approach and present the problem in more manageable chunks. Many such stories came out of the pilots, and they are important to share, as they are the most effective way to win other teachers over who are sceptical and anxious about adopting a new approach to their teaching.

For the purposes of this paper, the main findings from both these pilots, as related to both teacher and student feedback, was that students became highly engaged in the classroom, in some cases to the point where they would ask their teacher if they could 'just get on with their project'. The second main finding is that through this engagement, they were actively developing and demonstrating employability skills. A good example of this was when one of the teachers had simply asked her students to do the seminar about her PBL experiences for her, with very little briefing. This student-led session, in front of at least twenty Polytechnic staff, was one of the most exciting and illuminating seminar sessions of all. To further support the argument about students developing employability skills, during a focus group with Office Management students they all talked about how prepared they felt in terms of most of the employability skills when they went on their work placements. Indeed, some of these students reported that they were 'over-prepared', as in some cases they showed up some of the existing staff in those workplaces. These students emphasised that they had developed some of the employability skills (such as initiative or problem solving) as a result of PBL in their classrooms. As mentioned, many other themes emerged from these pilots, but for the purposes of this paper, suffice to say that the finding from these pilots largely reinforce the reasons behind the Polytechnic's adoption of PBL as a way to develop employability skills in work ready graduates. This then raises the question of why the implementation process has been relative slow, and whether the project management approach is likely to speed this process up.

***Interviews/Focus Groups on the Project Implementation Stage:***

In terms of broad understandings of PBL, there was a fairly consistent understanding of PBL as *'a methodology used to deliver curriculum'.* Some typical responses included:

- It's about having authentic real live problems to solve.
- *It is aimed at bringing a real situation into the classroom – applied learning, real projects and real problems that students will face in reality.*
- *PBL is a vehicle for unravelling the knowledge and learning (...) to experience the idea, not being told about it, but experiencing it.*
- *Instead of presenting information, present carefully constructed problems aimed at getting students to think, to realise what they don't know.*

Most areas of the Polytechnic are actively involved in implementing PBL, or in supporting it, and what came through very strongly was the importance of a high level of support from senior managers, particularly of the CEO: '*There is strong support for PBL from the Faculty Management team, Dean and Programme Managers'*, but it '*requires* [all] *people to be believers'*. Since the Polytechnic is in a growth phase, this creates a particular problem for the PBL project because '*Every time we get a new group, we get dragged back to traditional teaching that they are used to'*, so it is imperative that PBL as a concept be '*simplified to a level that all new staff can be inducted, be given a grounding that can modify their approach to learning. It's an ideal opportunity to build it from scratch. It's much easier to put this in now as we grow'*, the CEO explained.

The PBL Curriculum Specialist maintained that *'a bottom up approach is a better way to go, but needs to be both, top down'*. He confirmed that: '*the general attitude of staff is positive and most are happy with the concept in principle, they are on board with it'*. This positivity was evidenced by the way staff participated in PBL related events and through frequent requests for assistance. Moreover, this was largely attributed to the professional development activities established as part of the implementation strategy: '*All staff through CTTL*[1] *and PBL workshops are knowledgeable of PBL'*, which suggests that the hardest part of implementing the project, getting 'buy-in' from staff, has already been achieved. However, '*a lot of speed bumps and blockages, outside our control'* have hampered implementation, so this was the main rationale for adopting the project management approach, '*to see if we can make progress'*. A number of specific issues associated with Learning Delivery, Human Resources and Facilities, and the Project Plan itself, were identified during this initial review of the adoption of a Project Management approach to the implementation of PBL across the Polytechnic.

***Learning Delivery***

While most areas were actively involved in implementing PBL, or in supporting it, the degree of understanding and level of uptake of PBL across the different programmes was variable, sometimes even within the same faculty:

- *There is a good understanding and acceptance of PBL educational philosophy across the Engineering and Design technologies faculty. There are the early adopters in Engineering through to the more conservative adopters in ICT.*
- *Some programmes aren't picking it up, which affects student opportunities to learn by PBL. Also graduates won't all have the same strengths as a result, then that's a reputational risk.*
- *English is unique, a very prescriptive style of teaching, there are rules, follow them. Only a few [teachers] seem to have a holistic approach. English teachers see it as incongruent.*
- *There is no way PBL can ever work in English. You are just dreaming, you are just wasting our time.*
- *We like the idea, but it hasn't started yet.*

There was a general feeling that in some programmes a 'total' PBL approach was thought not to be appropriate. A case in point was the Certificate in Academic Preparation (CAP), a

[1] Certificate of Tertiary Teaching & Learning - compulsory for all Bahrain Polytechnic teaching staff.

foundation programme to facilitate entry to degree level study: '*The degree to which we can apply PBL to CAP is limited, because of language, I mean, how much students can handle, they have no training in PBL, so they're taught what PBL is. They need to practice it before they can study using it, so in CAP we're looking at introducing it. Not teaching it full blown'*. Language acquisition and level were two main factors mentioned by a number of staff in regard to courses where the PBL approach was not being taken up: '*Some variation with level of learning'*. Whether this was also partly attributable to a lack of understanding of the PBL concept and how it could be applied is a question that warrants further attention.

These differences in understanding and knowledge appeared to be reflected in the models of PBL adopted, as an analysis of the seven PBL Programme Maps submitted as the first deliverable of the project plan appeared to indicate. Most areas that were taking the first tentative steps towards PBL adoption focused on a 'within course' approach: '*A small number of staff, the early adopters in Engineering and Web Media have implemented PBL at the course level'*.

As tutors' understanding and confidence develop they may be more willing to experiment with other forms of PBL that require a higher level of integration and pose more challenges to assessment of Learning Outcomes: '*The Electronic and Mechanical Engineering degrees have commenced PBL at the programme level with integrated courses feeding into a PBL scenario. In Electronic Engineering the Segway project*[2] *forms the hub of the PBL approach while in Mechanical it is the sports car*[3]*. Both projects use a project management approach. In Electronics project management is embedded as a methodology. In Mechanical, because of the scope and range of the project, project management is a PBL course that integrates with the other PBL courses'*.

However, it may just be that some subjects lend themselves more naturally to a PBL approach that '*needs real problems, which is easy in Engineering'* as this excerpt shows: *'It's across all the programme, suits us down to the ground, and it's taken on as a project, project based learning. It's course oriented in the first 2 years, with PBL inside it, but the last 2 years' projects allowed us to get away from content, into making things, applied skills (...) In engineering its always about solving problems. The project is the problem and there are also problems inside it'*.

Other areas were at the beginning stages of grappling with the PBL concept. Here the value of the Project Plan became apparent, as one of the first requirements was a PBL Curriculum Map: *'We are still at the fear stage, what does it mean for the job and our roles. We are looking at what we are doing now, we've discussed how we might change our approach to learning through a problem. We're producing resources to share. The maps have got us thinking about different models'*.

### *Human Resources and Facilities*

In areas where there has been a strong implementation of the PBL approach, all aspects of the curriculum have received attention, and there is a strong sense of

[2] The Electronic Engineering Programme has purchased a number of Segways that students can use for 'reverse engineering', and that are used in student projects.

[3] The Mechanical Engineering Programme has a large project in year 3 and 4 of their Programme, which involves students building a sports car.

forward planning, ranging from the provision of professional development (‘*Members of the Mechanical Engineering team visited other institutions in the process of developing the sports car project’*) to the development of special facilities and purchase of equipment to support PBL (‘*There are PBL areas allocated to specific student groups for the Segway project on the first floor of building 10. The sports car project has developed building 30 as a specific space for developing this project’).*

However evidence of carefully thought out plans for all aspects of a PBL curriculum was not found in all faculties: ‘*Flexibility of implementation within programmes has seen inconsistent application of the plan e.g. some seem to be very focussed on PBL, others are yet to initiate any course changes to reflect PBL’.* In Business for example, there was a diversity of opinion from different members of that Faculty, ranging from: ‘*we are not really doing it’,* to the perspective that PBL was being implemented ‘*little by little’,* but that there was ‘*not a systematic approach’* and ‘*everyone is doing their own thing’.* This lack of planning at Faculty level made for difficulties in coordinating requests for facilities provision in particular, and this was exacerbated by a lack of staffing in certain areas: ‘*Staffing issues drive bigger rooms. Conflicting priorities’.* The Director Facilities reported that ‘*they need spaces that are continuously available. We don’t have stock to configure’.* From a tutor’s perspective, ‘*the way rooms are organised sends an immediate message, rooms crowded, desks only just fit in, suggests sit in rows in desks’.*

This then resulted in staff feeling that ‘*they are pioneering, and then feel not supported’*. This lack of appropriate facilities was exacerbated by a lack of knowledge of what was really required to deliver PBL, as the curriculum design was still evolving. This led to difficulties in ascertaining the validity of staffing and facilities requests in terms of PBL.

***The Project Management Approach***

As a consequence of resourcing concerns, particularly those associated with lack of staff numbers (tutors, curriculum developers and PBL specialist advisors and trainers), equipment procurement in a PBL scenario and availability of appropriate facilities, there was a consensus that the dates in the plan were not realistic. This was particularly raised because:

- *This plan is not responding to the current operational situation issues; shortage of staffing, class sizes, resources, facilities.*
- *Most will need help. Are the dates realistic?*
- *All facilities are very traditional and there aren’t enough of them.*
- *People don’t have the experience.*
- *The actual design of PBL requires a lot of resources in the design stage. We offered to bring in staff from outside, but [staff] don’t have the time.*

The ‘*dates are there, but need reviewing*’ and we need to identify the risks. The facilities challenge in particular was identified as a risk: ‘*not it might go wrong, it has gone wrong. We cannot manage this’.* There were similar concerns about the human resources capacity and capability. As a result there was a view held by many that the timelines needed extending out: ‘*Suggest that they forget about it for a while. It can’t be a priority till we get full staffing. We need to have full staffing to cover classes and some spare to do the development work required on it. There is no expertise in our area, there is hardly any expertise in the whole Polytechnic on PBL, they haven’t hired staff for their knowledge of PBL’.* However, others felt that postponement would bring its own risks: ‘*If we postpone it poses other risks. We are*

*getting closer to graduating students, they won't have those* [work ready] *skills. IS DOING IT POORLY OK*?' one staff member asked emphatically. Some would answer that question with an emphatic 'NO'. As Paul for example argues: 'When in doubt or unable to implement a complete changeover, one would be wiser to stick with the conventional curriculum as a whole' (2010, p. 149).

One of the critiques of the Project Management approach was that it was not specific enough. It needs to be: '*nailed down with dates and names of people, make it clear what it needs to be done* [and] *broken down to manageable tasks'*. There was also a concern that the plan might not have given a strong enough indication of where the emphasis should lie in the initial stages of development: '*yes, the problem isn't with the methodology-an important step that's missing is the curriculum design. Once you have this, then work on implementation'.*

- *You have to have the macro curriculum very clear. PBL really depends on integration for it to be successful. You cannot go on delivering PBL in courses, this won't be a strong model. The reason that we gave these models was for people to be flexible, there isn't necessarily one way, you can mix and match. So the next step is really is to design the macro-curriculum. It's clear but people don't know how to do it, this is the biggest obstacle.*

It was clear that a lack of long term planning, hampered by a lack of understanding of what exactly was required by those responsible for recruitment and facilities provision, underpinned many of the concerns voiced. Thus, it was not surprising that among the many strategies suggested as a way forward to overcome these concerns, professional development featured commonly: '*People don't have the experience, and that's why we suggested bringing people from outside, to help design a model'.*

The lack of specialist staff indicated the need for more professional development:

- *(We) need better understanding of PBL and how it might be taught, need to get buy in?*
- *New staff introduction about the new direction, its only superficial, needs follow up in depth.*

This led to the suggestion that CTTL be reviewed '*to adopt a PBL strategy and teaching methodology to support our recruitment of labour market specialists with limited teaching backgrounds'* and that *'Practical - focused ongoing training'* be provided. The model of putting on seminars and workshops was found not to be effective: '[We] *need to work with individuals and make it related. General stuff doesn't work, but we still do it. Show me how to do it with my classes and my students'.*

Another critique of the Project Management approach related to lack of communication ('*there is no communication top down'*) and several participants contributed suggestions towards improving the PBL implementation plan:

- *More involvement of teaching staff themselves, in actual planning, to get buy in. Little working groups, ad hoc working parties for specific purposes, just for a day, to have input, make contributions, create a feeling of ownership.*

- *More forums where tutors and managers can discuss. Helpful if there is more cohesion. But a Catch 21. No time to get together.*

Other suggestions for improving this Project Management Plan included:

- *Effective consultation – more focus groups.*
- *Monitor the plan more closely for consistent implementation and reporting.*
- *Need to get real problems, and champions to move it; make this more explicit in the plan.*
- *Celebrating successes; needs time allowance?*
- *Look at alternative rewards for successful staff involvement in this project.*
- *Identify this as a priority, with specific funds allocated.*
- *Develop a clearer link between the PBL Project Plan and the Polytechnic's overall strategic planning.*

**DISCUSSION AND CONCLUSIONS**

Despite the early development stage that Bahrain Polytechnic is still in, it has not been as easy to implement a PBL approach as initially thought. The multinational staff created unanticipated challenges as staff brought with them varying understandings and experiences of PBL. These challenges provided the impetus to introducing a Project Management approach towards implementation: '*it's a new institution so we still have a chance, but we still need to have a change implementation plan. Being new does allow you to do a lot from scratch, but not everyone comes with a clean slate'*. The PBL Steering Committee has adopted a much tighter project management approach to PBL implementation in an effort to get greater traction on the implementation of the project, and this appeared to be having the desired effect, as evidenced by the following responses:

- *The fact that there is a deadline and it goes through SMT[4] is a push.*
- *By giving deadlines it gives support too. Hearing more about PBL... people are working with it, more than talking about it.*
- *The plan we have now is better, we had goodwill, but now it's got more educational leadership.*
- *It's a workable plan if the constraints were not there; the variables are big ones... staff and facilities.*
- *The Project Plan makes it much more acceptable; buy in from managers needs to be better, so it gets pushed down better. PBL project is now a standing item on Academic Board, which raises the awareness.*

As a result of this initial review of the Project Management approach, a number of issues were identified. Interestingly these reflected exactly those shown in Figure 4, which was published in January 2011, suggesting that there were 'no surprises' in the findings from this initial review, in relation to those that formed the basis for the Project Plan. Because of the commitment to the project, staff who brought up problems, generally also brought up suggestions that the Polytechnic could adopt for resolving these.

[4] Senior Management Team


Figure 4: Bahrain Polytechnic PBL Model: Key Areas of Impact

The real value of the project management approach then, with its structure of required deliverables, is that it creates pre-planned 'events' that create a space and provide an opportunity to discuss the issues and to plan for resolutions. The level of CEO support augers well for implementation of the change towards a Polytechnic-wide PBL delivery, but there are questions around whether the timeframe is realistic given current issues with staffing and facilities resourcing, which all impact on design and curriculum development work, as well as delivery. Some major aspects that were highlighted by this process included the debate about whether the whole project should 'go slow' or to allow areas to work at their own pace, with the risk of loss of integration and impetus of the Polytechnic-wide process, and curriculum fragmentation within Faculties. However, this interim evaluation shows that the Project Management approach has major benefits, in that it creates some traction, despite a lack of resourcing.

Early indications are that the much tighter reporting structure and clear 'performance indicators' are proving to be effective in assisting with the transition process from a traditional curriculum to a PBL approach. The 'deliverables' create events that provide the opportunity for engagement in conversations from which socially constructed versions of Bahrain Polytechnic's PBL model can emerge, consistent but diverse, and with their own unique journey towards implementation.

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**APPENDIX A**

**Conversation 'Starter' Questions**

- *What is your (Faculty/Programme's/Department's) understanding of PBL?*
- *Please outline what are you and /or your (Faculty/Programme/Department) doing to support the implementation of PBL?*
- *The PBL project plan is on the Polytechnic's Sharepoint in the PBL Steering Committee Section-had you seen this before? (yes/no)*
- *Do you think this plan is a workable way of managing the implementation of PBL?*
- *Please provide a reason for your answer (eg If not why not?)*
- *What suggestions do you have for improving this plan?*
- *The adoption of a PBL Project plan is just one strategy aimed at assisting the implementation of the PBL project:*
- *What other issues need to be addressed in the PBL project implementation and what suggestions do you have for additional strategies to get traction on this project?*