

**PROBLEM-BASED LEARNING IN HONG KONG: AN INFUSION APPROACH
TO LANGUAGE DEVELOPMENT AND PROFESSIONAL STUDIES**

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ABSTRACT

Hong Kong's current educational reforms - encapsulated in the phrase *Lifelong Learning* (Curriculum Development Council, 2000) - encourage the infusion of Problem-based learning (PBL) with 'traditional' methodologies. Four case studies and a theoretical critique illustrate PBL infusion to be practical, theoretically sound and cost effective.

PROBLEM BASED LEARNING – DEFINITIONS

Problem-based learning (PBL) exists under various definitions ranging from the abstract of Biggs & Moore, (1993) "Learning declarative and procedural knowledge in a context that has defined a need for that knowledge" to the comprehensiveness of Fogarty (1997), "PBL is a curriculum model designed around real-life problems that are ill-structured, open-ended, or ambiguous. PBL can be applied across the entire curriculum." Within Asia, proponents of PBL voice a more pragmatic centralist definition –such as Tan (2003) "PBL is a progressive active learning and learner-centred approach where unstructured problems are used as the starting point and anchor for the learning process". This centralist view – as reported here from Hong Kong - allows for an infusion of PBL and 'traditional' methodologies.

THE HONG KONG CONTEXT

The infusion of teaching methodologies is historically as alien to education in Hong Kong as it is globally (Papa and Harasym, 1999). However a sea change within education is detectable - marked in 2000, by Hong Kong's Curriculum Development Council's promotion of 'life-long-learning'.

Reflecting this evolving context, this Paper reports on an infusion approach to PBL within two initial teacher-training contexts: first as applied to the English language development of undergraduate teacher trainees; second, as applied to the professional training of post-graduate teacher trainees.

RESEARCH METHOD

Evaluating the infusion of PBL with 'traditional' teaching methods presents a challenge – is it possible to isolate the impact of each method? To address this issue, at the end of each session students were asked to evaluate their learning in a feedback situation that elicited comparisons between learning modes. As is customary in Hong Kong teacher training, mid and end term anonymous questionnaires were completed by all participants. Taken in conjunction with the instructors' own regular observations and interactions with

the participants, it was felt that a balanced and informed picture was obtained by these three combined methods.

1st Case Study: Bridging between Task-based & Problem-based learning.

As part of their language-learning portfolio, all first year B.Ed undergraduates (N=35) completed individual presentations on the common theme '*learning to learn*'. As these participants had no prior PBL experience, they were offered three options.

A task-based option invited participants to reflect on gender-learning differences. Clear scaffold-support was provided involving the replication of a classroom-gender-attention exercise reported elsewhere (Forrester, 1997). Through scaffold-replication, individuals were fully supported in their presentations.

A second option – entitled "*How do I learn?*" - involved pairs of participants becoming mirrors/reporters to each other's classroom learning behaviour. Here the data collection comprised scaffold-replication of classroom observation combined with ethnographic, open-ended response interviews that produce by definition unpredictable results. Accordingly this pedagogy is characterized as a bridging between Task and Problem-based learning.

The third option provided only the title "*Moving from Secondary to Tertiary education*". Given this title, participants were then free to evolve their own research questions, to seek and trial their own research methodology. This third option provided learning characterised as being problem based.

Participants were free to choose any one of these three options.

Findings

Of the three options, the PBL-mode assignment proved most popular (Task 10%; 'bridge' 26%; PBL 64%). Student feedback and instructor observation revealed that the 'PBL' students displayed notably higher 'learning-energy' – the PBL 'tutorials' were vibrant rather than passive; PBL peer-work was truly interactive rather than conspiratorial. A testimony to this 'learning-energy' is the quality of learning 'product' - the PBL students successfully presented their research findings on "*How do incoming students adapt to study at the HKIEd?*" at the International Conference on Teacher Education Development Conference (Hong Kong, 1999).

2nd Case Study: Problem-based language development.

A second case study involved participants of the Bachelor of Education (Add-on). These participants are both chronologically more mature and academically more advanced than the participants in the first case study.

Participants (N=28) were required to formulate their own research Proposals and within one Semester, to carry their Proposal from inception, Library search, instrument design,

implementation, data analysis through to a final oral presentation and final written Report.

In a semester comprising thirteen teaching weeks, scaffold-learning support comprised three lectures - research methods, library search and report-writing conventions - time tabled in teaching week 1, 4 and then 8. The remaining eleven weeks comprised self-selecting groups, reporting their progress back to the whole class.

Groups were encouraged to recognise that by actively critiquing each other's Projects they learnt how better to develop their own research. These critiques had twin foci: first, to heighten learner's awareness that research decisions required to be defended; second, to provide an analysis of the language skill(s) employed within each class meeting -in this context, re-drafting was not seen as an 'error' rather than an essential part of self-progress both as a researcher and as a language learner.

Findings

Student feedback and instructor observations noted that the class rapidly divided into two groups - a marginally larger 'active' group and a resolute if smaller 'passive' group.

A survey revealed the 'active' group to comprise highly focused participants, enrolled in this programme with the specific target of rapidly up-grading themselves. In contrast, the 'passive' group comprised participants who opted for this programme having failed to find a teaching post.

Given such findings it is tempting to surmise that under a PBL regime low motivated participants can find themselves over-exposed. However correlation is not causation as the third case study serves to illustrate.

3rd Case study: English language Problem-based learning and 'low achievers'.

A third case study involves the final intake of the Certificate (Primary) programme in 1999-2000. This may seem an unpromising venue in which to promote PBL – the final intake suggests a programme that is 'running-down' and the 'Certificate' programme was predicted to attract only those participants who failed to enter the concurrent degree programme. Despite these gloomy predictions – and perhaps rather foolhardily – a decision was taken to present part of a first year teaching module (Introduction to Literature) in PBL mode. The decision to trial PBL within a literature module in itself may seem revolutionary for literary transmission perhaps is traditionally an inductive process. With these three counter elements - a programme that is 'running down', presumably low-motivated students and the subject content literature - surely the use of PBL must fail?

The PBL approach provided minimal scaffolding - participants participated in a drama workshop (duration: 4 hours). Participants were then presented with a drama script, which they were required to perform to an audience of HK Primary (P5-P6) pupils. All matters such as staging, costumes, rehearsals, interpretation, time-management, liaison

with Schools, video-recording etc were the responsibility of the module participants.

In tandem the same participants were taught the remaining parts of this module (Introduction to Literature: Poetry and the Novel) by 'traditional' teaching methods.

Findings

The participants' response was remarkable - appraisals of the 'traditional' teaching methods were positive and appreciative; appraisals of the 'drama' PBL component were excessive. For example: their 'learning-energy' extended well beyond the allocated class hours; costumes were paid for by self-generated funds; school-based performances involved not one but two HK Primary schools.

A second indicator of this PBL excessive appraisal cites these same students being invited to make a third performance as part of an 'Open Day' celebration. Despite a lapse of eight months, all the participants volunteered and again performed to an obviously enchanted Primary-school audience – a performance entirely rehearsed and prepared by themselves. This feat indicates something of the longevity of Problem-based Learning.

Having considered PBL applied to the context of undergraduate English language development, the following considers a second context where the teacher trainees are post-graduates and the application of PBL is to their professional studies.

4th Case Study: infusing PBL and professional studies.

This case study considers the professional study of Educational Psychology within a Post Graduate Diploma of Education (Full & part-time) programme. Here the infusion of PBL with 'traditional' teaching methodologies was achieved progressively. At the start of the term, 'traditional' teaching methodologies were followed by a review of a related case study. By the middle of the term, participants first reviewed the case study then sought (by asking questions of the instructor) the underpinning psychological insight. By the end of the term, participants were required to challenge each other with self-generated case studies.

This progressive infusion of PBL was applied to both full-time (N=28) and the more school-experienced part-time (N= 25) students of the Post Graduate Diploma in Education programme at Hong Kong Baptist University. Both groups were taught and observed by the same instructor.

Findings

Full-time (less experienced) student responses were marked by three challenges associated with internalising 'subject learning' – first, of identifying 'key' problem(s); second, of connecting theory to practice and third, offering practical solutions. These three challenges required extended time for 'group discussion' and inhibited their production of 'advice'. For students with no prior teaching experience, such delays are perhaps predictable. However as the teaching term progressed, these students produced a

marked ability-growth, witnessed by the production of increasingly fluent and in-depth responses.

Part-time (more experienced) students focused on the 'technical' vocabulary of educational psychology. Their discussion centred on a common struggle to explicate their own teaching experience in terms of (to them) this 'new' subject-specific vocabulary.

This evidence suggests that PBL can address different students' learning needs.

PBL INFUSION: A SUMMATION OF FOUR CASE STUDIES

Four case studies of PBL infusion have been presented. The first case study indicated that PBL may appear to be a pedagogy of choice for some students (64% selected a PBL option). The second case study suggests that perhaps PBL may over-expose learners who have 'low motivation'. However the causation of this correlation is confounded by the third case study where 'low-motivation' students not only fully embrace PBL but also display something of the longevity of learning under PBL. A fourth case study applied PBL infusion to post-graduate teacher trainees and their professional studies. This fourth case study demonstrated that PBL could address different students' learning needs.

Such findings suggest that the infusion of PBL alongside 'traditional' methodologies is possible, productive and – like all methodologies – prone to variable results.

The following now seeks to locate the findings from these four case studies within a theoretical framework. To provide this theoretical framework two critiques of PBL are considered: first, a critique of PBL and theories of language development; second, a critique of PBL and professional studies.

A CRITIQUE OF PBL AND THEORIES OF LANGUAGE DEVELOPMENT

There is common agreement (Candlin, 1987; Nunan, 1991; Kumaravadivelu, 1993; Ellis, 1997; Esch, 1997) that language development involves the following five elements:

- developmental process
- process of negotiation
- decision-making process;
- meaning-focused activity;
- multi-linear process

The critique that follows now considers each of these five elements in terms of evaluating PBL's contribution to language development.

Language learning as a developmental process

Integral to PBL is learning through group work. As demonstrated in these case studies group work errors made are not just tolerated but recognised as an integral part of

language development. Within the observed group work, there is additionally a dynamic interplay between empathy (of a common challenge) and lowered inhibition (of working with peers) that mobilises participants' linguistic resources, culminating in their attainment of self-selected goals. Self and peer language development is inherent in PBL group work.

Language learning as a process of negotiation

PBL can free participants to negotiate individual learning routes. For language learning, the importance of such negotiated learning routes has been demonstrated by Esch (1997) and Sadovnik (1995).

Language learning as a decision-making process

Decision-making has been identified as a characteristic of efficient language learners (Rubin and Thompson (in Nunan, 1991). Inherent within PBL is the positioning of the learner as 'decision maker', a role intensified in PBL by aligning personal responsibility with this decision-making process.

Language learning as a meaning-focused activity

Meaning-focused activities are defined as those in which '*learners are preoccupied with the process of understanding, extending or conveying meaning*' (Kumaravadivelu, 1993, p. 78). In other words where language is the means to express intentions and feelings – as in the third case study- the undertaking is considered fulfilling in both experiential and linguistic terms.

Language learning as a multi-linear process

For socio-linguistics '*language is not an organism or a passive reflection, but a social institution deeply implicated in culture, in society, in political relations at every level*' (Joseph & Taylor, 1990). Translated into the context of PBL, the language learner requires and develops from being exposed to multi-linear language use.

In summation, PBL would appear to be supportive of language development both at a theoretical and case-study levels.

A CRITIQUE OF PBL AND PROFESSIONAL STUDIES

Three concerns emerge from current work on PBL for initial teacher training:

- Does PBL enhance student learning and motivation?
- Is PBL appropriate to an educational study of child development?
- Is PBL cost-effective?

(Mc Phee 2002)

These three concerns are now considered within the fourth case study where PBL was infused into the professional study of Educational Psychology for initial teacher training.

Does PBL enhance student learning and motivation?

The fourth case study displays both full and part-time students being ‘fully engaged’ and accordingly would appear to support the view that PBL enhances student learning and motivation (Blake et al 2000). However a comparison between the two student groups – where ‘engagement’ varied in range and focus – suggests that, as is common across various methodologies, the interaction between student learning and motivation remains complex and unpredictable.

Is PBL appropriate to an educational study of child development?

Concerns have been voiced that problematising educational issues may be inappropriate for initial teacher trainees – the rationale being that such problems may be taken as promoting a deficit-based approach to education (MacKinnon et al 1997). Such concerns are not raised within this Hong Kong case study – an absence that perhaps highlights the role of cultural values. What is perhaps common across cultures is the perception by inexperienced trainees of their classroom as a ‘problem-based-environment’ and of the initial-trainee teacher as having the most exposed persona. Given this perspective, problematising educational issues may be seen as voicing these initial-trainee teachers’ concerns.

Is PBL cost-effective?

Concerns with cost implications are predicated on the implementation of PBL as an exclusive methodology (Norman & Schmidt 2000). As the case studies illustrate, infusing PBL with ‘traditional’ methodologies appears to bear no additional financial implications. Given the growing significance of financial constraints within educational communities, the future of PBL as an infusion rather than exclusive methodology, may appear a way forward.

CONCLUSION

Four case studies have illustrated the infusion of PBL across both language development and professional studies. The findings have then been located within theoretical frameworks that support such PBL applications. Within the larger context of ‘*lifelong learning*’ the infusion of PBL with ‘traditional’ methodologies appears to be practical, theoretically sound and cost effective.

REFERENCES

- Biggs, J. B. and Moore, P.J. (1993). *The process of learning*. New York: Prentice Hall.
- Blake, R.L. Hosokawa, M.C. and Riley, S.L. (2000). Student performance on Step 1 and Step 2 of the United States Medical Licensing Examination following implementation of a problem-based curriculum. *Academic Medicine*. 75(1) 12-23.

- Candlin, C. & Dermot, M. (Eds.). (1987). *Language learning Problem*, Englewood Cliffs, NJ: Prentice Hall.
- Ellis, R. (1997). *SLA research and language teaching*. Oxford: Oxford University Press.
- Esch, E.M. (1997). Learner training for autonomous language learning. P. Benson & P. Voller, (Eds.), *Autonomy and independence in language learning* (pp. 164 – 175). London: Longman.
- Fogarty, R. (1997). *Problem-based learning and other curriculum models for the multiple intelligences classroom*. Melbourne: Hawker Brownlow Education.
- Forrester, V. (1997). The Challenge of Gender-bias Reform: A case study of teacher trainees in Hong Kong. *Asian Journal of English Language Teaching*, 7, 113-120.
- Joseph, J.E., & Taylor, T.J. (Eds.) (1990). *Ideologies of language*. London: Routledge.
- Kumaravadivelu, B. (1993). The name of the Problem and the Problem of naming: methodological aspects of Problem-based pedagogy. In G. Crookes & S.M. Gass (Eds.), *Problems in a pedagogical context: integrating theory and practice* (pp. 69 – 96). Clevedon: Multilingual Matters.
- MacKinnon, A. and Scarff-Seater, C. (1997). Constructivism: contradictions and confusions in initial teacher education. In V. Richardson (Ed.), *Constructivist teacher education: building a world of new understandings* (pp. 53-62). London: The Falmer Press.
- McPhee, A.D. (2002) Problem-based learning in initial teacher education: taking the agenda forward. *Journal of Educational Enquiry*, 3(1), 60-77.
- Norman, G.R. and Schmidt, H.G. (2000). Effectiveness of problem-based learning curricula: theory, practice and paper darts. *Medical Education*, 34, 721-728.
- Nunan, D.(1991). *Language teaching methodology*. London: Prentice Hall.
- Papa, F. and Harasym, P. (1999) Medical curriculum reform in North America, 1765 to the present: a cognitive science perspective. *Academic Medicine*, 74(2), 154-164.
- Sadovnik, A.R., (1995). Basil Bernstein's theory of pedagogic practice: a structuralistic approach. In A.R. Sadovnik (Ed.), *Knowledge and pedagogy: the sociology of Basil Bernstein* (pp. 3 – 35). Norwood, NJ: Ablex Publishing Corporation.