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# Simulation of the Implementation of Project-Based Learning Processes (PBL)

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## Workshop Training on PBL

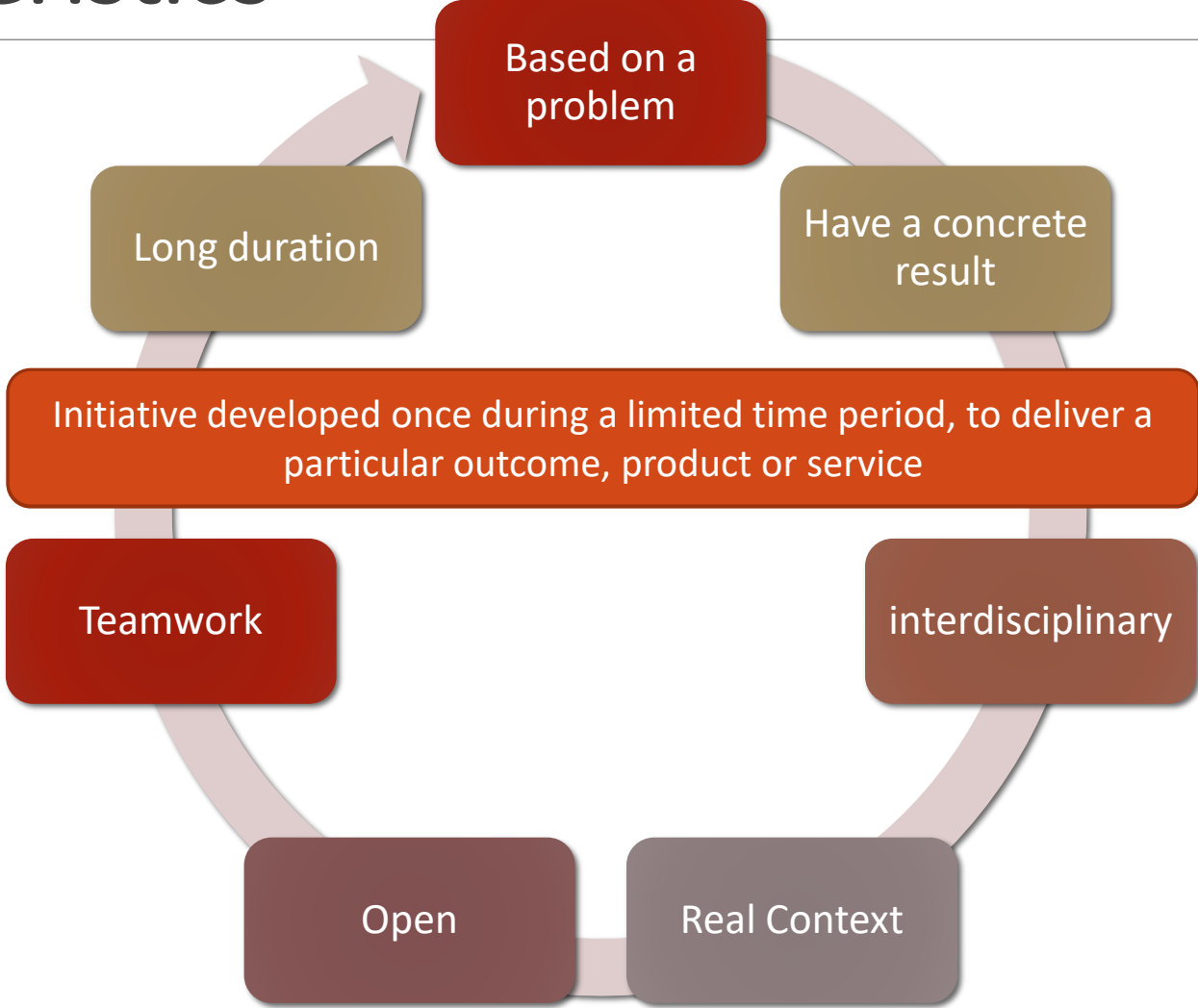
WP3 - Task 3.4 Training of staff on new tools and best practice exchange on modern teaching techniques.

Rui M. Lima, Diana Mesquita



Curriculum Development  
of Master's Degree Program in  
Industrial Engineering for Thailand Sustainable Smart Industry

# PBL - characteristics



# Marshmallow Challenge



MSIE 4.0 Teams



18 minutes



Tallest Freestanding Structure  
Support the Marshmallow on the top

Pack – Team:

- 20 sticks of spaghetti
- 1 Marshmallow
- 1 yard tape
- 1 yard string

# debriefing

- Open-ended problem
- Team strategy
- What would you do different?
- ...



**Tom Wujec - Build a Tower, Build a Team**

[https://www.youtube.com/watch?v=Ho\\_yKBitO8M&t=382s](https://www.youtube.com/watch?v=Ho_yKBitO8M&t=382s)

# Session goals

Imagine that your rector called you and said:

- It is very important that the university starts creating PBL approaches in several programs. This is important in order to attract new students and to have more funding from the companies.

Saying that he asks to you if it would be possible to create one PBL approach in a master in which you are delivering a first year course. He also tells you that he chose you because you and your colleagues had the opportunity to have training in Portugal about PBL. Finally he asks you if that is possible and if he could count on your team. What would be your answer?

- **Yes it is possible and you can count on us!**

Create a PBL proposal through a simulation process:

- Planning a PBL Process
- Working in a collaborative and interdisciplinary environment
- Explore multiple dimensions of a PBL process

## Simulation

- Project goals
- Milestones
- Time constraints
- Specific result

# Milestone 1 - Requirements for PBL organization - 10 min.

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Each team will have to identify the fundamental requirements for the organization of a project (PBL) - what is needed? Do not try to answer to the requirements, just define them...

- Teacher team
- Project phases (deliveries)
- Evaluation
- Curricular Framework
- ...

# Milestone 2 - Theme / problem definition - 30 minutes

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Each team will have to define the theme / problem on which students will work during the semester, which should integrate 2 or more courses.

Students of 1<sup>st</sup> year of the master should be able to develop a concrete result.

# Milestone 3 - PBL Implementation Proposal - 50 minutes

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- Yes, it is always possible. You just have to look for the solutions.
- Define a specific implementation, trying to overcome contextual difficulties, in order to implement the first pilot next semester.

The draft proposal of your team must be developed in a Flipchart

- Theme / Problem
- Curricular Framework (courses)
- Competences / Learning Outcomes / Assessment
- Final result
- Project Phases (deliveries) ...



***Gallery Walk – tomorrow 15 minutos***



# PBL : final remarks

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Institutional support

Preparing teachers (training) ... and students!

Research your own practice

Collaboration and Creativity and Commitment!

# Referências (algumas)

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