Problem Based Learning in Engineering, Design and Technology

Commenced: 2006

What is it?

PBL is a teaching and learning approach that can develop higher order cognitive skills where learning is initiated through a realistic problem that has engaged the learner to find a solution. Learners collaborate in small teams to identify their learning needs and to find and construct required knowledge to solve a problem engaging in a deep approach to learning.

What is involved?

In being presented with a problem the learner identifies their learning issues, or needs, and thereby obtains a motivation to engage in the learning process; they gain ownership of the problem.

Why is the project important to the CETL and the University?

The implementation of PBL dovetails with SHU and ACES pedagogic principles:

- Student-centred learning- which suggests that student's motivation towards their learning is critical and that learning must be of personal relevance to them

- Encouraging a deep approach to learning

- Active or experiential learning- suggests that, in order to learn, students should actively engage with the subject matter, often in interaction with others

- Critical thinking and problem solving abilities, creativity and innovation- should be developed and demonstrated by students, through a variety of learning experiences, as they progress through their studies

- The reflective practitioner approach- which acknowledges learning from experience, and that students should be encouraged to actively reflect on that experience

- Collaborative and team working- in both face to face and virtual environments

What do you hope the project will achieve?

Benefits of such an approach can be summarised as:

- critical thinking, analysis and synthesis cognitive skills are developed to solve problems

- information sourcing skills are developed by evaluating and using suitable learning resources

- team working skills are developed

- written and verbal communication skills are developed

- self-confidence is enhanced

- learner autonomy is implied thus facilitating continuing and independent learning traits

Future Developments

It is planned to widen out the project to more modules and associated teaching staff. The project will also inform future course development and even provide interactive learning sessions for open days to help with recruitment in Engineering.

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This information can be made available in other formats.
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