

# Achieving Learner Independence Using the Problem-Based Learning (PBL) Approach

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## Abstract

In line with the Singapore government's emphasis for nurturing thinking schools and learning nation concept, we at the Temasek Business School specifically the Business Communication Team has embarked on changing the traditional mode of teacher-centred delivery to a more independent mode of learning.

The PBL approach was tapped for this purpose as we found that this was the best way of empowering the students in making decisions about their own learning. This paper will therefore highlight the implementation process used in executing this approach in the Business Communication course.

The paper will also highlight the survey results of the student feedback on the success of this approach. This survey was conducted as both a pre as well as a post survey to gauge the effectiveness of this new method of learning.

We will also share the need for paradigm shift in both the learner and the facilitators of this process. The change in mind-set required can be an uphill task for many.

The paper will also touch on the assessment procedure used to measure student performance, an area that is still in its early stages of development.

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## Introduction

The Problem-Based Learning (PBL) approach is not new to training. Since its implementation in medical training in the early sixties (Banerjee & De Graff, 1996), the parameters of education have taken on new dimensions with the world becoming more compact and information, more fluid and immediate. The rapidity of knowledge change means that learners have little time to reflect on the knowledge presented. They most often surface learn the area of knowledge and then discard it as soon as the need is over. They prefer to be directed in the learning agenda and choose to be told rather than search to find out information. In line with the new work environment "where workers are given increased responsibilities, including individual and team based goal-setting responsibility and greater latitude to achieve these goals", it is felt that learners need to be given more opportunities for self direction (Pennella, M. 1997:64).

Mass education and skills development competencies require new changes in the approach we take to training individuals. Training individuals today is no longer a matter of industry specific training. Training has become a matter of training for life. We have to see that the individual who comes to us for training and who leaves us after training is not the same individual but is someone who has the competencies to extend himself where and when he is required to do so especially where the nature of the job and the competence of the individual converge.

## What is PBL?

PBL is essentially an approach to the management of the learner for one specific goal and that is to make the learner an independent thinker. The challenge of PBL for teachers is to design learning tasks in a context to engage the students in adopting the same kind of thinking process in real life (Brown et al, 1989; Lave & Wenger, 1991). The impact that makes PBL attractive as a new learner management approach is its inherent characteristic to give autonomy to the learner and to make the learner a decision maker in the process as well as the product of learning. So the learner now has rights to decide what he wants to learn and how much he wants to learn. As given by Entwistle, the PBL process encourages flexible learning by allowing students to "explore their own preferred ways of learning through guided choice and self-monitoring of their own reactions and progress"(1996:111). These are novel characteristics in that education so far has been determined and controlled by the teachers and the learners have very largely taken on the passive role of being recipients of the process. They have had little decision-making control over what they have to learn and how they wish to learn. Teacher talk - learner listen, the chalk and talk methods all point in this direction of learner passivity in the process of education.

PBL on the other hand, gives control back to the learner. It is a hand-over process of autonomy. Again how this is done is a matter of how prepared we are to engage in this process of control decentralisation. Specifically, are we ready to give up our control and give back control to the learner? Questions of how we can do this in the least painful way, how we can train both the learner and the teacher to accept new roles all come to the forefront of this approach.

## Stages in PBL

Fundamentally, there seems to be three significant steps/strategies that need to be implemented to equip the learner with the skills for independent discovery and learning. Norman & Schmidt (1992) specifies strategy one as that of acquiring factual knowledge especially in the context in which this knowledge will be used later. Second, the ability of the learner to gain mastery over concepts and to offer independent and plausible solutions to other areas where similar problems are identified is a transfer skill, which will be an in-built advantage of the PBL process. Third, the ability of the learner to internalise prior examples so that the learner can engage in pattern recognition and thus acquire enabling skills.

## The PBL Approach in the Business Communication Section, Temasek Business School

How we can implement this approach and reap the benefits are concerns we need to address here. Basically what we wish to present here is the manner in which the PBL process is implemented among the Business/Corporate Communication subjects at the Temasek Business School, Temasek Polytechnic.

At Temasek Business School, we have adopted a six-stage approach. Before we get the students to work on the six stages, we first get them to sign a learning contract as a group. We believe that it is vital for learners to acknowledge a conscious commitment to the group endeavour to search for and to synthesise information so that learning and development can be achieved.

The six PBL stages are comprehensively described in the table below:

## PBL Stages Remarks

### Stage 1:

The Problem Statement Here, students are given a problem scenario designed to place them in a familiar work context to give the learner the scaffolding to extend his reality. The provision of contextual/situational cues would be a sound design requirement to bear in mind as this then places the issues more concretely for the learner. Our experience at Temasek shows that a problem based in a scenario with a dialogue to build the reality element is a good approach to take especially in the desire to authenticate.

At this stage, the learners group together to describe the problem given in their own terms. This approach allows them the freedom to identify key elements in the given problem and to use these as part of their problem identification process.

### Stage 2:

#### Problem Enquiry

Here, the learner uses prior knowledge to come up with possibilities i.e. possible solutions. This is a generation stage and we spell out quite clearly that there should be suspension of all critical evaluation/judgement of proposed solutions at this stage. We have noticed that this allows for free collaborative exchange among the group members, as the climate is then non-threatening.

### Stage 3:

#### Learning Issues

At this stage, the learner selects, organises and categorises the many ideas which would have surfaced at the preceding stage. The learners also delegate the various learning issues here. The group dynamics have to be good for an equitable distribution of the items listed in the issues/topics stage for the group to progress.

Once this stage is over the learners work rather independently as they engage in finding information on the learning issues delegated to them. Our experience shows that learners have the ability to gather information but have little discriminatory skills. It is not uncommon for learners to come to us once they have gathered notes to seek approval that they have picked the right information. One strategy we have adopted to help them is to get them to go through the problem again. The students are also required to summarise their findings and this is helpful, as we then know that some form of assimilation is occurring.

Learners are very co-operative at this stage. When they are engaged in search using various resources including interviewing people with experience in the given problem, they have a tendency to gather information for other members should they come across information which would be relevant to the other issues identified in stage three.

We have come to see learners moving away from competitive learning to co-operative learning because of the need to collaborate, which we believe, is an in-built asset of PBL.

### Stage 4:

#### Peer Sharing

Here, the learners come together once again to table the information they have gathered through their search. Co-operation and collaboration are best seen at this stage. Learners also use management skills in that they know turn taking and turn giving cycles and are able to question and

seek further information as well as do open sharing of new information they have picked up in their readings. We have discovered that students have the ability to go back to the search stage if they are not able to provide answers to questions asked during the sharing session.

## Stage 5:

### The Problem Solution

The group then proceeds to engage in formulating the solution to the problem, as the information they have gathered will help them get this stage together. This stage will help the learners gel what they have picked up into a solution, which can address the initial problem presented to the learners. Generally, we get the learners to do a group presentation so that the entire learning circle is aware of the different information as well as the perspectives taken by the different learning groups.

## Stage 6:

### Reflection

The last stage in this entire process is the reflection stage. We get the learners to keep an audit portfolio where they record their entire learning engagement as well as their reflections regarding the process of learning. They keep a detailed log of all their group meetings and the discussions, which ensued, from their meetings as well as their reflections of the sharing and learning they have gathered in the process taken to learn.

## Survey Results

As part of the implementation process, we executed a survey to gauge learner response to this new methodology. The survey was administered to a sample of about 100 students from the seven diplomas we teach in the diploma programmes at Temasek Business School. The survey, which comprised eleven questions (see appendix 1) pertaining to learning styles, classroom management techniques and learner motivation, was conducted both before and after the PBL implementation.

Generally, we gathered from the post PBL survey results that learners found this methodology challenging (74.3%). This result was further supported by an 88.7% return on the fact that the PBL approach has made the learner independent. We found this heartening as it gave us the challenge to fine-tune the PBL approach we had adopted. Specific to the question of learner independence, we found that this approach gave learners the autonomy to determine what they wanted to learn (66.2%). On the question of this approach enabling learners to gather new knowledge, we found that about 70% of the respondents felt that the approach enabled them to find new knowledge. Also, slightly more than 50% of the respondents felt that this approach has made them confident and enlightened as learners. The results pointed us in the direction that we were on the right track and that fine tuning the approach we had taken would only add to the returns to learning we were gaining. Amazingly, 99% of the respondents began the PBL journey rather negatively as revealed in the pre PBL survey result. Nearly the entire cohort found this approach confusing, and was generally lost and

apprehensive at the initial stages. However they did not remain at this stage for very long. By the end of the learning process, about 85.4% of the learners found that this approach had helped them to be more committed, more confident and become more independent as learners.

Our initial experimentation with PBL suggests a major shift in perspectives for both the learner and the trainer. Coping skills such as meeting skills, time management skills, referencing and conflict management skills have to be given as compensatory developmental skills rather than leaving these to chance especially if we wish this approach to have any safe measure of success.

## Learners' Reflections

Generally, the comments have been positive. Their reflections show that they have considered the learning process objectively and are able to provide a developmental comment on the cycle of change that has occurred in their learning methodology.

Some sample reflections are given below:

- I have never been to the library so often in 1 week and borrowed so many books. This is the first time that I have had to worry about having borrowed (About PBL)...It's [like]if I give you a fish you can eat for a day, but if I teach you how to fish, you eat for a lifetime. (Julian 2M04)
- The perception of lecturers getting paid without doing any work is wrong...[I am] frustrated when I don't get the answers I want from my facilitator. But this has also taught me to be patient and [I] realize that I cannot be dependent on my lecturers to provide answers all the time. (Annabel Chan 2A06)

We can see from the sample reflection above that learners have achieved a measure of independence and autonomy in their learning. We take this to be an extremely positive sign especially in a system that has for a very long time encouraged passivity from the learners and has been prescriptive as far as educational process is concerned.

## Assessments

Admittedly little has been done in this area. The process has changed radically but the assessment has remained very largely pen and paper test. There is a reason for this, in that although the process has changed the learning content has not changed. In other words we can learn differently but we need to know the facts whichever way we may have acquired them.

We now place more emphasis on the process documents and the reflections that the learner records throughout his learning cycle and we place less emphasis on the products of learning. We reward the process by assigning certain marks to each stage of the process. The final solution, therefore, now carries fewer marks compared to what it was in the traditional method. Through this, we have discovered that once the process is in place, the product is generally of an acceptable standard.

## Conclusion

The shift from the classroom teacher autonomy teaching-learning nexus to the process-based engaged learner small-group learning is a radical shift in the process of learning. This shift can only happen if we are to see learning as an infinite process that is timeless. The goals of education and training then have to replicate the realities of the world of work and equip the learner i.e. the worker of the future to be a competitive change agent who can provide plausible solutions to issues/problems faced in an unpredictable real world where change and innovation are common features. This shift demands that the teacher also participates in a radical redefinition of his portfolio from that of a manager to that of a facilitator. This change is not easy and has to be done in stage and sufficient training and preparatory work have to be done for the smooth transition of the classroom from a teacher-centred climate to a learner driven experience.

Whatever the case may be the PBL approach to education will bring long-term effects although there may not be radical short-term effects. It is also important to realise that the integration of the curriculum and cumulative learning have to be put in place to reap as much benefits from this process approach to education and training.

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## Appendix 1

### Temasek Business School Pre /Post-PBL Questionnaire

This questionnaire is administered with the intention of finding out the learning styles and strategies used by learners.

Please fill in your responses carefully and as honestly as possible. Thank you.

#### INSTRUCTIONS:

TICK THE RELEVANT OPTIONS GIVEN.

1) I Like to learn:

a) By myself

b) In a group

c) In a pair

d) Specify any other approaches you use as your preferred learning style:

2) I like to engage in:

a) Group work

b) Individual work

c) Paired work

d) Specify any other work approaches you like:

3) I prefer to study using the:

- a) Case study approach
- b) Project work approach
- c) Take-home test approach
- d) Individual test approach

4) I like it when my lecturer:

- a) Does classroom teaching
- b) Directs me on what to learn
- c) Gives me a free-hand to decide what I want to learn
- d) Does stand-up teaching

5) I like to learn:

- a) Quietly
- b) With noise
- c) With an exchange of ideas
- d) Specify any other mode of learning you like:

6) The current approach taken by my lecturer:

- a) Allows me to share my ideas with everyone
- b) Allows me to learn from what my lecturer tells me
- c) Allows me to search for new information
- d) Directs me on what to learn

7) The present style of teaching allows me to be:

- a) A confident learner
- b) A confused learner
- c) A responsible learner
- d) A dependent learner

8) I expect my lecturer to:

- a) Tell me what to learn
- b) Do the teaching
- c) Give me the assignments
- d) Allow me to decide what to learn

9) The current style of teaching:

- a) Requires me to do a lot of self-study
- b) Demands that I do a lot of research
- c) Gives me the notes to help my learning
- d) Gives me the security that my lecturer knows what I should learn

10) The current style of learning:

- a) Is stimulating
- b) Is exciting
- c) Is boring
- d) Is frustrating

11) I think learning is:

- a) A matter of finding out information on my own
- b) A matter of being given relevant information
- c) A matter of someone helping me to find new information
- d) A matter of being told what to do

PLEASE PEN ANY OTHER COMMENTS ON THE SPACE GIVEN BELOW. THANK YOU FOR YOUR TIME AND EFFORT.

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