

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



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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.

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

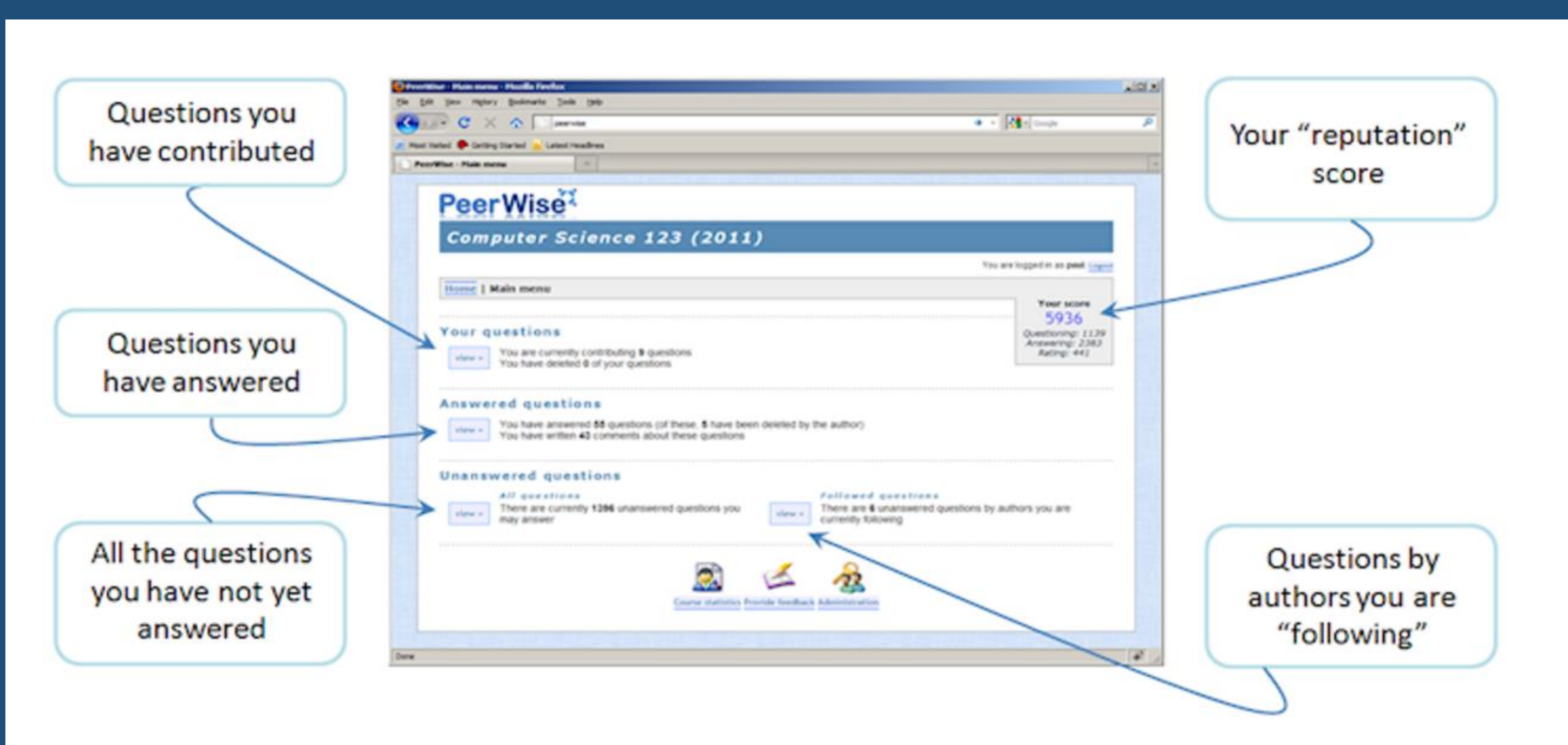


Figure 1: PeerWise interface (student view) [1]

## 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

**Badges**

As you participate and contribute to PeerWise, you can earn badges.

**Basic** badges are easy to earn but can only be earned once.  
**Standard** badges are slightly more difficult to earn but can be earned multiple times.  
**Elite** badges can be difficult to earn and can be earned multiple times.

Each badge is represented by an icon. The list below shows the badges you have currently earned, and describes what is needed to earn additional badges.

Year	Badges	Description	Who has this badge?
2011	"Question author" badge	For contributing your first question to PeerWise	311 people
2011	"Question answerer" badge	For answering your first question on PeerWise	317 people
2011	"Star-crossed" badge	For the first time you either "agree" or "disagree" with a comment	54 people
2011	"Comment" badge	For the first time you write a comment about a question	48 people
2011	"Author-reply" badge	For the first time you write a reply to a comment written about your question	16 people
2011	"Follower" badge	For the first time you "follow" a question author	13 people

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.

Figure 2: Some PeerWise badges [1]

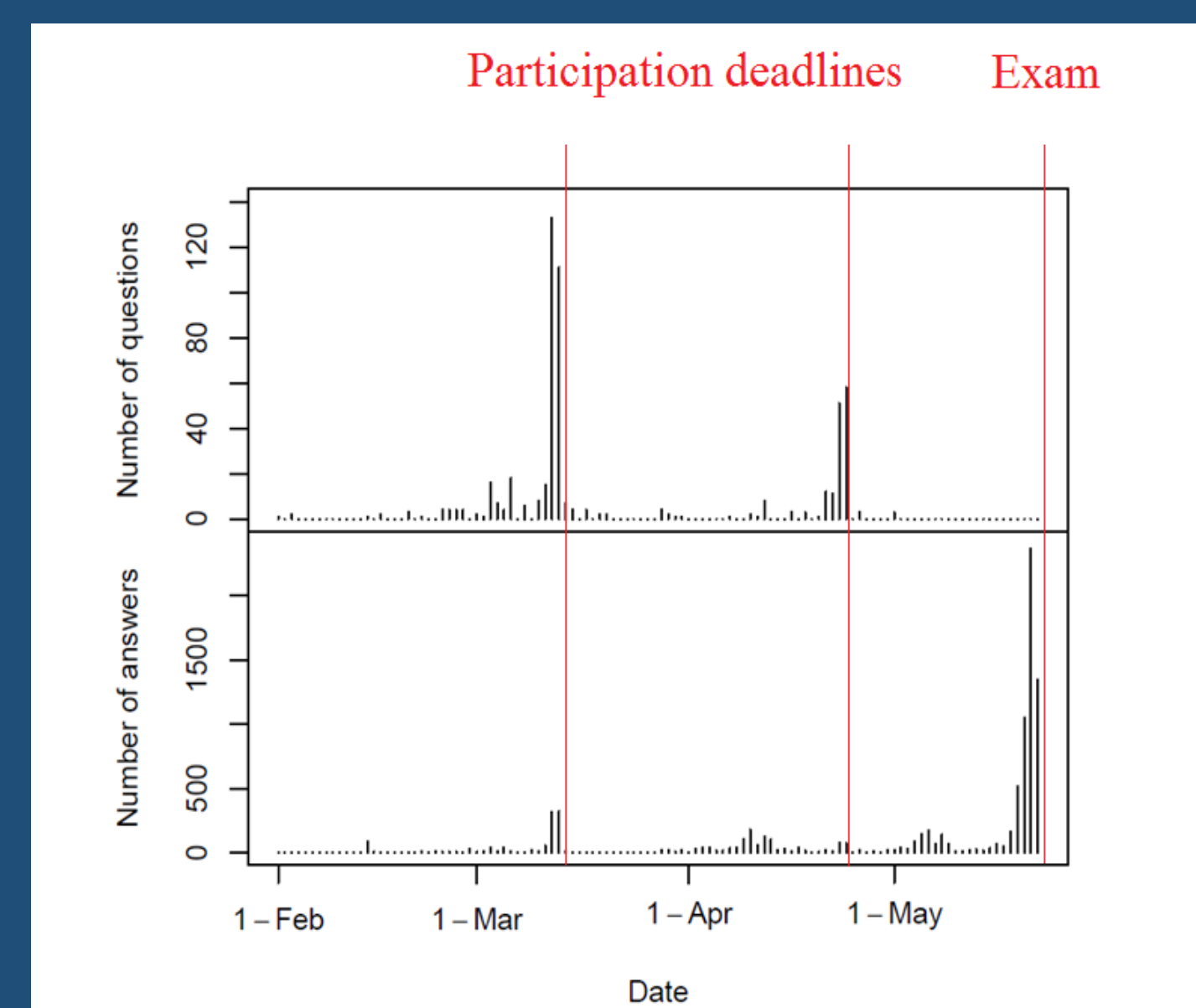


Figure 3: Questions authored and answers submitted over the semester

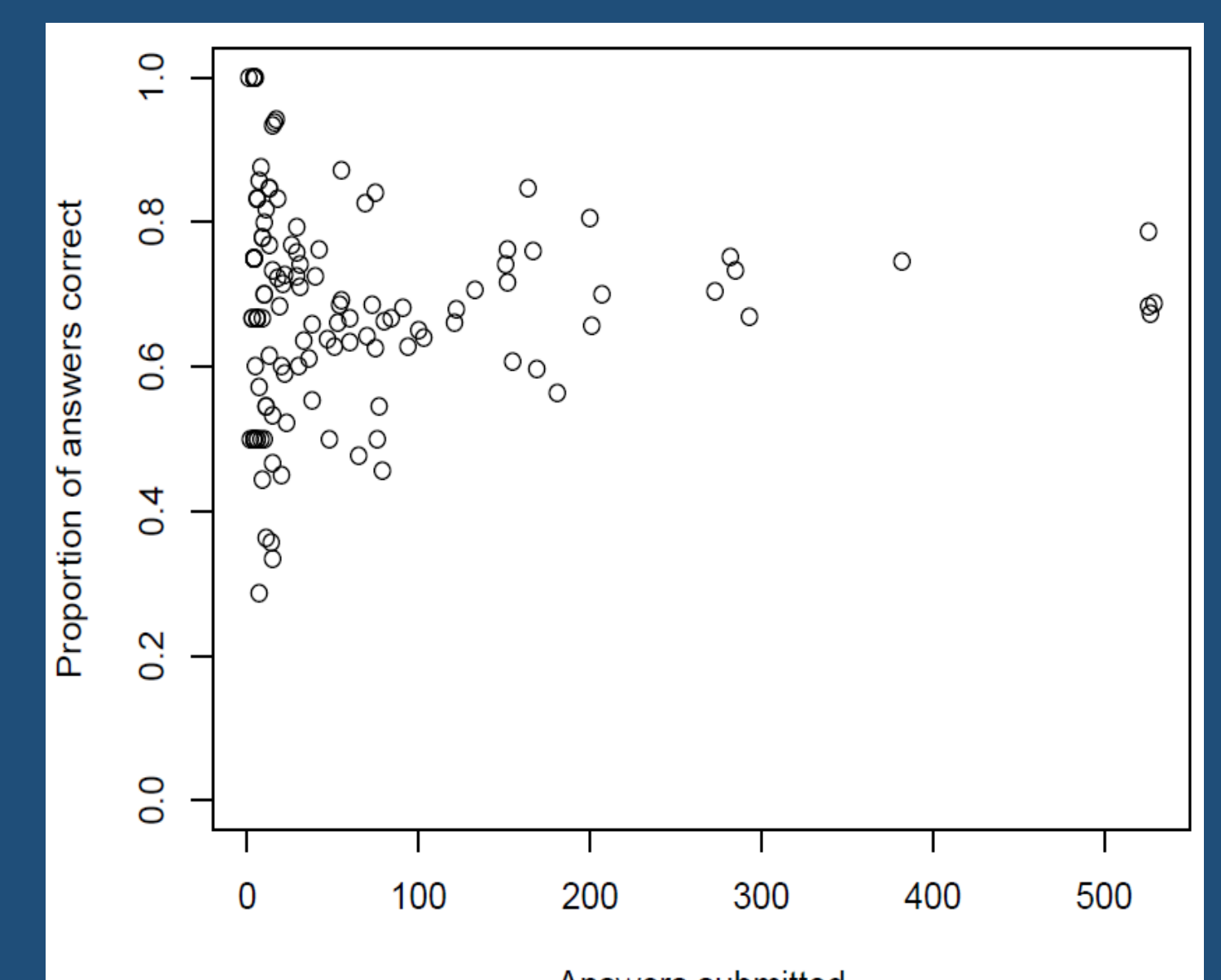


Figure 4: Proportion of correctly answered questions

## 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 18<sup>th</sup> March deadline) in order to achieve participation mark.
- Questions were required to relate to a chapter of the module textbook.

## 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 18<sup>th</sup> March (Figure 3)).