

Problem based learning for information literacy

This handout accompanied a discussion held in Second Life (SL), led by Sheila Webber (Sheila Yoshikawa in SL) on 13 March 2008. The venue was Infolit iSchool

“PBL is a teaching strategy that takes everyday situations and creates learning opportunities from them. This model is collaborative in nature and uses interactive applications to encourage groups of users fully by introducing real life or simulated problems to be solved.” (Macklin, 2001)

Problem Based Learning (PBL) involves students learning through engagement with problems, rather than being presented with disciplinary knowledge. Typically: the teacher will act as facilitator; the problems will be capable of a variety of approaches and solutions; the problems will be drawn from real-life; students will be expected to work collaboratively; PBL exercises will include an information gathering phase (amongst other phases); there may be peer and self-assessment. “It means that the students have a great responsibility, to be more active, and to acquire knowledge and experience by themselves.” (quotation from a physiotherapy student on their conception of PBL (Dahlgren and Dahlgren, 2002)

The need to align PBL with appropriate assessment is normally stressed (i.e. it is not productive to have a PBL curriculum assessed by an examination): the Macdonald and Savin-Baden (2004) paper is useful for advice on assessing PBL.

You may see two ways in which PBL is of relevance to information literacy:

- PBL as an approach to teaching information literacy;
- Information literacy as a necessary requirement for learners undertaking PBL.

From both of these perspectives it is valuable if library and information professionals have an understanding of PBL.

Example from Sheila Webber

Setting her first year students the scenario “You have a friend who is interested in Second Life, but is worried about the dangers, including internet addiction. What advice will you give her: should she go into SL or not?” Students investigated the problem in small groups over two weeks and presented their findings and advice orally.

References

Dahlgren, M. and Dahlgren, O. (2002) “Portraits of PBL: students’ experiences of the characteristics of problem-based learning in physiotherapy, computer engineering and psychology” *Instructional science*, 30, 111–127.

Macklin, A.S. (2001) Integrating information literacy using problem-based learning.” *Reference Services Review*, 29 (4), 306-314.

Macdonald, R. & Savin-Baden, M. (2004) *A briefing on assessment in problem based learning*.

York: Higher Education Academy.

http://www.heacademy.ac.uk/resources/detail/id349_A_Briefing_on_Assessment_in_Problem-based_Learning

PBL and Information Literacy

Breen, E. and Fallon, H. (2005) “Developing student information literacy to support project and problem-based learning.” In: Barret, T et al (Eds) *Handbook of Enquiry and Problem-based*

Learning Irish Case Studies and International Perspectives. All Ireland Society for Higher Education. <http://www.aishe.org/readings/2005-2/chapter17.pdf>

Carder, L., Willingham, P. and Bibb, D. (2001) "Case-based, problem-based learning Information literacy for the real world . *Research Strategies*." 18 (3), 181-190.

Enger, K. et al. (2002). "Problem-based Learning: Evolving Strategies and Conversations for Library Instruction." *Reference Services Review*, 30 (4), 355-358.

Eskola, E-L. (2005). "Information literacy of medical students studying in the problem-based and traditional curriculum" *Information Research*, 10 (2) . <http://InformationR.net/ir/10-2/paper221.html>

Fosmire, M. and Macklin, A.S. (2002) "Riding the Active Learning Wave: Problem-Based Learning as a Catalyst for Creating Faculty-Librarian Instructional Partnerships." *Issues in science and technology librarianship*, Spring. <http://www.istl.org/02-spring/article2.html>

Pelikan, M. (2004) "problem-Based Learning in the Library: Evolving a Realistic Approach." *Portal*, 4 (4), 509-520 (and 3 other articles on PBL and libraries in that issues)

Dodd, L. (2007) "The Impact of Problem-Based Learning on the Information Behavior and Literacy of Veterinary Medicine Students at University College Dublin." *The Journal of Academic Librarianship*, 33 (2), 206-216.

Books and general articles

These are mostly not in the information literacy area, but obviously it makes sense to learn by the (far larger amount of) research and practice in other disciplines.

Boud, D. and Feletti, G. (1997) *The challenge of problem based learning*. London: Sage.

Savin-Baden M (2000) *Problem-based learning in higher education: untold stories*. Buckingham: Open University Press

UK Centre for Legal Education. (2008) *Resources on problem-based learning*. <http://www.ukcle.ac.uk/resources/pbl/resources.html> (Annotated links, appears to be kept up-to-date)

Wood, D.F. (2003) "Problem based learning." *British medical journal*, (326), 328-330. <http://www.bmj.com/cgi/content/full/326/7384/328> This is of general interest, since it summarises some issues and approaches neatly.

Some research and reviews on PBL

Bauer, G. (2004) *Qualitative Assessment Activities for Pew Grant on Problem-Based Learning (PBL)* . University of Delaware. <http://www.udel.edu/pbl/Final-Report-Pew-PBL.pdf>

This was a reasonably large study at the University of Delaware: the researchers observed 23 modules, conducted some interviews and focus groups with staff and 40 focus groups with 119 undergraduate students. The research questions were: How do students experience the PBL context? and; What kinds of learning occur in the PBL setting? The main benefits were: Active involvement, motivation, level of comfort and inclusion, deeper learning, accountability responsibility for work, peer instruction, preparation for the workplace. The main challenges were; Maintaining student contributions to the group project, getting group grade, learning course accomplishing work in the group, receiving clear guidelines for outcomes of group work.

Koh, C. et al. (2008) "The effects of problem-based learning during medical school on physician competency: a systematic review." *Canadian Medical Association journal*, 178 (1). <http://www.cmaj.ca/cgi/content/full/178/1/34> "Our study offers objective evidence that problem-based learning during medical school has positive effects on physician competencies after graduation, especially in the social and cognitive dimensions." The learners themselves felt they acquired less knowledge through PBL approaches, although it is not certain that their ability to assess this was reliable. The authors comment that knowledge acquisition should not be the only thing to be assessed.

Newman, M. (2004) . *Project On The Effectiveness Of Problem Based Learning (PEPBL)* Middlesex University. <http://www.hebes.mdx.ac.uk/teaching/Research/PEPBL/index.htm> This project carried out a randomized controlled trial of PBL utilizing two courses for nurses and a systematic review of the effectiveness of PBL . In their study of nurses, the most significant outcome of a PBL approach was increased dissatisfaction with the course. It raises interesting questions and (to me) highlights the need to talk to students more about your approach to teaching and why you are doing things in a particular way. "This study reveals student dissatisfaction and a disjunction between expectations and practice in Problem Based Learning. This suggests that its theoretical basis needs further investigation. Within Problem Based Learning, it appears to be taken for granted that everyone shares the principles, aims and values that underpin the approach. There is a lack of recognition that pedagogy is a site for struggle between a number of competing discourses. Its focus on classroom practice distracts attention from issues in continuing professional education such as the tension between employer driven demands and the 'personal growth' philosophy of Continuing Professional Education in higher education."

From their report on the pilot systematic review: "The pilot Systematic Review has established that the limited high quality evidence available from existing reviews does not provide robust evidence about the effectiveness of different kinds of PBL in different contexts with different student groups. The pilot review demonstrates the potential value of a Systematic Review using this approach. However, the pilot review also highlighted a number of conceptual, methodological and practical problems that will need to be addressed by a full review and by those interested in PBL. "

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