Title	The application of Problem-Based Learning (PBL) in counselling: Some findings of a pilot study
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THE APPLICATION OF PROBLEM-BASED LEARNING
(PBL) IN COUNSELLING: Some findings of a pilot study

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Introduction

In the Problem-based Learning (PBL) approach, the problem scenario and scaffolding help learners develop cognitive connections. The use of problem scenarios (cases) is one of the most effective ways to develop problem-solving acumen and competencies in counselling practice. When one is engaged with a problem case the cognitive and meta-cognitive processes include: problem clarification, problem definition and reframing, problem analysis and problem summary and synthesis.

The authors had a pilot project in using PBL in training of school counselors. First group was the second intake of the NIE Diploma in School Counselling (DSC) for the Full Time School Counselors (FTSC) in end December 2005. There were 40 participants in this class and 10 sub-groups (4 each group) were formed to discuss a problem scenario in class. And then they were given a guideline to go through group work and class presentations in the Module "Working with Systems" (a 36-hour course). In general, their feedback was positive and encouraging. They really benefited from the self-regulated learning, reflection and peer teaching in small groups.

This new approach in problem analysis and solving was subsequently used in the training of teachers who had an interest in career counseling and guidance, and enrolled in the M.Ed. module "Career Development and Guidance: Trends and Issues" in January 2006 semester. This 39-hour course had two classes (groups): Thursday evening class at NIE main campus and the Saturday morning class at NIE Townsville Campus. Same as the FTSC group, they were given a lecture before the formation of sub-groups (4-6 each group). The feedback and outcomes of these participants' group presentations on PBL in problem analysis are presented in this paper.

Problem-Based Learning (PBL) Approach in Problem-solving

The use of problem scenarios (cases) is one of the most effective ways for developing problem-solving acumen and competencies in counselling practice. When one is engaged with a problem case the cognitive and meta-cognitive processes include: problem clarification, problem definition and reframing, problem analysis and problem summary and synthesis (Tan, 2004). Effective problem solving in the real world involves the harnessing of cognitive processes such as:

- "planful" thinking (taking time to think and planning)
- generative thinking (coming up with ideas and taking multiple perspectives)
- systematic thinking (being organized, thorough and systematic)
- analytical thinking (classifying, logical analysis and inference)
- analogical thinking (applying similarities, patterns, parallel and lateral thinking)
- systemic thinking (holistic and helicopter thinking)

Like real world situation in the Problem-Based Learning (PBL) approach problems are designed in such a way that additional data and information are given only when students ask for them. In other words, the "hypertext" has to be identified and asked for. Further information will be supplied when students ask for it. For example one may need to learn to ask good questions to obtain a clear picture of the client's background and history.

Connectivity in Thinking

PBL processes and coaching involve getting the mind to make connections through reflection, articulation and learning to see different perspectives (Tan, 2005). In the PBL process, the problem scenario and scaffolding help learners develop cognitive connections. Having obtained more data and new information, students need to apply analytical thinking skills, such as comparing, classifying, logical thinking and inferential thinking. Good analytical thinking involves not only logic but also knowing when we have to interpolate and extrapolate.

In his book *Reasoning and Thinking*, Manktelow (1999) noted that a substantial amount of psychological research supports the observation that bias and error in human reasoning are widespread. Jonathan Evans and his colleagues (2002) found in a study of undergraduates that in problem solving there is a tendency for people to focus on a single hypothesis. People also have a tendency to have what he termed "pseudo-diagnostic" response, rather than diagnostic response, based on their background and belief. Evans gave the following example: Suppose a patient has symptom S and the fact is that symptom S is present in 95 per cent of people suffering from disease X. Jumping to the conclusion that the patient is likely to suffer from X without further probing constitutes weak reasoning. Whether the patient is suffering from X would in fact be dependent on at least two further questions: (1) the prevalence of X relative to other diseases and (2) the likelihood of S being present in other diseases.

Our point is that there is a need to emphasize the learning of problem solving through facts and rationality. The PBL process help develop flexibility and helicopter views by enhancing connectivity in a dynamic way (Tan, 2003). Enhancing connectivity in thinking includes:

- connecting with prior knowledge
- connecting with prior experiences
- connecting with the real-world context
- connecting with theories

- connecting with other people's perceptions
- connecting with new facts and ideas

In counselling where the helping process involves building a relationship and facilitating positive action it is important to develop good connectivity in thinking. Brammer, Abrego & Shostrom (1993) listed, for example, the kinds of connective thinking needed in the interview process of working with a client. These include connecting to self-perception, needs, values, feelings, experiences, expectations and expertise on the part of both the helper and helpee.

The Problem-Based Learning Cycle

One way of looking at thinking using a refinement of the information processing model is the 3Cs approach: (1) collecting information, (2) connecting information, and (3) communicating information (Tan, 2003).

Lapses in reasoning and good thinking can occur in any of these phases of information processing. The practice of scanning the information field, paraphrasing, dialogue, peer critique, and articulation in PBL helps sharpen thinking in collecting, connecting and communicating information.

The Problem-Based Learning (PBL) cycle also includes:

- acquisition of new information (following self-directed learning)
- new iteration of problem analysis
- problem solution
- review and evaluation of solution

PBL Approach in Counselling Practice: Case Analysis Exercises

The scaffolding structure (list of questions) adapted from Tan (2003) and Alavi (1995) was used in the PBL case study (see Appendix 1). The PBL case scenario (Tan & Lui, 2006) used in the first group of this pilot study (FTSC) was:

> "Jack Thio, 13 years old, in Secondary 1 Normal Academic, was sent to see the School Counsellor for being rude to the Chinese Language teacher. He is handsome and speaks English very fluently. He passed all subjects in primary 6 except Chinese Language. He is an idol in his class and often gives treats to them.
>
> At home, being the only male offspring in the family, Jack's grand parents supervise his mother to serve him like a prince and make sure his needs are met. His father, English educated, stays in a neighbouring country to look after the family business. His mother came from China some 14 years ago, speaks Mandarin and dialects. The grant parents used to engage private tutors for Jack but none of them could stay more than a month."

Some of the hypotheses based on the questions generated in the PBL group discussions were as follows:

- Jack's mother being put down by grandparents implies a lower status of Chinese Language.
- Jack perceives learning Chinese as "low-class": issue of self-esteem and identity.
- Jack doesn't see the need of learning Chinese. Probably will inherit family business, thus no need to excel academically. Role model provided by successful English-speaking father.
- Jack's emotional needs were not met at home: manifest as negative behaviours in school.
- No clear parental authority at home, supervision left to grandparents. Mismatch with school system and expectations.
- Idol status in school reinforces his negative behaviour (already present at home).
- Jack has an attitude problem-frequent change in tutors at home.

In the January 2006 M.Ed. module "Career Development and Guidance: Trends and Issues", there were two classes, 17 and 29 participants each. The first group had 3 PBL sub-groups and the second group has 6 sub-groups. The case scenario used was:

When the January Semester commenced, Barry Soh, a JC Year II student, sought help from the Maths tutor Mrs Tan in education and career planning. He couldn't make up his mind to get a job, or go to Poly or University. He has above average grades in his former years of schooling. During school holidays he worked in a fast food chain to earn some pocket money. He has not gone thro' any vocational / career assessment, but he has showed leadership quality in project work and service-learning (community service) activities.

Two years ago, his parents' trading company went into cash flow problems and eventually closed down. They switched to an on-line office support business and work from home. Barry said he would like to earn some money to help his parents rather than being a burden to them.

His elder brother, Arthur, an old boy of this JC, has a B.Soc.Sc degree but is not gainfully employed. He doesn't like to join the education service because he thinks he wouldn't be able to take the stress. His friends told him teaching in primary school is a very demanding job. His occupational interests are Social, Enterprise & Conventional (re: *J. Holland's* Six Types of Occupational Interests) and his strengths are Intrapersonal, Interpersonal & Naturalistic (re: *H. Gardner's* Eight Multiple Intelligences).

Some of the hypotheses generated in the M.Ed. module PBL group discussions were:

- Arthur is unsure of himself and his abilities, doesn't know what he wants and also has no life goals.
- Barry is concerned about the financial situation of the family, and indecisive of his career plan.
- Barry cares for his parents and elder brother, but has no idea of their perception or expectation of his career future.
- The holiday work experience in a fast food chain has offered Barry another option in his life plan.
- Barry is interested in exploring the poly courses.
- Arthur's 'joblessness' makes Barry 'rethink' about getting a degree.
- Barry is going through the exploration stage of career development.

Theories cited by the various groups in their presentations were mainly A. Maslow's Hierarchy of Needs, D. Super's Self Theory, E. Erickson's Identity Crisis, J. Holland's Typology Theory, W. Glasser's Choice Theory, and E. Berne's Transactional Analysis.

Participants' feedback in the PBL Process

Towards the end of the course, participants shared their feedback and reflection in the group presentations to their own class. The presentation including a brief description of the case scenario, questions and hypotheses, links to theories and prior knowledge, suggestion for problem solving, action plan and reflection on their learning process in using the PBL approach. The feedback and reflection on their learning process are summarized as follows:

(1) The simulated learning has enabled us to walk through the steps when handling a counselling case: defining the problem, generating questions & hypotheses, reviewing literature, reviewing hypotheses, working on an intervention plan…

- Systematic multi-disciplinary approach to problem, avoid hasty conclusions.
- Systematic analysis of problem using supporting theories.
- Improve skills in perspective taking, look at problem from different angles.
- Be truly objective so as not to take sides, and suggest appropriate intervention based on objective evidence.
- The process of PBL has taught us to not draw conclusions without fully analysing the problem, do not accept things at face value, and gain deeper insights to the presenting problem. Helps us understand the problem better. Tedious process BUT useful.

(2) The problem-based learning process allows for self-directed learning and peer teaching which can also be applicable when working with clients or students. It also allowed learners to raise good probing and thought-provoking questions.

- Using the hypotheses will allow for the counsellor to explore beyond working with the client. In order to come up with the various hypotheses, counsellor must be aware of his or her bias, "own baggage" or stereotype perceptions in order to create the space to come up with objective hypothesis.
- Working through the processes allows a clearer understanding and appreciation of each stage.
- Working in the group encourages the articulation of each other's thoughts and more ideas are generated. When everyone contributes, it helps a lot more with the analysis.
- The frequent meetings help keep check on the direction of the group and monitor progress.
- Having to list all tentative hypothesis and regular review reminds us to be open to all possibilities and promotes receptivity to the issues presented.
- Acquainted to a structured approach to problem solving strategies.
- Awareness of limitations of theory to real world situation. Realism is engaged.
- Identify many possible resources and theoretical bases before making any recommendations.
- Trouble shooting and doing research to understand the problem and formulate possible solutions.

Conclusion

In conclusion, this pilot project has received favourable feedback, which means PBL did function well in facilitating the learning and thinking processes in problem analysis and solution. It has enhanced the learners' capacities in facing (meeting) the problem, fending for questions and hypotheses, finding more facts and theories, 'fan-up' more solutions, 'fuel-up' more resources and so on. Finally, "fear not" and " no failure" because there is no test, examination or formal assessment. The authors agreed that the participants of these three classes should be relieved from the pressure of assessment, so that they could really have a pleasant commencement of their life journey of using PBL in counseling practice.

Acknowledgements

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Appendix 1 - PBL Scaffolding Structure (Tan, 2003 and Alavi, 1995)

Problem Identification and Analysis	Some useful prompts
What is the background to the problem? What happens? Is there a 'problem'? Whose problem'? Is it urgent? Important?	Understand the scenario accurately and comprehensively What are your thoughts on this scenario? What comes to your mind? What do we know? What are the statements of facts we can identify? What do you think about that statement in the case? Do you have any idea about the situation? Could you explain what could have happen…?

What is the situation and state that is in need of improvement	analyse the information identify cues what further inquiry What can we make out from the information? What additional information might we need? What do we need to know? Can we know for certain . . . ? Could you think of anything else? What does that link you to? Have you considered all the possibilities?
What are your possible explanations for these situations? What may be the source(s)/cause(s) of the problem?	list tentative hypotheses.
What do you need to know in order to confirm or reject these explanations?	list what you need to know what are your learning needs?
Where might you find what you need to know?	identify possible resources: case files, consultation w/ colleagues, people related to the 'case'. seek more knowledge / information from books,videos, library, persons w/ experience (peers, trainer) etc
How will you best organise yourselves to discover what you need to know?	determine resources to be pursued plan your group's activities for self- directed study decide how you will share this information with your group
Will the knowledge you have gained enable you to accept, reject or hold hypotheses in order to make clinical judgements?	review hypotheses
What is the best way of acting on your case analysis and judgement?	Develop an action plan : • identify goals • identify ways to achieve goals • identify ways of reviewing your plan

What do you think you have learned by working through this problem case?	What are three key things you have learnt about the problem? What did you learn about yourself and your peers? What did you learn about your problem-solving approaches? What did you learn about your independent learning? How different would it be if . . . ? What other sources and counterchecks do you have? What solution might you propose to meet the following criteria? How do you apply it to another situation? What other follow-up might you recommend? If you'd do it again, what might you do more/less?
	How might you do it differently the next time?how might this help you in your work as a counsellor? what are your reflections on the group process during this learning process? record your reflections in your journal