

Results of the Asia Link Project: Problem-Oriented Project Based Learning in Environmental Management and Technology

Presented by:
A Halim Sulaiman
University of Malaya

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A project funded by the European Union

The Project:

- 'Problem-Oriented Project Based Learning in Environmental Management and Technology' project was co-funded for the amount of €287,330.00 (approximately RM1.3 million) under the European Union's Asia-Link Programme
- This 24-month project commenced on 22 August 2005 (ended last month)
- It is the first initiative headed by a Malaysian institution under the Asia-Link programme

The Project: Participants



University of
Malaya
(Project
Leader)

Location: Kuala Lumpur, Malaysia
Student Population: 29,000

The Project: Participants



Universiti
Kebangsaan
Malaysia
(Local
Partner)

Location: Bangi, Selangor, Malaysia
Student Population: 23,000

The Project: Participants



Technical
University
of Denmark
(DTU)

Location: Lyngby, Denmark
Student Population: 6,000

The Project: Participants



Roskilde
University
(RUC)

Location: Roskilde, Denmark
Student Population: 8,000

Problem-Oriented Project Based Learning in Environmental Management and Technology
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The Project: Participants



Delft
University
of
Technology
(TU Delft)

Location: Delft, The Netherlands
Student Population: 13,000

The Project: Overall Objectives

- Contribute in the development of integrated policies, practices and technologies that ensure social and environmentally sustainable economic development in Malaysia
- Increase the interaction of universities with government, industry, non-governmental organisations and local communities
- Increase beneficial regional and international links between Asian and European countries

The Project: Specific Objective

The project aims to develop and implement a masters programme in environmental management and technology utilising a European problem-oriented project based pedagogical approach and increase the competencies of present and future teaching staff at Malaysian universities

The Project: Activities

- Develop an outline of a masters programme on environmental technology & management, utilising problem-oriented project based learning to be offered at Malaysian universities
- Develop multidisciplinary curriculum comprising of jointly-developed course modules, project scenarios and case studies
- Upgrade teachers skills and knowledge in course content, teaching methods and project work supervision
- Establish agreements with external stakeholders to support student project work

Why Problem Oriented/Project Based?

- In POPBL, the students themselves define in collaboration the problems and learning goals
- In POPBL, the entire educational process is based on the students' focus on a scientific and social problem, which they want to investigate.
- POPBL differs slightly from traditional PBL (problem based learning) and CBL (case based learning), which are both based on predefined tasks or problems decided by the teacher or the textbook.

Results

	Activity	Result
1	Institutional and Administrative	<ul style="list-style-type: none"> ▪ Framework for establishment of Centre of Excellence in POPBL ▪ MoU's between partner universities for continued cooperation
2	Masters programme outline	<ul style="list-style-type: none"> ▪ POPBL-based Masters programmes at UM and UKM ▪ Emphasis on project work: Research University requirements (24 vs 12 credits)
3	Curriculum Development	<p>Five courses developed:</p> <ul style="list-style-type: none"> ▪ Integrated Urban Water Management ▪ Industrial Ecology ▪ Life Cycle Assessment ▪ Energy and the Environment ▪ Research Methodology

Achievements, cont'd

	Activity	Result
4	Teacher Training and Joint Course	<ul style="list-style-type: none">▪ Three POPBL-based 'Joint Courses' conducted successfully:<ul style="list-style-type: none">- Industrial Ecology- Life Cycle Management- Energy and Buildings▪ POPBL Manual for teachers in final stage
5	Stakeholders Collaboration	Meetings with stakeholders held

Experiences

- **UM and UKM academic staff have become more familiar with POPBL: course and project design, problem formulation, roles of supervisor, use of ICT etc**
- **Skills of postgraduate students improved**
- **UM and UKM benefited in areas like educational planning, development and training**
- **All the partners learned how to develop and support a framework for collaboration**
- **UM has gained experiences in project management and implementation**

Constraints

- **POPBL is still in its infancy in Malaysia: no specific model to follow - thus the need for POPBL Manual (Malaysian version) especially in view of the Malaysian Qualification Framework (MQF) requirements**
- **Different educational systems between Malaysian and European universities: timing, credit transfer etc**
- **Malaysian students have less exposure to group work**
- **Constraints in terms of commitment from partner universities (staff and management)**

Lessons Learned

- **More needs to be considered to benefit fully from partnership with European universities: cultural, educational and institutional settings**
- **European partners can contribute, but for Malaysian, practicing it is the most important. POPBL Manual is a big help**
- **The ICT infrastructure is vital: beyond e-mails**

Conclusion

- The Asia Link funding has enabled the European partners to share their expertise in POPBL with Malaysian universities
- The project provides opportunities for understanding differences in Higher Education: teaching & learning, research, role of academics and institutions, funding etc
- For Malaysia to get full benefits, sharing of experiences among local universities is important, thus the formation of Centre of Excellence in POPBL

Thank you

Terima kasih