Embedding Interdisciplinarity:
developing a generic EBL team project module for undergraduates

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Centre for Excellence in Enquiry Based Learning
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Structure of presentation

- Overview and Part 1 (JM)
- Part 2 (IB)
- WebCT module (SL)
- Evaluative research (CW)
- Questions....
Aim of our project

To refine and embed a generic interdisciplinary EBL team project module for undergraduates

Objectives

😊 To re-evaluate a pilot module based on blended learning
😊 To devise an extended one-semester, credit-bearing module to run University-wide
😊 To address institutional issues in embedding the module into the cross-university curriculum
Learning outcomes of the module

To develop EBL-based interdisciplinary team skills, e.g.
- negotiating a topic and the process of enquiry
- communicating material to non-specialists
- developing an appreciation of other disciplines’ ways of working

To develop individual skills and abilities, including:
- independent learning
- bibliographic research
- oral presentation and Q&A skills
- creativity (poster design)
- self and peer evaluation
- online learning
Reflective practice: our own EBL....

Building on 2 UG and 1 PG pilot project, funded with Curriculum Innovation awards:

‘Interdisciplinarity in the undergraduate curriculum’
2003-04, 3 Faculties, 3 disciplines
Report + oral presentation

‘Rolling out interdisciplinarity in the undergraduate curriculum’
2004-05, 4 Faculties, 5 disciplines
Poster symposium

• Both trans-university projects using EBL
• CEEBL project looked at how to embed interdisciplinary EBL-based work across the University
Changes for the 2004/05 project

Based on feedback from 2003/04 project:

- Included other disciplines: Geography, Medicine and Education joined by Spanish and Biological Sciences
- EBL retained; a self-selected team project based on bibliographic research
- Changed to delivery, assessment strategy and format to encourage more interdisciplinary dialogue
  - WebCT to support face-to-face meetings
  - Report + oral presentation replaced by Symposium with poster, short oral presentation and ‘Question-time’ session.
  - Structured tasks via WebCT, with a worked example of AIDS to illustrate postings required
  - Further development of reflective and other lifelong learning skills
Changes for the current project

As a result of feedback from 2004/05 project:

- Extension to other disciplines and staff desirable, but short lead time, so same 5 disciplines and staff (Geography, Medicine, Education, Spanish, Biological Sciences)
- More students recruited; up from 16 to 21
- Poster symposium format worked well so very few changes, most to cope with larger numbers:
  - Two sub-groups for some sessions
  - Shorter time per team at Symposium
  - Revised assessment sheet
  - Emphasis on ‘Recommendations’ panel of poster
Student teams

7 Interdisciplinary teams of 3, from 5 disciplines, mixed levels:

- Geography; Year 2, B.A/B.Sc.
- Medicine, Year 4, Intercalated degree, Special Study module [compulsory]
- Education; Year 3, BA Language, Literacy & Communication
- Life Sciences; Year 3, Biological Sciences
- Spanish; Year 3 BA Spanish, Year 4 Spanish and Journalism (Erasmus)
Two part structure

Part 1 (6 weeks, 5 credits)
- Enquiry-based learning on topic of own choice, culminating in a poster symposium
- Completed by all students in interdisciplinary teams of 3
- Blended learning: weekly tutor-facilitated meetings + WebCT

Part 2 (5 weeks, 5 credits)
- Medicine, Education and Spanish only
- Tutor-led in discipline groups
- Reflection on interdisciplinary experience; format and assessment varied with discipline, e.g. Learning journal, individual presentation
Part 1 programme

- Week 1: Icebreaker
  - Introduction to the course, each other and WebCT
- Week 2: Topic statement
- Week 3: Key problems and questions
- Week 4: Poster preparation
- Week 5: Symposium
  - Posters with oral presentations
  - Peer and tutor assessment
- Week 6: Question Time and Plenary
  - Seen questions based on cross-briefing

WebCT posting and feedback each week
Worked ‘AIDS’ example provided for each
• Minimal restrictions on choice of topic
  – of societal or environmental concern
  – all disciplines could contribute
  – focus on interdisciplinary solutions

• Topics chosen anticipated issues now in the press
  – Bird flu pandemic
  – Street children; Sport Relief
  – Road safety in developing countries; Radio 4
Meninos da Rua: The Lost Children of Brazil

The risks faced by Brazilian children on the streets, especially HIV

- Economic Level Causes
  - High poverty levels
  - Lack of social services
  - Inadequate health care

- Social Causes
  - Family instability
  - Poor living conditions

- Reducing Causes
  - Cycle of violence
  - Limited opportunities
  - Neglect and abuse

- Way of Life
  - Children work long hours
  - Use drugs
  - Engage in risky behaviors

- Public Opinion
  - Many children are stigmatized
  - They are seen as a burden

HIV - The Basics
- AIDS is caused by the human immunodeficiency virus (HIV)
- HIV is transmitted through blood and sexual contact

Transmission of HIV
- Unprotected sexual contact
- Sharing needles
- Mother-to-child transmission

Tackling HIV - The Solutions
- Prevention
- Education and awareness
- Medical care

Brazil has been praised for its efforts to reduce HIV/AIDS, although challenges remain. The government has implemented strategies to reduce the spread of the virus, including education programs, needle exchange programs, and antiretroviral treatment. However, the fight against HIV/AIDS is ongoing, and continued efforts are needed to ensure the well-being of those affected.
Road traffic accidents in the developing world; Mexico City

The Global Challenge of TB: effects of TB on the immigrant population in Spain

El Día del Niño por Nacer: legal and socio-political situation of women in Argentina in relation to abortion

Communication breakdown in Hurricane Katrina
Part 2 for Medics
2nd half of semester

Choose 1 topic based on inter-disciplinary experience

Develop as research project
- Hypothesis
- Research questions
- Methods

- Clinical implications of El Nino
- Peer-led learning in AIDS affected Africa
- Teenage pregnancy; failure of sex education
- Honey in clinical practice
- Retroviral medication compliance in UK immigrants
- Comparison of treatments for TB
- Toxicity of nanoparticles
Part 2 for Education & Spanish: learning journal

Guidance notes provided on WebCT

Why a learning journal?

As part of the assessment for this unit, you are asked to keep a journal of your experiences of learning on the course and to submit an edited version of this to your tutors for assessment.

Your journal entries should not simply record events. Most of your entries should consist of reflection on what these events mean (e.g. how you interpret their significance in terms of your own learning) and what actions you might take as a result of this understanding. It is through a process of reflection and adapting our ideas and behaviours that we continue to develop (i.e. learn) in our chosen professional fields and in life more generally. Much of this learning takes place continuously without us being fully aware of it. However, increasingly, in our working lives, we are expected to do this formally as part of our professional development. The reflective journal you undertake for this unit is an example of such formal reflection.

What should I write about?

Rosie Turner-Bisset (2004) has developed a helpful framework for conceptualising the content of reflective journal entries, upon which this guidance is based. You should include information of three types as follows:

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<tr>
<th>What?</th>
<th>So what?</th>
<th>Now what?</th>
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<tr>
<td>What happened?</td>
<td>What does this mean in terms of my own learning?</td>
<td>What will I do as I result?</td>
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<tr>
<td>What did I do?</td>
<td>What was effective and what was counter-productive?</td>
<td>What might I do differently next time? etc.</td>
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<td>What did other people do? etc.</td>
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Welcome to the Interdisciplinary Undergraduate Team Project, a pilot course funded by the Centre for Excellence in Enquiry-based Learning, University of Manchester.

The course offers the opportunity for undergraduates from five subject areas to participate in and contribute
Course information
- Course Overview
- What happens in Part 1?
- What Happens in Part 2?
- Assessment
- Skills self-assessment form

Learning Journal
- Learning Journal Examples
- Poster Guidelines
- Poster Assessment Form
- Choosing a topic
- WebCT Tasks Summary

Some examples
- Not on the Label starter article
- Deprivation-Regeneration starter article
- AIDS in S Africa Starter Article
- AIDS Topic Statement
- AIDS Poster Plan
- AIDS Poster Abstract
# Interdisciplinary Undergraduate Team Project

## Discussions

Click on a topic name to see its messages.

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Table of Contents

1. Group allocations
   1.1. 2004 Teams
   1.2. 2005 Teams

   2.1. Team 1: Recycling: It’s Rubbish!
       2.1.1. Abstract
       2.1.2. Aims
       2.1.3. Landfills and health
       2.1.5. Map (2)
       2.1.6. The problem
       2.1.7. Reasons
       2.1.8. Solutions
       2.1.9. Table
       2.1.10. Why Do Things Need to Change?
   2.2. Team 2: Shallow Graves: Deep Wounds (Political Violence in Perú)
   2.3. Team 3: When Nectar Turns Poison
   2.4. Team 4: Influenza: the Next Global Health Threat?

   3.1. Team 2: Malaria in Zimbabwe
   3.2. Team 4: Brazil street children
   3.3. Team 5: Air quality in Santiago
   3.4. Team 7: Abortion in Argentina
### Database: 2005

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Dropping like flies; the malaria problem in Zimbabwe
Evaluative Research

Aimed to gain information about:

(i) Students’ reactions to the course  
(ii) Ideas on modifications/improvements  
(iii) Students’ insights into their own or others’ disciplines  
(iv) What, if anything, was distinctive about interdisciplinary EBL experience
Numerical data

- Course unit evaluation forms, end week 6 (i.e. the end of the interdisciplinary team projects)
- Student self-evaluations, completed in the first session and at the end of week 6
Qualitative data

- Semi-structured interviews (individual students, mono & interdisciplinary groups)
- Open-ended questionnaire items
- Notes from teaching sessions and tutor meetings/discussions
Results:
Course unit evaluations

Main strengths
(i) Working with ‘new’ people/those from other disciplines
(ii) Learning new approaches to research and study
(iii) Seeing problems from a different or more holistic viewpoint
(iv) Freedom to choose topics/work independently
Semi-structured student interviews

Favourable responses to

- Tasks (posters, presentations, writing abstracts, responding to seen questions: to ‘really show what we know’)
- Using WebCT: ‘without it we wouldn’t have been able to meet the deadlines’

Less favourable responses to

- Delay in getting on with posters
- Too little time to go sufficiently deeply into a complex/intractable problem
- Compulsory for some students
Understanding/appreciation of own or others’ disciplines:

- knowing that you have to come at a problem from several different people’s views. You can’t ignore the other opinion because it’s going to be an obstacle to your solving the problem. I think that geography has a role to play there
- ‘I didn’t realise how sciency Geography could be’
- ‘the medic’s was completely scientific and yours (education) was more like mine in that you look at all the different factors involved. It’s good to have a mixture of thinking of the broad issues and then focussing down’
- ‘I was really impressed with the Languages people. They don’t just study the language and we don’t just study maps’.
… but still progress to be made

- ‘It would be good to include more disciplines’
- ‘Engineering would be cool, so would Law’
- ‘I don’t think we want any fine art students here’
- ‘If you had a philosophy student, you could just sit round and talk’
- ‘I feel that the only real skill that they bring is the ability to speak Spanish’

- Possible implications?
Distinctiveness of ID for students 1

- **Novelty**
  - Problem not directly related to their degree
  - Working with new people in new locations
  - Working closely with team mates throughout the process (contrasted with PBL)

- **Learning**
  - about how other disciplines approach research/problem-solving
  - about what students on other courses are learning
  - new techniques or resources (eg note-taking techniques, displaying information, electronic journals & databases).
Distinctiveness of ID for students 2

• Being challenged
  – having to explain own disciplinary concepts and ways of working
  – pre-conceptions about other disciplines called into question
  – real and complex tasks that mirror interdisciplinary nature of future professional life
Staff perspective: embedding ID

- Interdisciplinary T&L is worth pursuing: for staff and students
- The basic model ‘works’
- Institutional constraints to overcome, e.g.:
  - Assessment
  - Funding, especially staff time and ‘ownership’ of FTEs
- Developing a 10-credit, university-wide option:
  - Standardise unit & assessment (eg pts 1 & 2)
  - Team + individual assessment
  - Staff development (shadowing): staff and PGs
  - More attention to developing ID communication skills
Thank you for listening
Questions, please.....