Supporting authoring of Multiple-Choice Questions in Human-Computer-Interaction using PeerWise

PeerWise is a web-based, free software that supports authoring, sharing, answering, evaluating and discussing multiple-choice questions (MCQ). Students can author questions, as well as answer and rate questions generated by their peers. PeerWise is widely used, mostly in STEM subjects (typically exact sciences), which lend themselves naturally to assessment via MCQ.

Students can gain badges for reaching specific milestones related to their engagement (in authoring, answering, and commenting on questions). Lecturers can keep track of students’ participation.

Table 1: Participation

<table>
<thead>
<tr>
<th></th>
<th>Before 18 March</th>
<th>18 March – 26 April</th>
<th>After 26 April</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUTHORED</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions authored</td>
<td>358</td>
<td>167</td>
<td>6</td>
</tr>
<tr>
<td>Students</td>
<td>113</td>
<td>59</td>
<td>2</td>
</tr>
<tr>
<td>Questions authored per student</td>
<td>3.17</td>
<td>2.83</td>
<td>3.00</td>
</tr>
<tr>
<td><strong>ANSWERED</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions answered</td>
<td>1021</td>
<td>1176</td>
<td>6482</td>
</tr>
<tr>
<td>Students</td>
<td>115</td>
<td>59</td>
<td>65</td>
</tr>
<tr>
<td>Questions answered per student</td>
<td>8.88</td>
<td>19.93</td>
<td>99.72</td>
</tr>
</tbody>
</table>

Observations:
1) The majority of questions were authored and answered directly prior to the two participation deadlines.
2) Significant use of PeerWise as a tool for exam revision.
3) Minimum effort approach by some students brought down overall question quality.
4) Students felt there was a lack of moderation from facilitators of question quality.
5) Badges motivated some (but not all) students.

Suggestions:
- Facilitators should seed the question pool early on with examples of good questions.
- More transparency needed in moderation, e.g. “Administrator comments”.
- Students need higher incentives for good quality questions. Facilitators could issue “Revise and Resubmit” warnings to authors of poor quality or repeat-questions.
- One deadline per question would mean questions cover a wider range of course content (our questions were biased towards topics covered prior to 18th March (Figure 3).

Aim:
Can we support assessment in non-STEM subjects via student-authored MCQ software such as PeerWise?

Context:
- Individual coursework: in COMP2213 “Interaction Design”
- 5% of module mark for student participation in PeerWise
- Question quality not marked, however, irrelevant or inappropriate questions were removed by the lecturers.
- Students required to author four questions and answer four questions on PeerWise (one of each by 18th March deadline) in order to achieve participation mark.
- Questions were required to relate to a chapter of the module textbook.

REFERENCES
[1] PeerWise guide for students (last accessed 12th September 2017)
https://peerwise.cs.auckland.ac.nz/docs/students