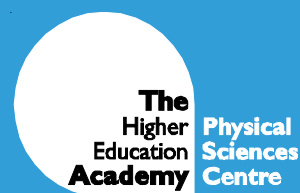


Web Resources for Problem-Based Learning

Where are the leading exemplars?



A search under 'problem based learning' using the Google search engine finds 1.5 million hits with no trouble at all. Of course, no academic is ever going to make even a modest attempt at browsing just a tiny fraction of those. What follows here are brief summaries of the some of the more interesting and useful aspects of several sites on PBL.

Most PBL websites give a definition of the key characteristics of problem-based learning and extol the virtues of the approach. Most give extensive lists of links to other sites and, consequently, almost any PBL website is a reasonable starting point. Few attempt to give any sort of realistic advice on implementation, overcoming difficulties, preparing staff and students or writing problems. Even fewer sites give examples of problems and many that do give materials which are, to say the least, disappointing. Much of what is presented as PBL is really no more than reasonably creative problem solving.

Most quality PBL sites originate in the USA, Canada and Australia. Much of what is available is in Medical education but is often still applicable to other disciplines. Many of the sites are interdisciplinary and provide resources and ideas which many practitioners may find useful.

The **University of Adelaide's Advisory Centre for University Education** is home to the 'Leap into PBL' website. Its sister sites; 'Leap into...' on lifelong learning, student-centred learning and on-line learning are also worth a closer look. This site is aimed primarily at the university teacher who wishes to explore this approach for the first time, but may also be useful to the teacher who has dabbled with PBL. The site aims to provide a structure around which practitioners can build their own course. It includes a step by step induction to PBL and covers a wide range of issues such as training staff, preparing students, assessment, evaluation, dealing with non-participation, keeping the groups going, timetabling sessions, etc. It also provides guidance on writing problems that do not gloss over the effort and time involved. This is a very useful and practical site and is a good starting point, especially for the lecturer new to PBL. (http://www.adelaide.edu.au/cipd/material/leap/leapinto/prob_based_lrng.pdf)

The **National Center for Case Study Teaching in Science** is a real treasure trove of case studies, most of which easily fall within the PBL definition. There are many examples of cases covering many areas of science and links to a large number of sites which could provide ideas for new cases. This is an excellent place to start if you are thinking of writing your own problems. (<http://ublib.buffalo.edu/libraries/projects/cases/ubcase.htm>)

The **Problem-based Learning Initiative at Southern Illinois University** concentrates mainly on medical education but is very useful for the basics such as the essential requirements for PBL. If you are interested in medical education then they have a range of books, videos, PBL modules and patient simulations to buy. The bibliography is very comprehensive. (<http://www.pbli.org/core.htm>)

The **University of Samford Center for Problem-Based Learning** organises their site under headings, eg; Who?, What?, When?, Where?, Why? and all subsections are fairly standard stuff. The section which deserves a closer look is How? which provides free access to the in-house journal 'PBL Insight' which is a source of some useful articles and invites submissions from authors. (<http://www.samford.edu/pbl/index.html>)

The **San Diego State University Distributed Course Delivery for PBL** site provides an on-line workshop in PBL which could form the basis of do-it-yourself staff development. This could be another good starting point for academics new to PBL. The 'Learning Tree' section provides comprehensive coverage of the subject and is particularly strong on assessment, implementation and overcoming barriers and obstacles. The site also includes an extensive bibliography. (<http://edweb.sdsu.edu/clrit/home.html>)

The **University of Delaware** site is extremely useful. The list of books links directly to reviews or publishers. There are several full-text articles as well as back-issues of the in-house journal 'About Teaching' which features many articles on PBL. There are also a number of sample problems taken mainly from the sciences. By far the most useful feature of this site is the PBL Clearinghouse which is a searchable collection of many peer reviewed problems. The Clearinghouse is accessed via an email user name and password but these are available easily and you can be signed up within minutes. Once into the Clearinghouse users can search by keyword, author or discipline. There is also an invitation to become an author or reviewer. This is a really excellent resource.
(<http://www.udel.edu/pbl>)

Of course **McMaster University in Canada** has a long tradition in PBL. One staff member, PK Rangachari, has some very useful advice related to writing problems in his 'Writing Problems: A Personal Casebook'. This casebook discusses the many aspects of writing good quality problems and includes many examples drawn mainly from the biomedical, and biological sciences.
(<http://www.fhs.mcmaster.ca/pbls>)

The **Queens University Ontario, School of Medicine** PBL site contains a downloadable version of 'The PBL Handbook' which is a useful guide to many aspects of PBL. Although the examples used to illustrate the handbook are drawn from medicine, the book is generic enough to ensure that this is widely applicable and could be potentially useful to those new to the subject.
(<http://meds.queensu.ca/medicine/pbl/pblhome.htm>)

The **University of Maastricht** site contains many links to other PBL sites. The advantage of their list over many others is that the links given here are categorised under several headings such as 'goals', 'general description', 'bibliographies', 'cases' and 'institutional sites'; arranged alphabetically. The most useful list is that to links of full text papers on PBL.
(<http://www.unimaas.nl/default.asp?taal=en>)

The **Maricopa Center for Learning and Instruction** hosts a searchable database of links which is more useful than most as the search can be refined so producing a sensible number of more relevant links.
(<http://www.mcli.dist.maricopa.edu/pbl/problem.html>)

In the UK, the (former) LTSN Generic Centre is supporting a national project in PBL. A major outcome of this project is a **PBL website**. The site is in a fledgling state but contains useful links to other sites which can be a good starting point for a more extensive search. It is organised by discipline, which should make it potentially very useful. However, there is little material available on it at the moment and the UK community needs to work with the Generic Centre and share resources so that this UK-based site becomes as impressive as some of the others mentioned here.
(<http://www.hss.coventry.ac.uk/pbl/links.htm>)

The **Problem-Based Learning Directory** is based at the **University of Brighton** and it aims to provide brief information about how PBL is managed by various departments/disciplines, in many countries, in order to facilitate international collaboration. The site does not yet contain much information relevant to physical sciences but it could grow into a useful resource.
(<http://interact.bton.ac.uk/pbl>)

Project LeAP (Problem-Based Learning in Astronomy and Physics) is a three-year FDTL project. The project aims to increase the profile of problem-based learning (PBL) in university Physics and Astronomy courses. The University of Leicester heads the project consortium, with the Universities of Hertfordshire, Reading, and Sheffield as partners. The site includes a comparative analysis of PBL within physics, case studies, exemplar support materials for students and tutors, and original PBL problems.
(<http://www.le.ac.uk/leap>)