An Evaluation of Open Source E-Learning Platforms Stressing Adaptation Issues

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Motivation and Aims

- E-Learning platforms become very successful
- Adaptivity become more and more important

→ How much adaptivity is supported in today’s e-learning platforms?

→ Which platform is most suitable for extending it to an adaptive one?
  - General functionalities and capabilities
  - Adaptation issues
Evaluation Approach

- Applying four minimum criteria to 36 platforms
- Installing and testing the remaining 9 platforms
- Applying the Qualitative Weight and Sum Approach
  - Weight: using symbols (e.g., *, #, +, |, 0)
  - Performance: weight represents the maximum performance value (e.g., + implies +, |, 0)
  - Result: summarizing all performance values per symbol (e.g., Platform A: 3*, 4#, 2+ Platform B: 4*, 3#, 2+ Platform C: 4*, 2#, 3+)
  → One very good criterion and one very poor criterion are not equal to two moderate criteria

- Ranking: Maybe further analysis is necessary
Categories, Subcategories & Attributes

8 Categories:
- Communication tools
- Learning objects
- Management of user data
- Usability
- Adaptation
- Technical aspects
- Administration
- Course management

Adaptation:
- Adaptability (*)
- Personalization (#)
- Extensibility (*)
- Adaptivity (*)

Adaptivity (*):
- Annotations of learning objects
- Annotations of communication objects
- Static adaptation of course content
- Dynamic adaptation of course content

*: Annotations and dynamic adaptation
#: Dynamic adaptation
+: Two attributes available
|: One attribute available
0: No attribute available
Results of the Adaptation Category

<table>
<thead>
<tr>
<th></th>
<th>Adaptability</th>
<th>Personalization</th>
<th>Extensibility</th>
<th>Adaptivity</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum values</td>
<td>*</td>
<td>#</td>
<td>*</td>
<td>*</td>
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<td>ATutor</td>
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<tr>
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<tr>
<td>Spaghettilearning</td>
<td>+</td>
<td>#</td>
<td>+</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

Legend:
* … very good
# … good
+ … moderate
| .... poor
0 … very poor / not available
Results of the Evaluation

Legend:
- very good (*)
- good (#)
- moderate (+)
- poor (|)
- not available / very poor (0)
Conclusion & Ongoing Work

- Evaluation of open-source e-learning platforms
- Using the Qualitative Weight & Sum Approach
- Moodle obtained best values
- Adaptivity is included very rarely but extensibility is supported well

Ongoing Work
- Meta model for adaptive courses
- Extend Moodle with adaptive features as proof of concept prototype