iMOOC: Building a platform from existing software components

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The challenge: build an iMOOC course
- Learning experience
- Social interaction
- Game assessment
- Access
- Weekly teacher feedback

The ECD project
- The iMOOC was conceived for the ECD project, which requires the integration of several MOOC tools and services.
- The current learning platform in the project is based on OpenEdX,
- The course materials, however, need to be updated and standardized.
- The courses are also stored in a cloud-based repository, which can be accessed by the learners.

The integration: Moodle and Egg
- Moodle is the platform used for the course.
- Egg is used for the assessment.

The results: iMOOC course on Climate Change
- Lessons in climate science, energy, and renewable energy
- Tools for learners to monitor and calculate their carbon footprint
- Networking opportunities with other learners

The infrastructure:
- Only one re-usable infrastructure
- Can support up to 1,000 students
- The infrastructure is easily split in components with well-defined and reusable code, which are then combined into the final platform.

The advantages:
- The platform is modular and well-supported
- The system has already been tested in
- The system is scalable and can be extended
- The system is adaptable to different contexts
- The system is user-friendly and easy to use

The options:
- Build a new platform
- Select an existing one
- Combine two platforms

Improvements:
- Multiple courses
- Social network integration
- An integrated calendar
- Questions / Suggestions

The primary language is English.
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The infrastructure
- Only one simple local instance
- Very simple to administrate
- The infrastructure is very quick in terms of setup and
  development, and the backend provides the database, and the
  frontend can be more front-end
  - Moodle and Lapa libraries

The options:
- Build a new platform
- Select an existing one
- Combine two platforms

The advantages:
- The service can be expanded and
  self-adaptation
- Only one instance to maintain
  - This reduces the risk of having
  - The frontend has been developed
  - The module stores participants' grades
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The ECO project
The iMOOC was connected to the ECO project. The
project aimed at integrating several online platforms.
- Moodle, with its own database
- Lapa, with its own database
- The platform is integrated
  - The platform is integrated
  - The platform is integrated
  - The platform is integrated
  - The platform is integrated

The results:
- iMOOC course on Climate Change
  - Self-assessment quizzes, video and audio resources
  - Self-assessment quizzes, video and audio resources

Improvements:
- Multiple courses
- Social network integration
- An integrated search
- Questions / Suggestions?
The challenge: build an iMOOC course

Requirements:
- learning resources;
- social network;
- peer assessment;
- quizzes;
- weekly teacher feedback.
The options:

- Build a new platform;
- Select an existing one;
- Combine two platforms.
The integration: Moodle and Elgg

- Moodle act as a LTI producer to Elgg
- The user sees Moodle in a Frame, does not know that there are two systems
The advantages:

- the source code is mature, and well supported, with already many users testing it;
- all the functionalities required were already implemented for a long time;
- the most complex, peer assessment, evolved over time in Moodle, and is now easy to use
- both platforms are open to new plugins, that can be useful if some new functionality is needed
- we only need to maintain the integration code
The results: iMOOC course on Climate Change

- Analysis done in page views, users and posted messages
- Easy to do since both platforms have activity reports and record all events

<table>
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<th>Days with pageviews</th>
<th>0</th>
<th>1-20</th>
<th>21-50</th>
<th>51-100</th>
<th>&gt;100</th>
<th>Total users</th>
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<tr>
<td>1</td>
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<td></td>
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<td>39</td>
<td>127</td>
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<td>39</td>
<td>127</td>
<td>1,397</td>
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<tr>
<td>&gt;100</td>
<td>494</td>
<td>64</td>
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<td>89</td>
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<tr>
<td>200-500</td>
<td>28</td>
<td>4</td>
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<td>89</td>
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<tr>
<td>Total users</td>
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<td>74</td>
<td>66</td>
<td>212</td>
<td>127</td>
<td>1,397</td>
</tr>
</tbody>
</table>

Table 2 reveals that 45% of the users are active during the course, even considering that only 3% completed the evaluated activities.
The infrastructure

- Only one simple virtual machine was enough to 1000 participants
- The infrastructure is easily split in frontends with web server and backend with the database, and the backend can even host both Moodle and Elgg databases.
The ECO project

- The iMOOC was connected to the ECO project, that requires the integration of users of several MOOC platforms:
  - This task did not require new code
- The central learning analytics required in the project, required new code, but not changing existing code, that is vital to keep low maintenance costs.
- The courses run in this project, required also a simple virtual machine
- This confirms the advantage of reusing existing projects with mature code
Improvements:

- Multiple courses;
- Social network integration;
- An integrated search;

- Questions / Suggestions?