Problem-based Learning at Maastricht University

Mainz University
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7 June 2019
PBL at Maastricht University

• 1976

• To integrate theory and practice
• To improve intrinsic motivation
• To foster reasoning skills, self-directed, independent learning

• Key-elements back then:
  - small groups, problem-based, self-directed, attention to skills
Traditional Education

- Projects
- Lectures
- Skills
- Research and other educational activities

Passive and teacher-centered

Education at UM

- Projects
- Lectures
- Tutorials
- Skills
- Research and other educational activities

Active and student-centered
40 years later

GET TO KNOW EDVIEW

The Do’s, Don’ts, and Don’t Knows of Teaching and Learning at Maastricht University
Main findings

- The UM still loves PBL
- There is not 1 PBL
- PBL philosophy $\neq$ PBL format
- Room for creativity and diversity
- Added value student development
Higher education in a world with...

• Shifting global power blocks
• Strong public engagement, e.g. citizenship, democracy and identity
• Global security issues, e.g. climate change and cyber space
• Long-life and well-being challenges
• A spread of westernization, e.g. individualism, consumerism and materialism

Source: OECD, ‘Trends Shaping Education 2019’
Current student to develop as a...

• Person
  - *Bildung*, developing skills of reason, personality and character, also in relation to surrounding

• Citizen
  - Global citizenship competencies: social responsibility, global engagement and literacy

• Professional
  - Domain specific knowledge, 21st century skills, and life-long learners

Source: OECD, ‘Trends Shaping Education 2019’
Role of university education

• Prepare students to live, work and contribute to their (local and global) environment
• Education is more than preparation for labour market
• Still strong focus on knowledge acquisition, yet attention to creation and application of knowledge
• Academic skills, 21\textsuperscript{st} century skills
PBL at Maastricht University
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In theory
SELF-DIRECTED

COLLABORATIVE

CONTEXTUAL

CONSTRUCTIVE

PROBLEM-BASED LEARNING
Contextual learning

• Apply knowledge to different (academic) contexts and situations
• On the basis of puzzling assignments
• Offer real-life problems
• Promote multi-perspective analysis of problems and solutions
Collaborative learning

• Work towards common learning goals
• Facilitate mutual interaction on the basis of shared problems and solutions
• Provide academic guidance through e.g. tutors and mentors
• Provide dynamic and diverse classroom environment
Constructive learning

• Allow students to develop personal interpretations of the world
• Activate and make use of prior knowledge
• Promote active learning through e.g. discussion, presentations and Q&A
Self-directed learning

• Give students an active role in planning, monitoring and evaluating their learning process
• Promote self-regulated learning through e.g. self-study, reflection and feedback on learning process
PBL at Maastricht University
- 
In action
Common at UM: 7-step format

Pre-discussion
1. Clarification of terms
2. Problem statement
3. Brainstorm
4. Cluster (Brainstorm)
5. Learning Goals

6. Self-Study

7. Post-discussion
Task 2: War and Peace

A kindhearted Thomas Hobbes saw himself confronted with the English civil war of the 1640s and it prompted him to write his treatise titled *Leviathan* (1651). In this book he presents us with a story about war and peace that sets all in motion:

Hobbes held that people in the ‘state of nature’ were quarrelsome and turbulent, forever locked in a war of all against all. He famously said that life in the state of nature outside society was absolutely free, but solitary, poor, nasty, brutish and short.

He writes: Nature has made men equal, and any individual difference is not so considerable. From this equality of ability arises the equality of hope in the attainment of our individual ends. Therefore, if any two men desire the same thing, which nevertheless they cannot both enjoy, they become enemies, and in the way to obtain their ends endeavor to destroy each other.

In the *Leviathan* Hobbes argued for a way out of this ‘state of nature’ of constant war, and he heralds the modern world by placing central Western liberal principles on the map. Note: In your brainstorm you should also attempt to interpret and consider the Frontpiece below.

Required Reading


ASSIGNMENT 1

DOES EUROPE EXIST?

2. Voltaire, French philosopher, in 1751:

“[Europe is] a kind of great republic divided into several states, some monarchical, the others mixed… but all corresponding with one another. They all have the same religious foundation, even if divided into several confessions. They all have the same principle of public law and politics, unknown in other parts of the world.”

3. Otto von Bismarck, chancellor of Germany, at the end of the 19th century:

“Anyone who speaks of Europe is wrong – a geographical notion.”

Frontpiece of *Leviathan* by A. Bosse with input from T. Hobbes, 1651

Detail from frontpiece


b) A T-O map from an eleventh-century manuscript of Isidore.
Diversity in formats

• PBL fused into 7-step format
  - Advantages and disadvantages

• New room for diversification and creativity at UM

• Other formats can be equally active and student-centered:
  - (interdisciplinary) Projects
  - Challenges
  - Simulations
  - Team-based competition
  - Tutorless groups
  - ...

Maastricht University
Does this work?

• Retention and application of knowledge is better
• Linking between concepts is better developed
• Supports cross-disciplinary thinking
• Development of transferable skills (chairing, scribing, defending arguments, critical thinking, debating and pursuing)
• Preparation for future career
Small steps to student activation

• Offer students problems/tasks
• Allow students to share and build upon prior knowledge
• Ask students to formulate learning goals themselves
• Introduce peer-feedback and self-reflective assignments
Thank You
PBL
Innovation projects
A central approach to education innovation

- Central institute for education innovation
  - Physical presence
  - Facilitate collaboration

- Focus on dissemination and sustainability of innovation

- Steering Group Education Innovation
  - Multilateral platform
  - EDLAB liaisons
  - Vice-deans of Education

- Taskforce International Classroom

Maastricht University
Approach to innovation

• Broad definition of education innovation
  - Improvement and innovation (different and new);
  - But also repair and maintenance;
  - Tool -and tech-based innovation only as means to achieve goal

• Incremental process instead of ‘disrupt or be disrupted’- attitude
  - Informed response to hypes
  - Translation to UM context
EDLAB principles

**Principle I**
Majority of UM faculties participate

**Principle II**
Deans commit to structural implementation of successful projects
Engagement

- UM teaching staff
- Project participants
- Liaisons
- EDLAB
Current EDLAB projects

Self-Regulated Learning Skills

Information Literacy

Assessing the ‘I’ in groupwork
Completed EDLAB projects

Constructive Alignment

Context
Process
Content

Intended Learning Outcomes (ILOs)
Teaching & Learning Activities (TLAs)
Assessment Methods (Ass.)

Standing tutorials

EDUCATION
THAT MOVES YOU

PBL & research Skills

PBL
Integration
Research skills

Curriculum
Learning trajectories

Thesis
Preparation

EDview

Get to know
EDVIEW

The Do’s, Don’t’s, and Don’t Knows of Teaching and Learning at Maastricht University
At the UM we have the most international student body in the Netherlands

<table>
<thead>
<tr>
<th>Enrolled students in 2016</th>
<th>16,861</th>
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<tbody>
<tr>
<td>International students (%)</td>
<td>51</td>
</tr>
<tr>
<td>Nationalities</td>
<td>112</td>
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</tbody>
</table>

✓ Each year 1,000 foreign exchange students join us
✓ Each year almost 40% of our own students participate in study abroad programmes.
29% of UM staff are also from overseas

<table>
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<th>Staff (FTE) in 2016</th>
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<tbody>
<tr>
<td>3,495</td>
<td></td>
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<tr>
<td>Academic staff (FTE)</td>
<td>2,018</td>
</tr>
<tr>
<td>Professors male</td>
<td>383</td>
</tr>
<tr>
<td>Professors female</td>
<td>90</td>
</tr>
<tr>
<td>International academic staff (%)</td>
<td>39</td>
</tr>
<tr>
<td>International PhD candidates (%)</td>
<td>52</td>
</tr>
<tr>
<td>Administrative &amp; support staff (FTE)</td>
<td>1,477</td>
</tr>
<tr>
<td>International admin &amp; support staff (%)</td>
<td>8</td>
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International Classroom goals

1) Promote a culture of inclusion and respect, that is welcoming to all students irrespective of their cultural background;

2) Prepare students for the global labour market;

3) Contribute to the internationalization strategy of Maastricht University in education and research;

4) Develop support activities for staff and students (e.g. development of intercultural communication skills, coaching skills).
EDLAB Projects on International Classroom

**Project**
‘Global Citizenship Education’ (GCE)

**Project**
‘International Intended Learning Outcomes’ (IILOs)

**Teacher-training**
‘How to run an international classroom’
Teach-meet ‘International Classroom’
**Timeline**

**Phase 1: Educational Theory and Evidence**
- **Who:** Researchers and policy makers
- **What:** Focus groups and literature review
- **When:** October - November 2017

**Phase 2: Experiences from Practice**
- **Who:** Students and staff
- **What:** Focus groups, interviews, and questionnaire
- **When:** January - March 2018

**Phase 3: Analysis and Feedback**
- **Who:** Project team and selected stakeholders
- **What:** Data analysis and preliminary results
- **When:** April - August 2018
5 CENTRAL CONCEPTS

• UM’s problem-based learning environment
  - Teaching and Faculty Development
  - Course and Curriculum Design and Management
  - Assessment
  - Internationalisation
  - Technology
Research
GET TO KNOW EDVIEW

THE DO’S, DON’T’S, AND DON’T KNOWS OF TEACHING AND LEARNING AT MAASTRICHT UNIVERSITY
Retention and Student Persistence
Project Outline and Objectives

- Focus on First Year ‘drop-out’
- Two sides of the same coin
- Identify causes & potential remedies
- Entire trajectory recruitment – end of FY
- Make recommendations, open up best practices, connect stakeholders
Retention and Student Persistence
Two Frameworks for Questions and Solutions

Scope of the Project:

Recruitment
Application
Matching - Selection
Admission
Introduction
First Year

Three aspects of Student Engagement

Cognitive
I am interested, see relevance and purpose, am challenged, etc.

Emotional or Affective
I feel acknowledged, safe, included

Behavioral
I am motivated to act, participate, do extra-curricular work
Training
Continuous Professional Development (CPD) and other services

• CPD: Hours for permanent teacher development
• EDLAB academic and support staff offer
• PBL training
• Teacher and student communities
Excellence
MaRBLE (Maastricht, Research Based Learning)

1. Introduces Maastricht’s most talented and motivated students to undergraduate research
2. Based on the concept of Research Based Learning
3. Provides students with the ability to develop and improve their creative and critical thinking skills
4. Provides hands-on experience with various aspects of academic research

- 3rd year Bachelor students (100-150 students annually)
- A separate certificate for their MaRBLE participation
- FHML, DKE, UCM, FPN, SBE, LAW, FASoS participate
- Integrated completely on faculty level, running for 9 years
- Provides students the chance to apply for a scholarship
- Selection by the faculty
- 15-18 credits
Honours+ (The “Common Core”)

Honours+ students work in teams on an interdisciplinary academic assignment, based on UM’s core research themes and attend several workshops.

Aims to provide a common core for all UM Honours students

Part of the Faculty Honours Programmes

Focus on developing academic skills, as well as creating a UM honours community

2nd year Bachelor students (100-125 students annually)

Extra-curricular

5 credits (outside of the regular faculty honours programme)

DKE, FPN, LAW, SBE, FASoS participate

Selection by the faculty

Running for 3 years

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PREMIUM is the excellence programme for high-performing, motivated master’s students

- Guidance of a project mentor
- Interdisciplinary team assignment from a real-world client
- Skills workshops
- Competence coaching

- Master students (100-125 students annually)
- Extra-curricular 250 hours (certificate upon completion)
- FHML, FHS, FPN, LAW, SBE, FASoS participate
- Running for 7 years
- Careful selection of students by EDLAB
- Vivid community and network (students, staff, clients)