

*Problem-Based Learning and the Adult Distance Education Student
in Hong Kong*

Margaret TAPLIN

May S.C.CHAN

CHU Wai Wan, Susanna

KWOK Siu Kuen, Peggy

Mabel LAM

Annie On Nei LEE

Angela LEUNG

Irene S.C. SIAW

The Open University of Hong Kong, Hong Kong SAR, China

Contact details:
Dr. Margaret Taplin,
Research Fellow,
Centre for Research in Distance and Adult Learning,
The Open University of Hong Kong,
30 Good Shepherd St.,
Hong Kong
e-mail: mtaplin@ouhk.edu.hk

Abstract

The purpose of this paper is to describe a series of small-scale action research projects to investigate some Hong Kong adult university students' feelings and beliefs about problem-based learning. The paper reports the outcomes of four projects, one with full-time students in face-to-face mode and three with part-time distance education students. Results of these projects suggested that students appreciated the opportunity for discussion with peers and the relevance of the tasks to the real world. However, some of their reflections raised the question of whether or not the nature of problem-based learning is compatible with the typical characteristics of the Chinese learner. The results of the projects indicated initial dependence on the tutor, concern with the quantity of learning more than with the quality of learning, worries about time constraints, and extrinsic motivation, all of which are characteristic of the Hong Kong tradition of learning but possibly not compatible with problem-based learning. Some strategies are suggested for addressing these potential incompatibilities so that problem-based learning can be a viable alternative in distance education in Hong Kong.

The rapidly changing needs of society, brought about in part by the impact of technology, mean that it is essential for more people to become better thinkers and problem solvers in order to function effectively in their daily lives. In addition to acquiring subject-specific knowledge, people need to be encouraged to develop their critical/analytic problem solving skills, and to develop the flexibility and adaptability to respond to change and to solve a range of unfamiliar problems. Professional survival in a number of occupations is very much dependent on people's willingness to examine their own practices in the light of developing theories about their particular disciplines and to modify their approaches to incorporate the best ideas from these theories and hence overcome the problems which arise from day to day.

In Hong Kong the 1997 Policy Programme of the Education and Manpower Bureau highlights this need:

The industrious and enterprising workforce in Hong Kong has been the most indispensable asset in Hong Kong's economic success story through the last century. The 21st Century will see the exponential development of information technology, and rapid shifts in competitive forces in the global market. These call for increasingly new skills and expertise for our labour force to cope flexibly with the dynamic demands of the labour market and the

economy both locally and internationally.

Problem Based Learning

With the growing need to promote students' abilities to reason and apply knowledge, the use of problem-based learning (PBL) approaches in higher education has increased during the past decade. There has been a considerable amount of literature that describes various models of PBL (Fogarty, 1997; Kemp, 1995; Kingsland, 1994; Ryan and Koschmann, 1994). The common feature of these models is that an initial problem or case study is presented to students as it would be to real practitioners of the discipline concerned. The students identify areas of skills and knowledge that need to be acquired and apply this to the situation to guide their studies. Thus, the learning that has occurred in working with the problem is integrated into students' existing bodies of skills and knowledge (Schiller, Ostwald and Chen, 1994, pp.301-302). The major difference between this and teacher-centred learning is that students have greater responsibility for generating their own learning issues (Dolmans, 1992).

There are, of course, some disadvantages to using problem-based learning, one of which is that it can be time consuming, particularly in early stages when

students are still uncertain how to go about the process (Edwards, 1997). Many lecturers have expressed concern about whether sufficient knowledge can be conveyed through a PBL format and whether students have sufficient prior experience to be able to benefit from the problem-solving situation (Trevitt and Grealish, 1994). Another concern is that when students are initially confronted with this approach many are suspicious about its value, particularly if they have previously been used to teacher-centred approaches (Ulmer, 1994; Felder and Brent, 1996). Nevertheless, research has indicated that students are usually more motivated to acquire knowledge in the context of solving a problem than they are if the content is delivered out of context (Idrus, 1993; Schiller et al., 1994). They are also more likely to be able to generalise that knowledge to new situations (Chappell and Hager, 1992). PBL approaches have successfully promoted higher-order thinking skills, such as analysis and synthesis (Idrus, 1993). Kemp (1995) reported that students were able to benefit from being able to apply and test the theory they had learned in real life situations. Furthermore, Schiller et al. (1994) reported that students seemed to think their long-term goals, including employment and success, are better met by PBL than by more teacher-centred approaches. Moreover, the advantages are not only to the students, there is also evidence to suggest that lecturers can be enriched by learning from the students' experiences and discoveries (Kemp, 1995).

PBL and the Chinese Learner

Recently PBL has been introduced into the university system in Hong Kong with considerable success. Nevertheless, some people still claim that a student-centred, time-consuming teaching approach such as PBL is doomed to failure in Hong Kong because it is so vastly different from the traditions of the Hong Kong learner - and particularly so with the adult part-time learner studying in distance mode. However, the challenge has been issued for distance educators to 'be seen as the first agents of change both in the way they design their courses and in the way those courses are delivered and assessed' (Dhanarajan, 1998, p.15). Schiller et al. (1994) have indicated the potential to integrate PBL and distance education successfully.

It is true that there appear to be some discrepancies between the nature of PBL and the generally held images of those adult learners whose formal education occurred at a time when the system closely reflected the traditional philosophies of Chinese education. One feature of this traditional mode of education was that it is 'firmly based on knowledge transmission with a single curriculum (often a single textbook). Making the curriculum relevant to everyday life has low priority' (Robinson, 1998, p.371). This is of course clearly inconsistent with the notion of PBL, which depends on situations being

presented in real world contexts. Another commonly acknowledged characteristic of traditional Chinese education is that students are passive learners, or "warehouses" for storing knowledge' (Robinson, 1998, p.371). Emphasis was traditionally on the content of a centrally controlled curriculum rather than on thinking skills and learning processes. The teaching approach was typically very teacher-centred, with the teacher seen as the source of information and 'success in learning often seen as the reproduction of what the teacher had taught' (Robinson, 1998, p.371). Students who were educated in this system were brought up in a long tradition that silent acceptance was the way to show respect to the teacher, whereas questioning was often interpreted as rudeness or a challenge to the teacher's authority (Robinson, 1998). These traditions have produced learning styles that may be at odds with the student-directed, enquiring and challenging nature of PBL. Furthermore, whereas PBL relies heavily on students' intrinsic motivation, traditional Chinese education was 'mostly driven by extrinsic motivation to learn (rewards of qualifications, social status and salary)' (Robinson, 1998, p.371). While it is clearly inappropriate to form stereotypes of all Chinese students as fitting this traditional model, it was commonly believed by the authors of this paper, all of whom are experienced educators of adult students in Hong Kong, that the majority of the students in their courses do reflect the characteristics of the system in which they received most of their formal education.

Furthermore, there are other potential incompatibilities between PBL and distance education in Hong Kong. Time is a massive constraint to teaching and learning from the early school years through university. There is pressure to cover the syllabus and achieve high examination results because this is seen as the only way to improve one's social and economic status (Cheng, 1998). Time constraints are particularly evident for distance education students, especially if they are in full-time employment and trying to cover the maximum amount of course requirements in the minimum amount of time. This again is at odds with philosophies of PBL that there needs to be time for discussion, reflection, and the location - by the students - of resources that can clarify the problem situation.

Given the discrepancies between the nature of PBL and the previous educational experience of the majority of Hong Kong distance education students, it is understandable that critics have doubts about its potential success. On the other hand, there is some convincing evidence that students who have been brought up in a traditional Chinese education system can adapt quite easily to student-centred approaches if they are in learning environments that encourage them to do so (Kember and Gow, 1991, Kember, 1998). In the series of projects described in this paper, it is acknowledged that we cannot suddenly change the adult learner's expectations of education that have been shaped by many years of experience - if in fact it is desirable to change them at all

- so we need to look at how they can be taken into account when designing non-traditional learning experiences such as PBL.

A research group at the Open University of Hong Kong (OUHK) has been exploring the role of PBL in the OUHK learning environment. One of the critical issues to be investigated is concerned with whether PBL can in fact be compatible with the needs and expectations of our students, and the factors that need to be considered if it is to be introduced successfully.

The Projects

Four projects, predominantly case studies, investigated students' feelings about problem-based learning. One of these, conducted by Margaret Taplin, was with a group of 28 mature-age student teachers studying full-time in face-to-face mode over a period of eleven weeks during which they kept reflective journals about their experiences of learning classroom management strategies through PBL. The outcomes of this project have been included in this paper to highlight several important insights about adult university students' perceptions and some useful points for comparison with the part-time distance education students. The other three projects were with adult students studying part-time in distance education mode. May Chan and Irene Siaw invited a group of Statistics students to express interest in attending a series of tutorials with a

PBL focus that were additional to the other tutorial provisions made in the course. Eight of the students who accepted the invitation were randomly selected to participate in the tutorials. Questionnaire and interview were used to collect evaluative data about the students' perceptions of the experience. Angela Leung, Peggy Kwok, Annie Lee and Susanna Chu also conducted a series of PBL tutorials with 44 students in a Chinese language course. Mabel Lam has been using a PBL-type approach to her tutor-marked assignments for several years in her Auditing course, in which students are given realistic work-based problems to solve as part of their assignments. She addressed the issues of whether her students really are self-directed as her approach assumes them to be, exactly what they think of the case study approach, and whether they believe it helps them to learn and retain the information more readily. In addition to this, she tried to elicit the nature of help that students typically seek from tutors in attempting their assignments and the extent to which tutors have had to modify their teaching approaches because of the problem-solving nature of the tasks. She asked students and tutors to reflect on their learning and tutoring processes in the course. The data were collected by questionnaire and interview. Seventy-seven out of a total of 121 students responded to the questionnaires, and three tutors were interviewed.

Of course, considering that these experiments were conducted in different discipline areas, by people with different levels of experience with PBL and

different course objectives, it was not possible to control for uniform PBL experiences. Nevertheless, in all cases, the following characteristics of PBL were applied:

- the tasks were designed to enable the students to learn something new that would contribute to at least one of the course objectives,
- the students were responsible for identifying what knew knowledge they needed in order to be able to resolve the tasks,
- the students worked together in small groups, during tutorial sessions, to find the necessary information and propose solutions,
- the tutors assisted groups as necessary by answering their questions and directing them to appropriate resource materials,
- the groups reported their solutions to the tutorial class and the class reflected on the learning that had occurred, with input from the tutor.

Results

There were several common issues that were addressed in all four of the projects. These included:

- how did the students react to the PBL experience?
- what were their reasons for reacting favourably or unfavourably?
- what strategies did they use or find useful?

- were there any incidents or events that caused them to change their feelings about PBL?

How did the Students React to PBL?

In Taplin's project, the analyses of the students' feelings about PBL indicated that there were three distinct groups. Firstly, there were twelve who were initially positive about the PBL approach and remained positive throughout the eleven weeks of the course. In the second group there were three students whose attitudes remained negative throughout the course. The third group consisted of eleven who started out with negative attitudes and became positive about the approach and about themselves as problem solvers as the course continued. Two students remained noncommittal about their feelings. It was interesting to note that there were no students whose attitudes changed from positive to negative.

In the data collected by Chan and Siaw, two of the students answered 'yes' to the questions 'Did you like the PBL approach in the tutorial?' while six answered 'yes and no', that is there were some elements they liked and some they did not. No students said that they disliked using the approach outright. When questioned further, all eight students said that their ideal tutorial would be a combination of PBL and lecture. The reason for this is that *[while] PBL*

is a good method for learning... [it is] time-consuming. A typical comment was that they preferred to have the lecture first because *it is important to understand the concept first before going too far [with the problem solving].*

In the data collected by Lam, between 42 and 69% of the students gave high or very high ratings to a series of statements that it is important for them to be self-directed learners. Overall, the students expressed the belief that the PBL approach in assignments was somewhat useful in their learning, giving its usefulness a mean rating of 3.47 on a scale where the highest rating was 5.

Leung et al. gave their students a questionnaire designed to measure their preferences for different aspect of conventional and PBL approaches using a five-point Likert scale. Seventy-seven per cent of the students rated their preference for learning through discussion as high to very high. They also said that they liked to get the answer for themselves using information given by the tutor and with some guidance from the tutor (92% rating this item high to very high). Only 38% rated tutor-centred delivery highly in facilitating their understanding and 23% rated high to very high for liking the tutor to simply give them answers without any discussion.

Reasons for the Students' Feelings about the Problem-Solving Approach

In the data collected by Chan and Siaw, one of the main positive comments about PBL was that the students found listening to lectures dull and not encouraging them to think. The value of learning through discussion with peers was another strong point in favour of PBL. Six of the eight students made comments to the effect that *I can think deeply about the solving method through the discussion*. In Taplin's project the value of peer discussion was mentioned unanimously by all of the 28 students. A typical comment was:

...we are now used to solving problems through group discussion, which we previously felt not quite useful. We find that we can learn from others by sharing ideas in groups and it is a good practice of giving opinions.

One of the main reasons given by students for disliking PBL was if they were unable to see the relevance of the problem to the real world. Lam reported that a number of students rejected the approach with such reasons as *too difficult* and *case is not the same format as the Accounting Association's professional exam question*. In the early stages of their course, many of Taplin's students dismissed the innovative teaching and classroom management ideas about which they were being asked to problem solve as being 'impossible' to implement in the real world:

Handling different ability students in one class is a difficult task for a teacher in real practice because of limited time available and

management problems. In my first sight everything seems to be impossible.

Conversely, the most favourable comments occurred when the students were able to appreciate the relevance of applying their PBL experiences to the real-world contexts of their current or future employment. Seven of Chan and Siaw's students mentioned that this real world application *motivates my learning...makes the learning not so boring*. Lam's students commonly commented that the cases were *practical* and *[helped them to] apply concepts in a real situation*. Taplin's students also reported that they felt more positive about their PBL experiences when they could see how their solutions could potentially be relevant to their future careers.

We do not feel the pedagogical problems are so uninteresting to solve now. We begin feeling that the tasks are quite practical and challenging to be coped with. It is because we perceived that those tasks will be very likely to occur in our future teaching. It is good for us to think of ways to cope with them before we start to teach. So, we are more willing to think and feel free to discuss.

I just did not understand what all these questions about being a problem solver had to do with my work in class and how they could

connect to my future teaching. Then I realised that for the past lessons, I had been given a lot of problem-solving tasks to do and I was actually learning through problem solving! And the most important of all, I realized that teaching was indeed a problem-solving career. For as teachers, we often have to use problem-solving skills to adapt to our classrooms. Knowing these were very important, for suddenly what I did in class became meaningful.

As mentioned earlier in this paper, adult students in Hong Kong are usually trying to balance multiple roles in their lives and are therefore very much pre-occupied with time, for example needing to cover the maximum amount of curriculum content in the limited time they have available. Chan and Siaw found that this concern about time was the major argument against using PBL in tutorials:

Some group members went too far from the main theme, sometimes it wastes time.

I am afraid the material coverage is not enough and not in depth and also the time is not permitted to do so. As we are distance learning students working full time, it is impossible for us to spend too much time in group discussion.

I like PBL but... I am afraid that course materials cannot be covered in full length due to time constraints.... worry the scope of the lecture may narrow down due to time constraints.

Similarly, their students expressed concern that they would not be able to receive the same quantity of learning if they were to use a PBL approach often:

I learned much less than the lecture form of tutorials because it takes more time. Some were also concerned about whether they would be able to grasp the concepts if PBL were used all the time: If the PBL were used for each tutorial, I would have difficulty to grasp the concepts of the course materials.

Inappropriate group dynamics were another reason given by some students for not liking PBL. A criticism recorded in the Chan and Siaw study was about group members who wanted to dominate the discussion: *A group member deviated too far from the main topic. He only spoke up from his point of view and ignored my point of view. Sometimes I don't even understand what he said.*

Another comment also reflected the importance of the group to the success of the PBL exercise:

I like PBL. However, it all depends who will be in your group. In fact PBL needs the joint effort from the whole group, i.e. all members must have finished their readings before the discussion. If none or only one member contributes to the discussion, then the discussion would become less useful.

Strategies and Approaches to PBL

One of the earlier mentioned concerns expressed by the authors at the outset of the project was the belief that the majority of their students would expect the teacher to be the authority whose role is to deliver the knowledge to the student recipient. This was evident in the data collected from the project, with students' reflections indicating learning strategies that showed dependency on the tutor. Taplin found that at first many of the students floundered, and had little idea how to go about solving the problems that had been posed for them. The journal entries of the students who started out with negative or uncertain reactions to the problem-based approach suggested that, at first, they did not like having to make their own decisions. They needed to be given quite a lot of guidance and direct questioning. One of the problems was that they lacked sufficient knowledge and experience to solve unfamiliar problems and it was at odds with their learning traditions that the tutor did not provide them with this knowledge. To ease this burden, the tutor provided them with sets of relevant

readings from which they could extract the required information, but at first they felt overwhelmed by these materials. They tended to spend most of their time reading the material, and little time in the decision-making process. It was only when the tutor suggested that they divide the labour, share the reading, and then report to the group on what they had learned that they became less bewildered by this break from tradition:

I was very glad that we could co-operate effectively in order to find out quite significant decisions. We shared ideas and found solutions together. On the other hand, the given materials also gave us a lot of ideas and suggestions in order to stimulate us to find out more methods and solutions. I think that it is a good progress for us to learn from the approach of problem solving.

Even though they were provided with these materials, there was still a reluctance to go and find their own supplementary materials and the suggestion was made that *the lecturer should bring a rich selection of books to class.*

Chan and Siaw also reported a strong dependency on the tutor:

I depend very much on the tutor's lecture.... I don't even really understand what the problem really asks. During the tutorials the tutor is able to explain to me what the problem is and how to tackle it.

As with Taplin's students, theirs relied heavily on the tutor to give them the materials needed to solve the problems. They said that they preferred this 'giving' to be done through lecturing, because they saw this as being the quickest, easiest way, and the way to which they were the most accustomed, of delivering the information they needed.

Dependency on the tutor was also reflected in the comments made by Lam's students:

I hope to [be provided with] the detailed answers for the tutorial questions. For practical reasons, I also prefer to have a lecture during tutorials. Lam hypothesised that her students seemed to have difficulties in identifying the 'problems' in the problem-based questions. Because the solutions cannot be 'found' in any of the study materials as they can with traditional questions, the students expressed uncertainty about their ability to select and address the right topics. Lam suggested that this may be because the learners are not completing the required readings in the study units before addressing the cases in their assignments, and thus not allowing themselves to be well-enough informed for confident decision-making. Both Lam and Leung et al. were told that their

tutors were unable to depend on their students doing independent preparation between classes for PBL activities.

In Taplin's study, the weaker students also indicated that they were directly dependent on the tutor in a different way, that is for feedback and reinforcement:

On the whole, I find I have gained more confidence after these few lectures by having positive feedback and encouragement. To be honest, sometimes we did not know what we were going to do. I found prompting and brainstorming by the lecturer were very useful when we were stuck.

One aspect of students' PBL strategies that was explored by Lam was the way in which they sought help from the tutor. The type of help that the majority of the students said they preferred was for the tutor to explain the requirements of the questions (cases), for example by giving *hints on assignments to avoid students going off on the wrong track* and *explaining how to structure assignment answers*. While some of Lam's students said that their preferred type of tutor help was in the form of more examples and more work-related experiences, others said they wanted less of this kind of help and more time for group discussion relating to the case study.

It was encouraging that both Lam and Taplin found their students' dependency on the tutor diminished over time. One of Lam's tutors reported that he had found the students became progressively able to tackle the problems more independently. Whereas he found that they were at a loss at first, he suggested that they were able to adapt and learn to handle the PBL approach better by the end. Typical comments from Taplin's students were:

We find that the more the tasks we have tried to solve, the more efficiently we can cope with the tasks. So now we find the problem solving easier.... learned that we must break through our traditional mind and be open-minded to accept new ideas.

Although I have to admit that I hate the workload of this module, I did learn from the assignments...learnt how to find information from the Internet. It's just fascinating. I got three site addresses from a Mathematics journal and tried to look at them. I never dreamt of anything like this before. I don't know how to express, I just think it's going to change my learning and teaching as well, a great lot.

Contrary to the authors' initial concerns, comments such as these are consistent with Kember's (1998) contention that students who have been brought up in

traditional Chinese learning environments are highly capable of student-centred, independent approaches to learning if the appropriate learning environment is created to encourage them to do so.

One strategy that was clearly important to the students involved in all of the projects is their need for frequent summaries or reminders of what they have learned. In the Chan and Siaw study, one of the respondents emphasised the importance of the conclusion at the end of the problem-solving exercise, which is important because *it helps me to recall the materials learned earlier*. In both the Taplin and the Chan and Siaw studies the students said that at the end of the session they liked to have something to take home, such as a copy of suggested solutions to the problem. The desire for something to ‘take away’ was also reflected in Lam’s interviews with her tutors, in which one commented that he feels students *need to feel they are getting ‘something of value’ before they will attend the class*. This appears to be a carry over from the traditional belief that the teacher is the one to provide ‘the answer’. In fact, several of Taplin’s students commented to the effect that: *.the main problem is that.... the solution we found out did not appear to be the most appropriate solution. I always await a perfect solution from my lecturer*.

Turning Points in Students’ Feelings

In Taplin's study, some attention was given to the factors that influenced students to become more positive about PBL. One significant turning point was when they recognised that negative emotions often associated with problem solving, such as uncertainty and confusion, are a natural part of the process:

For the second problem, I discovered that I began to adapt to the new approach. That process may be slow. But indeed, I gradually realized that it is natural to be unhappy or confused when we face any difficulties or obstacles. So there is no need to care too much.

The three students whose feelings remained negative were all locked into reflections about their negative emotions, even if they reported that they could see that they were learning something.

The students in Taplin's study who changed described a significant 'turning point' as being when they felt they had some success with a problem, for example by finding a solution that they thought would be 'workable': *I found that we would become happier when we could find a solution. The satisfaction in some cases seems to cover the initial unhappiness or frustration.* The problems that were challenging but solvable, rather than being either too easily solved or beyond their reach, were the ones they appreciated the most.

Discussion

The findings reported in this paper represented the first cycle of an action research project in which a group of researchers explored groups of Hong Kong university students' feelings about engaging in student-centred PBL and what 'critical incidents' contributed to any changes that occurred. The comments made by students in a conventional undergraduate university course and in distance education were noticeably similar in many respects, indicating some common concerns. In all of the projects described here, the majority of the students were positive about the knowledge and skills they had developed from the problem-solving activities but adamant that it should be a component of their courses, rather than the only approach.

There were some common patterns in the aspects of their PBL experiences that the students responded to positively. These are summarised below:

- opportunities for discussion and sharing of ideas with peers,
- achievement of success in solving problems that are challenging but within the students' reach,
- reflection on the new knowledge and skills that have developed during the problem solving, so they are aware that learning is taking place,

- recognition that the tasks are relevant to their current or future ‘real world’ needs.

Students in all of the groups studied also commented on the importance of receiving positive feedback from the facilitators and support to deal with their feelings of frustration and confusion when the problem-solving process became difficult.

As predicted, there were some tensions between the expectations of students and the nature of PBL. Not all of these were unique to adult students or to Hong Kong students. For example, as mentioned earlier, studies in other settings have also reported students’ early suspicions about the value of PBL. Nevertheless, the tensions could well be greater for these adult Hong Kong students because of their educational traditions and competing demands on the time they can devote to their studies.

One obvious issue was that of students’ dependence on the tutor. In the early stages of the PBL projects, the students still showed a clear preference for relying on the tutor to deliver knowledge, consistent with the authors’ expectations, but became less dependent as they experienced some confidence and success.

In all of the projects, there was a suggestion that the students were more concerned with the quantity than the quality of what they were learning. The implication of this is that problem-setters and PBL facilitators need to make certain that the problems are structured in such a way as to bring out the same quantity of knowledge as the lecture would, and that the students know what they have learned and can see this in relation to what they would learn in a lecture. A further implication is that the conclusion of the PBL session is most important, as a summing up of the knowledge that has been learned and to enable students to feel that they have 'something to take away' from the experience.

A common characteristic of our students is their concern with time, and this is understandable considering the pace of life in Hong Kong and the multiple roles they face as adult learners. Students expressed concerns that with PBL they might get 'off track' and 'waste time'. Therefore the facilitator's role is quite critical in judging 'how far' to let them go 'off track' in their learning before suggesting a change of direction. It also appears to be important for them to know and trust that the tutor is going to help to keep them from wasting time by getting too far off track, so that they will have more confidence in trying their ideas. Further, because of this concern about time it is probably a good idea to incorporate some of the information in a lecture

format. However, tutors can learn how to use the lecture effectively as a resource after the students have identified the information they need to obtain.

The outcomes of the projects reported in this article have indicated that there are some potential mismatches between the typical educational expectations of the students and the characteristics of PBL approaches. For the adult university student, particularly the part-time one who is trying to balance study with many other commitments, these mismatches can sometimes make PBL a difficult or even undesirable experience. However, the researchers' experiences with various groups of students have suggested that, with some acknowledgement of and catering for these differences, it is still possible to use PBL successfully with Hong Kong students, even in adult distance learning environments.

References.

Chappell, C. & Hager, P. (1992). 'Problem-based learning and competency development', paper presented at the Australian Association for Research in Education/New Zealand Association for Research in Education Joint Conference, Deakin University, Geelong.

Cheng, K. (1998). 'Information Technology, Culture and Quality Education: New Challenges', keynote paper presented at the Hong Kong Educational Research Association Annual Conference, Hong Kong.

Dhanarajan, G. (1998). 'Access to Learning and Asian Open Universities: In Context', plenary address presented at the 12th Annual Conference of the Asian Association of Open Universities, Hong Kong SAR, November 4-6.

Dolmans, D. (1992). 'The relationship between student-generated learning issues and self-study in problem-based learning'. *Instructional Science*, 22 (4), pp 251-267.

Felder, R. & Brent, R. (1996). ' Navigating the bumpy road to student-centred instruction'. *College Teaching*. 44 (2), pp 43-47.

Fogarty, R. (1997). 'Problem-based learning and other curriculum models for the multiple intelligences classroom'. ERIC Document No. ED405143.

Idrus, R. (1993). 'Collaborative learning through teletutorials'. *British Journal of Educational Technology*, 24 (3), pp 179-184.

Kember, D. & Gow, L. (1991). 'A challenge to the anecdotal stereotype of the Asian student'. *Studies in Higher Education*, 16 (2), pp 117-128.

Kember, D. (1998). 'The Learning Experience of Asian Students: A Challenge to Widely-held Beliefs', plenary address given at the 12th Annual Conference of the Asian Association of Open Universities, Hong Kong.

Kemp, S. (1995). 'Innovation in teaching case studies in tourism management. In A. Zelmer (ed.). *Higher Education: Blending Tradition and Technology. Proceedings of the 1995 Annual Conference of the Higher Education and Research Development Society of Australasia*. HERDSA, pp 434-513.

Kingsland, A. (1994). 'Broadening the base and deepening the understanding in problem-based learning'. *Proceedings of the Australian Association for Research in Education 1994 Conference*.

Robinson, B. (1998). 'Asian learners, Western models: Some discontinuities and issues for distance educators'. *Proceedings of the 12th Annual Conference of the Asian Association of Open Universities, Hong Kong*. Part III, pp 370-375.

Ryan, C. & Koschman, T. (1994). 'The collaborative learning laboratory: A technology-enriched environment to support problem-based learning'. ERIC Document No. ED396678.

Schiller, J., Ostwald, M. & Chen, S. (1994). 'Implementing a problem-based, distance education undergraduate course in construction management'. *Distance Education*, 15, (2), pp 300-317.

Trevitt, C. & Grealish, L. (1994). 'Learning to crawl: Development of problem-based learning as a teaching strategy', in M. Ostwald. & A. Kingsland (eds.). *Research and Development in Problem Based Learning*. Newcastle, Australia: The University of Newcastle, pp 307-314.

Ulmer, A. (1994). 'Overcoming problems with problem based learning expectations'. in M. Ostwald. & A. Kingsland (eds.). *Research and Development in Problem Based Learning*. Newcastle, Australia: The University of Newcastle, pp 315-327.