Problem Based Learning

Taha Mzoughi
What is Problem Based Learning

- use meaningful, lifelike situations that students can learn from.
- students do not try to solve highly structured, cookbook-style problems.
- students make sense of the everyday context presented.

What is Problem Based Learning

♦ work in small groups to not only discover an answer, but to first determine the question to solve.

♦ PBL requires students to distribute tasks and share expertise amongst themselves.

♦ The problems are designed to enable students to enquire and work collectively to construct understanding.

♦ In PBL, students don’t just learn the course content, they learn how to learn!


http://phySci.kennesaw.edu/
PBL History

♦ McMaster University’s Faculty of Medicine 1969
  (Albanese and Mitchell, 1993; Vernon and Blake, 1993)

♦ Currently, 70% of medical faculties in the US use PBL in
  pre-clinical years (Kinkade, 2005)


http://phySci.kennesaw.edu/
PBL Uses

- architecture (Maitland, 1997)
- business (Stinson and Milter, 1996)
- education (Duffy, 1994)
- engineering (Fink, 1999; Woods, 1994)
- law (Driessen and Van der Vleuten, 2000)
- physics (Williams, 2001; Williams and Duch, 1997; Duch, 1996).
- social work (Boud and Feletti, 1991)

Personal Anecdotes

- Minnesota’s Context Rich Problems
- Architecture
- Middle School Physical Science
Example

You are writing a short adventure story for your English class. In your story, two submarines on a secret mission need to arrive at a place in the middle of the Atlantic ocean at the same time. They start out at the same time from positions equally distant from the rendezvous point. They travel at different velocities but both go in a straight line. The first submarine travels at an average velocity of 20 km/hr for the first 500 km, 40 km/hr for the next 500 km, 30 km/hr for the next 500 km and 50 km/hr for the final 500 km. In the plot, the second submarine is required to travel at a constant velocity, so the captain needs to determine the magnitude of that velocity.

http://groups.physics.umn.edu/physed/Research/CRP/crexample.html
Useful Sites

♦ University of Delaware:  http://www.udel.edu/pbl/
  ♦ Clearinghouse:  https://chico.nss.udel.edu/Pbl/
  ♦ Presentations:  http://www.udel.edu/inst/pbl2000samford/

♦ University of Minnesota:
  http://groups.physics.umn.edu/physed/Research/CGPS/GreenBook.html
  ♦ http://groups.physics.umn.edu/physed/research.html
  ♦ http://groups.physics.umn.edu/physed/Research/CRP/onlineArchive/ola.html

♦ McMasters Chem Engineering, D. Woods:
  http://chemeng.mcmaster.ca/pbl/pbl.htm
  ♦ http://paer.rutgers.edu/PT3/
From:


http://phySci.kennesaw.edu/


