Guidelines for implementing and evaluating “PeerWise” within a Programme Module

What is Peerwise?

Peerwise is a free to use piece of software that enables module tutors to set up and use a “student led” repository of multiple choice questions regarding a particular subject. The idea is based around principles of peer learning. Students are provided with access to the repository for the purpose of creating, reviewing and answering multiple choice questions. Individual students create multiple choice questions, design the answers and provide justification of the answer they have deemed to be correct. Users of the repository then comment on the clarity and quality of the question, and the quality of the explanation for the answer. Through this process, questions are rated for quality and individual authors (anonymised by number) can be tracked.

Users of the repository are able to see how their answers to questions rate in comparison with other users and league tables of answers can be created. Use of the software in Australia has seen very positive results, with students enlisting about the benefits of learning from your peers, and of creating the questions and answers in consolidating their study. For more information about the system and how it may benefit students, the following link is very useful:

http://www.youtube.com/watch?v=j1tN006KEWo.

The following guidelines outline the process of implementation and evaluation of the tool. For more information or guidance, please feel free to contact Teri Taylor at teri.taylor@northumbria.ac.uk

To begin, access the Peerwise tool at http://peerwise.cs.auckland.ac.nz/. At this page, use the drop down box to identify Northumbria University.
Once into the system, you have two choices. The School of Health, Community and Education Studies is already registered with Peerwise and therefore, already has a username and login if you wish to use an existing account. To find the relevant login details, please contact Teri Taylor at the address given above.

Alternatively, you can use the “registration” tab to register yourself as a module tutor. This is a quick and easy process that will provide you with your own login details, via email within approximately a 24 hour period.
Once logged into the system, you can create a new module repository. This is a simple, step by step process accessed through the “create new course” tab.

You will be asked to enter a name for the repository which will generate a number. This number is the identification number for the repository which you will need to provide to students so that they can access the tool.

Once you have established the module, you will need to decide upon a method to identify your students. Each student will need an individual number or code for them to use in order to create or answer repository questions. It is recommended that you use the students’ ID numbers as these are easy to access for the students. These should be entered as a list with the student number identifying the student name.

Once you have entered the identification list, the repository is set up and ready to run. Providing students have the repository number and their identification number, they can access, create and follow questions within the tool. There are clear instructions on how to do this, for students, when they enter the Peerwise webpage or at: http://peerwise.cs.auckland.ac.nz/docs/students/. These instructions are comprehensive and may provide useful information for new instructors.
Evaluation

Peerwise provides statistics and information in a similar way to Blackboard. As such, there are many opportunities for evaluation of the tool. A number of research projects have been published that outline the influence of Peerwise on student learning or performance. Within UK institutions, Edinburgh and Glasgow feature prominently in the literature.

Edinburgh, Physics and Astronomy department (Bates et al., 2011b) outline that, “In physics, the main reason for adopting a system like Peerwise is to move students from acquiring information to using knowledge to reason and to solve problems. This addresses the recognised problem of students’ over-reliance on memorised solutions developed during previous stages of education. We would also hope for changes in motivation and attitudes. In addition, students will engage in tasks in an innovative setting to develop metacognitive awareness and effective learning strategies that are self-regulated rather than externally driven (Nicol, 2009)".

This department implemented the Peerwise system into a large cohort Physics programme as one of a number of initiatives aimed at improving and enhancing engagement and understanding. Their evaluation focused upon performance in examinations following engagement with the tool and on the quality of the questions generated within the repository. Their evaluations outline significant improvements in exam performance in correlation with levels of engagement with the Peerwise tool, and “evidence of a rich vein of student creativity that has thus far gone largely untapped within these (and other) courses” (Bates et al., 2011a)

Glasgow University have also researched examination performance stating that, “These are encouraging results, showing that for most quartiles PeerWise activity is strongly related to exam performance, and that higher engagement in the use of PeerWise appears to foster deep learning (and hence higher non-MCQ examination marks)” (Denny et al., 2008).

Various other studies from the US, Canada and Australia amongst others have also focused upon impact upon exam performance and the quality of the repository produced (Purchase et al., 2010). However, current areas of research interest focus on student perceptions of the process (Bottomley and Denny, 2011) and the potential benefits or otherwise of the Peerwise “badge” system used to reward engagement levels.

The breadth of evaluation for this tool is wide though initial evaluations are made easy through the use of Peerwise statistics.
Within the main menu, the instructor will be provided with options to review questions that have been generated.

From this page, instructors can view the student leaderboards, which will illustrate who has created and responded to the most questions. Statistics for the repository can also be accessed through the Administration tab.

Within the Administration tab, instructors can view a wide range of statistical information regarding the repository.
Repository questions can also be exported for use in formative or summative assessment. Other institutions have used the highest rated questions for the basis of formal exams. Whilst many of those interested in this tool have expressed an interest in evaluations, issues of time and commitment have been raised. As a result, Learning and Teaching are more than happy to provide support and input to the process as needed. Should any module leader wish to use and evaluate this tool, members of the Learning and Teaching team will be happy to work with them to develop an evaluation strategy, review and evaluate data and develop publication materials. Please contact Teri Taylor in this event.
Common concerns

Question and answer accuracy

From the page below, instructors can view generated question, amend, comment and delete as required. This provides an easy access to quality monitoring. However, the repository requires users of the questions to comment and rate the generated questions. Other users of the system have found this rating quickly highlights errors and areas of confusion.

Time requirement

Whilst instructors may use identified errors to indicate areas for further discussion in class, this system is not designed to be a time consuming process for the instructors. Instead, institutions using this system have found it to require little time and input aside from the initial setting up, in order to generate considerable benefits for peer learning.
References


