

Problem Based Learning Tool

A plug-in for Moodle

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- 2 Problem Definition
- 3 Related work
- 4 Design
- 5 Features
- 6 Implementation
- 7 Conclusion

Outline

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Problem Based Learning

Definition

Problem Based Learning (PBL) is a student centric teaching-learning strategy, where students solve a problem or problems in a group to achieve the learning objectives(LO).

Advantage

Advantages of PBL

- Problem-solving and Research skills
- Social skill
- Motivation
- Implementation in courses [9, 10, 6, 8, 13, 15]

Motivation

On-line tool is required?

- Assessment [17]
- Collaboration
- Communication
- Free Riders [11]
- Time Consuming

Moodle is not enough?

- No tool available in Moodle

Moodle Integration

Why Moodle?

- **Code:** Open Source

Moodle Integration

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- **Plug-ins:** Creation of new plug-in possible. ~750 plug-ins available
- **Users:** Almost 36 million
- **Registered Site:** More than 50,000
- **Support:** Very active community

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Problem definition

To design and implement a tool, as a plug-in for Moodle to **support** Problem Based Learning (PBL) courses in more **structured** and **better** way than existing LMSs.

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Related works

- Some tools developed to support PBL.
 - [INDIE](#) [16]
 - [CoMMIT](#) [12]
 - [PjBL Module](#) [1]
- **Limitations:**
 - Stand alone system
 - Does not have support for all the steps
 - Collaboration

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Moodle Integration

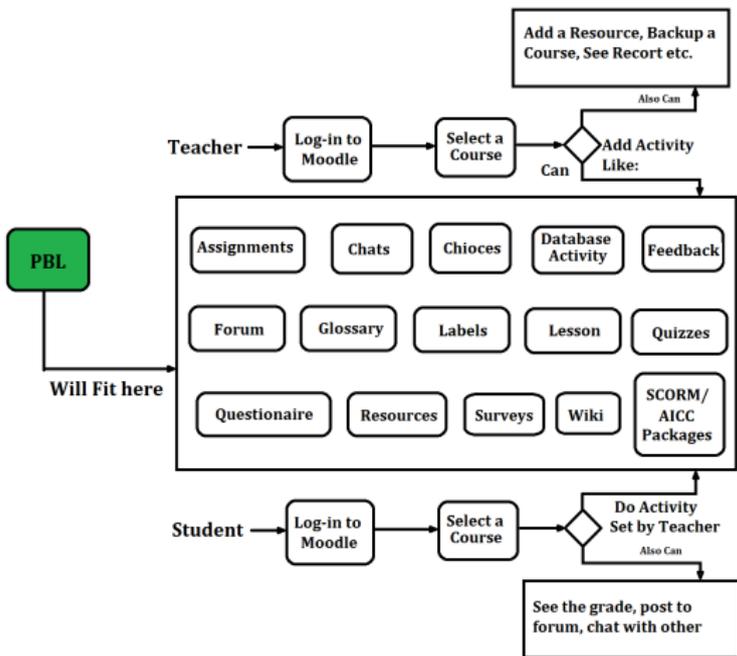


Figure: Integration in Moodle

Moodle Integration

Weekly outline

News forum

15 April - 21 April

22 April - 28 April

29 April - 5 May

6 May - 12 May

13 May - 19 May

Add a resource... Add an activity...

Add an activity...

Assignments

- Advanced uploading of files
- Online text
- Upload a single file
- Offline activity

Chat

Choice

Database

Forum

Glossary

Lesson

PBL

Project tool

Quiz

Rubrics

SCORM

Survey

Wiki

PBL MODULE

Rubric MODULE

Figure: Integration in Moodle

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Rubric Module

What it is?

Rubric is an assessment tool. Rubrics are generally used to assess quality or quantity of work, behaviour or learning.

Rubric Module

Type of Rubric

- Peer evaluation
- Self evaluation
- Questionnaire

Process Flow

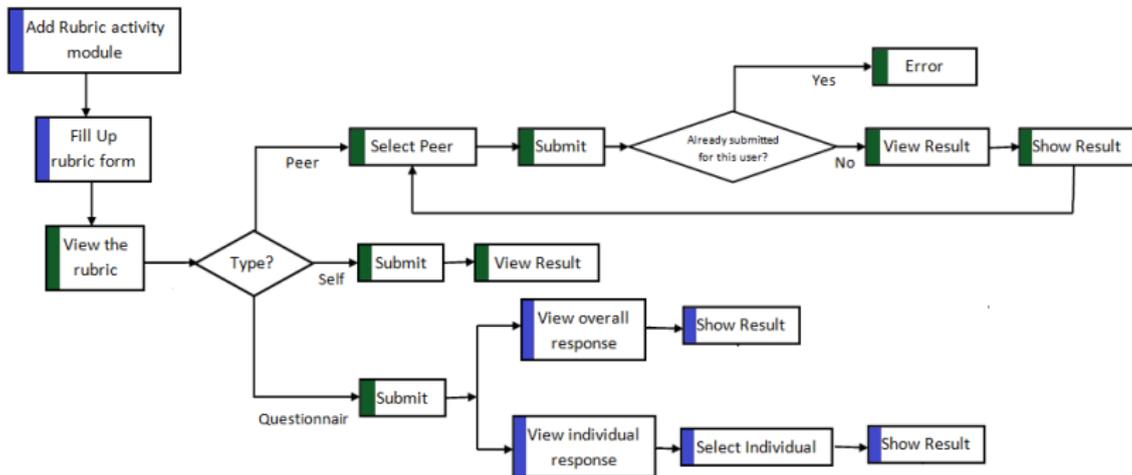


Figure: Rubrics process flow

PBL Module

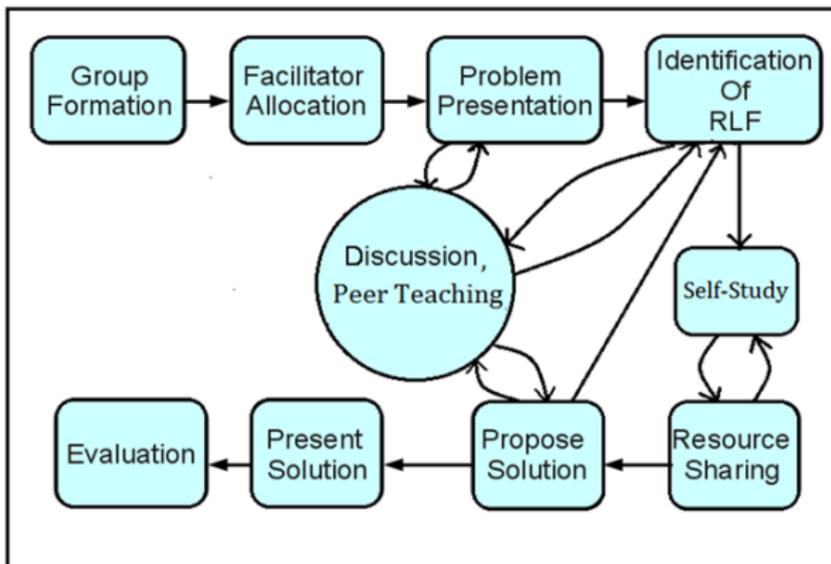


Figure: Different steps in PBL

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Activity Module Development

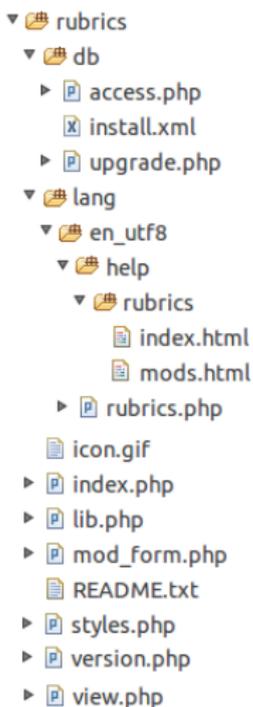


Figure: Activity module directory structure

Activity Module Development

Rubrics Module	
File Name	Purpose
index.php	List all instances of the functionality the module provides in a course.
lib.php	Contains all the function definitions.
mod_form.php	Form displayed to add the activity is coded here.
version.php	Contains the current version number of the module.
view.php	Homepage of the activity
icon.gif	Icon of the module
db/access.php	Capabilities are defined here.
db/install.xml	Database tables are defined in xml format
db/update.php	Use to update the database.
lang/en_ut8/help/rubrics.php	Different abbreviations of the module are stored.
lang/en_ut8/help/rubrics/index.html	This lists all the help files for the module
lang/en_ut8/help/rubrics/mods.html	Main functionality of the module described

Table: Purpose of different files in an activity module in Moodle

PBL module

Sub activities in PBL

- **Discussion:** Chat, Forum and Wiki activity module of Moodle
- **Submission:** Assignment module of Moodle
- **File Sharing:** File Manager Block For Moodle

PBL module

Sub activities in PBL

- **RLF:** Developed to use within PBL module
- **Solution:** Developed to use within PBL module
- **Rubric:** Activity module of Moodle

PBL module

Sub activities in PBL

- **Report:** Developed to use within PBL module
- **Search:** Uses the global search feature of Moodle

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Conclusion

Summary

- PBL and Rubric activity module
- PBL tool has support for all the steps of problem based learning
- Rubric can be used as a stand alone tool

Future Work

- For usability test some controlled experiment need to be done
- Group creation and facilitator allocation must be done at the module level

Thank You !

Questions ?

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