


PeerWise student generated content for enhanced engagement and learning


The Western Conference on Science Education
London, Ontario, Canada | July 9th – 11th 2013



Ross Galloway
ross.galloway@ed.ac.uk
The University of Edinburgh

Simon Bates
simon.bates@ubc.ca
The University of British Columbia

Paul Denny
paul@cs.auckland.ac.nz
The University of Auckland



PeerWise student generated content for enhanced engagement and learning

Overview for the session

- 1) About PeerWise
- 2) Hands-on session
- 3) Research highlights
- 4) Q&A

PeerWise student generated content for enhanced engagement and learning

1) About PeerWise


PeerWise Ask | Share | Learn JOIN NOW
Get started!

Welcome to PeerWise


To log in, select your school / institution from the list below

Just type the first few characters.


PeerWise supports students in the creation, sharing, evaluation and discussion of assessment questions.




What is PeerWise?
Students use PeerWise to create and to explain their understanding of course related assessment questions, and to answer and discuss questions created by their peers.



Any subject
PeerWise is used in a wide range of subjects, including Anthropology, Biology, Chemistry, Computer Science, Physics, Population Health, Pharmacology, Medicine, and many more...

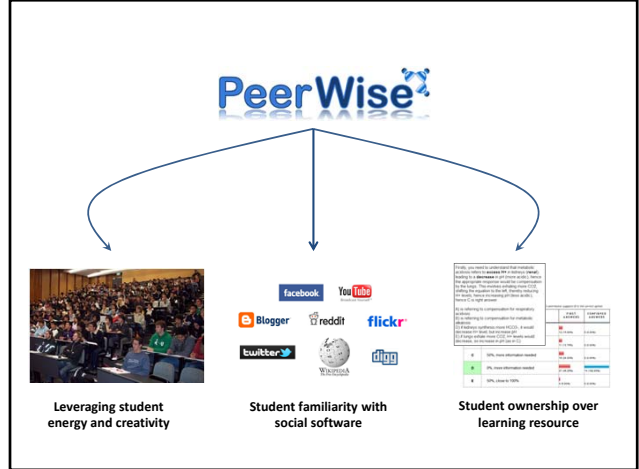


Free and easy to use
PeerWise is free and very easy to use. Students are presented with a simple, intuitive interface and instructors can easily view student content and monitor participation.



Find out more
Want to get started? View student and instructor guides, watch screenshots of PeerWise in action, and hear what students and instructors think in the Information about PeerWise section.

a web-based MCQ repository created by students



Why student authored questions?

- A student contributing a new question would develop the question stem:

Question

For diabetic ketoacidosis (low insulin, eventually leading to production of ketoacids, type of metabolic acidosis), what is the body's response to compensate for the change in pH?

Student authored question
HUBS192, 2010
University of Otago

Why student authored questions?

- And a set of plausible alternatives
- Of course, the correct answer must be indicated

OPTION	ALTERNATIVE
A	The kidneys compensate by excreting H ⁺ , thereby increasing pH level
B	The lungs compensate by inhaling more CO ₂ , thereby decreasing pH level
C	The lungs compensate by exhaling more CO ₂ , thereby increasing pH level
D	The kidneys compensate by synthesising more HCO ₃ ⁻ , thereby decreasing pH level
E	The lungs compensate by exhaling more CO ₂ , thereby decreasing pH level

Why student authored questions?

- And a set of plausible alternatives
- Of course, the correct answer must be indicated

Alternatives

OPTION	ALTERNATIVE
A	The kidneys compensate by excreting H ⁺ , thereby increasing pH level
B	The lungs compensate by inhaling more CO ₂ , thereby decreasing pH level
C	The lungs compensate by exhaling more CO ₂ , thereby increasing pH level
D	The kidneys compensate by synthesising more HCO ₃ ⁻ , thereby decreasing pH level
E	The lungs compensate by exhaling more CO ₂ , thereby decreasing pH level

Why student authored questions?

- And an explanation, in their own words
- Useful for students who answer incorrectly

Explanation

Firstly, you need to understand that metabolic acidosis refers to **excess H⁺** in kidneys (**renal**), leading to a **decrease** in pH (more acidic), hence the appropriate response would be compensation by the lungs. This involves exhaling more CO₂, shifting the equation to the left, thereby reducing H⁺ levels, hence increasing pH (less acidic), hence C is right answer.

A) is referring to compensation for respiratory acidosis
 B) is referring to compensation for metabolic alkalosis
 D) if kidneys synthesis more HCO₃⁻, it would decrease H⁺ level, but increase pH
 E) if lungs exhale more CO₂, H⁺ levels would decrease, so increase in pH (as in C)

Why student authored questions?

“You don't really understand how much or how little you know about a concept until you try to devise a good, original question about it”

“The aspect I found truly useful was the creation of questions, which reinforced much of [my] understanding while also actively making me clarify and solidify my thought processes (especially the explanation parts)”

Student feedback

The contributor suggests D is the correct option

	OPTION	ALTERNATIVE	FIRST ANSWERS	CONFIRMED ANSWERS
CORRECT ✓ Your answer agrees with the answer suggested by the author	A	0%, close to 100%	12 (16.00%)	0 (0.00%)
AGREE WITH AUTHOR ✓ Your answer agrees with the answer suggested by the author	B	100%, 50%	11 (13.76%)	0 (0.00%)
MOST POPULAR ANSWER ✓ Your answer is the most popular answer, but is different	C	50%, more information needed	16 (20.00%)	0 (0.00%)
INCORRECT ✗ Your answer is different from the answer suggested by the author	D	0%, more information needed	37 (46.25%)	14 (100.00%)
	E	50%, close to 100%	4 (5.00%)	0 (0.00%)

Written: 6:57pm, 24 May Author has: 1067 points and 9 badges

Please explain why B is incorrect - if these two proteins coexpressed in one cell they might compensate each other. one will supply the others functional active or important site.

Written: 2:22am, 25 May Author has: 174 points and 6 badges

Both proteins will be nonfunctional because the two alleles have a mutation that lead to nonfunctional proteins. The fact that the two mutations are different doesn't matter in this case. It could be possible that the son will make correct genes by recombination during meiosis but this would affect the grandsons or granddaughters of the couple.

Add a reply to this comment

Quality Difficulty

0	1	2	3	4	5
---	---	---	---	---	---

Easy Medium Hard

Badges

Points

You are logged in as paul. [Logout](#)

Your score
1440

Questioning: 36
Answering: 245
Rating: 37

Leaderboards

Most "answered" question contributor

Rank	Total number of answers
1	403
2	388
3	348
4	343
5	342

@KatieeeeJane
Katie Lamport

Only need 4 more until I have all the badges on peerwise! :D #massivegeekmoment
29 Apr via web

@iHasanCan
Hasan Can Yildirim

I'm obsessed with this @peerwise thing! I'm even in the Top 5! #nerdrage
pic.twitter.com/naRrCWJM
23 Oct via web

Morag Wilson @MoragWilson
I need help with my Peerwise addiction.
9:14 AM - 17 Mar 12

Most questions answered by a single student: 332

Number of questions you have answered: 403

TOP FIVE

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2) Hands-on session

Your turn:
open a new window in your browser

Google: peerwise

Start typing: *British Columbia.....*

Or go direct to the URL:

http://peerwise.cs.auckland.ac.nz/at/?ubc_ca

The University of British Columbia

Welcome to PeerWise

PeerWise supports you and your peers in the creation, sharing, evaluation and discussion of assessment questions relevant to your studies.

- You design the questions**
Creating a question requires you to reflect on what you are learning in a course. Explaining the answer to your question in your own words helps to reinforce your understanding. If you teach it, you understand it.
- See what everyone thinks**
Attempt questions written by your peers, and see how everyone else has answered. Feedback is immediate, you have access to explanations and you can participate in discussions. See what others think is important.
- Learn from your peers**
Search by quality, difficulty and topic to find questions of interest to you. Follow authors who contribute questions that you like, and request help when you need it. Help your peers, and let them help you.

Already joined? Welcome back...

username:

password:

Forgotten your password? Get a new one
Forgotten your username? Recover it

Not yet joined? Please register...

PeerWise is simple to use - you can access it anywhere and anytime. **New to PeerWise?** Find out all you need to know.

Registration



The University of British Columbia

Registration

Welcome to PeerWise! Registration is very simple, and consists of the following 4 steps:

- Step 1: choose a name
- Step 2: choose a password
- Step 3: enter the "Course ID" for the course you would like to join
- Step 4: enter your "Identifier" to join the course



What do I need to know before I start?

Before you start the registration process, you need to know details of the first course that you are going to join. Make sure you know the following two things. Your course instructor should have given you this information.

Course ID This number identifies the course that you are going to join

Identifier This is the information about you that will help your instructor identify you

I'm ready!

[Begin registration »](#)

Step 1 – choose a name



The first step of the registration process is where you choose your PeerWise name.

This can be anything you like, as long as nobody else is already using it and it is less than 30 characters long. It can contain lower case letters, digits, and the underscore character (or if you like, you can specify your preferred Username into the field below, and click the "Select name" button.

Username: [Select name »](#)

Our recommendation:
please use your first initial and your surname (e.g. rgalloway)

Step 2 – enter a password

Registration - Step 2

Creating new user:

- Institution: **The University of British Columbia**
- User name: **pdenny**



Password

The second step of the registration process requires you to choose a password.

Type your password into the "Password" field below, and then re-type it into the "Confirm password" field. Then click the "Save password" button.

Password: [Save password »](#)
Confirm password:

Step 3 – enter the Course ID

Registration - Step 3

Creating new user:

- Institution: **The University of British Columbia**
- User name: **pdenny**
- Password: ****

Course ID

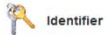
The third step of the registration process requires you to provide the

7634

This information should have been provided to you by your course instructor. If you have not been provided this information, please contact your course instructor. Once you have entered the Course ID into the field below, please click the "Join course" button.

Course ID: [Join course »](#)

Step 4 – enter your Identifier



The final step of the registration process requires you to enter your course identifier.

**3-digit number
between
100 and 500**

Welcome to the PeerWise workshop for WCSE 2013! Please enter a 3-digit number between 100 and 500

If you do not know this information, then you should contact your course instructor. Once you have entered your identifier into the field below, please click the "Submit Identifier" button.

Identifier:

That's it!



Confirm

Please review the details above of the account that is about to be created. If these details are correct, then click the "Create my PeerWise account" button below to finish the registration process.

You will then be returned to the login page, where you can log in with this new account information.

PeerWise

The University of British Columbia

Welcome! You have registered successfully. Please log in with the username and password that you chose.

You can always use this username and password to log in to PeerWise - you do not need to go through the registration process again. If there is another course that you need to join, you can simply select the "Join course" option from the Home menu.

Welcome to PeerWise

PeerWise supports you and your peers in the creation, sharing, evaluation and discussion of assessment questions relevant to your studies.



You design the questions

Creating a question requires you to reflect on what you are learning in a course. Explaining the answer to your question in your own words helps to reinforce your understanding. If you teach it, you understand it.



See what everyone thinks

Attempt questions written by your peers, and see how everyone else has answered. Feedback is immediate, you have access to explanations and you can participate in discussions. See what others think is important.



Learn from

Search by question. Follow as you request help with you.

now log in...

Welcome to PeerWise for
The University of British Columbia

Already joined? Welcome back...

username:

password:

[Forgotten your password? Get a new one](#)
[Forgotten your username? Recover it](#)

Like to join? Please register...

Registration is very simple

Choose the "WCSE 2013" course

Your courses

Active courses - you are currently a member of the following


- [WCSE 2013](#)

1) Unanswered questions: "view"



The screenshot shows a header 'Unanswered questions' and a sub-header 'All questions'. Below this, it states 'There are currently 206 unanswered questions you may answer' with a 'view »' button.

2) Choose question

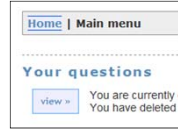


The screenshot shows a table with a 'Click to view' column and question text. The first row has '1 »' and 'During gluconeogenesis'. The second row has '2 »' and 'The following are all use'.

Answering questions

3) Select answer

1) Your questions: "view"



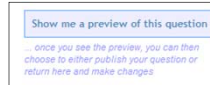
The screenshot shows a header 'Home | Main menu' and a sub-header 'Your questions'. Below this, it states 'You are currently You have deleted' with a 'view »' button.

2) Create new question



The screenshot shows a 'Create new question »' button.


3) Preview



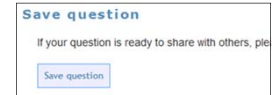
The screenshot shows a 'Show me a preview of this question' button and a text block: '... once you see the preview, you can then choose to either publish your question or return here and make changes'.

Creating a question

4) "Make changes" or "Save question"



The screenshot shows a 'Make changes' header, the text 'If there are any changes that you would like to m', and a 'Go back and make changes' button.



The screenshot shows a 'Save question' header, the text 'If your question is ready to share with others, ple', and a 'Save question' button.

3) Research highlights

Research highlights

- Relationship between activity and performance
- The quality of student-authored questions
- Influencing student behaviour with rewards

Activity and learning

- Generally, students:
 - Participate beyond minimum requirements
 - Engage in community learning, correcting errors
 - Create problems, not exercises
 - Provide positive feedback

Table 2. Expected and actual numbers of questions authored and submitted for each module

Module Title	Students	Questions Authored		Questions Answered	
		Expected	Submitted	Expected	Submitted
Chemistry (Edinburgh)	155	2x155=310	677	10x155=1550	11466
Genes and Gene Action (Edinburgh)	215			20x215=4300	19807
Physics (Edinburgh)	172	3x172=516	742	15x172=2580	7550
Physics (Glasgow)	143	4x143=572	615	8x143=1144	8085
Chemistry (Nottingham)	163	1x163=163	540		

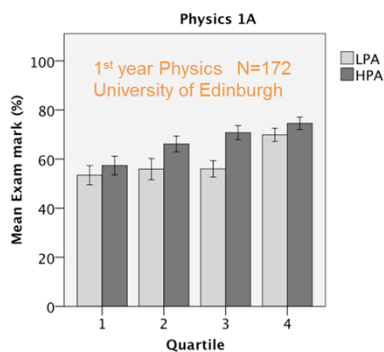
Correlation with end of course outcomes

Cohort	Number of students	Mean exam score*	Standard error	p value	Effect size
1A (N=193)					
HPA†	104	63.2	1.6	<0.001	0.29
LPA	89	53.6	1.6		
1B (N=182)					
HPA	94	61.9	1.8	<0.001	0.36
LPA	88	46.8	2.4		

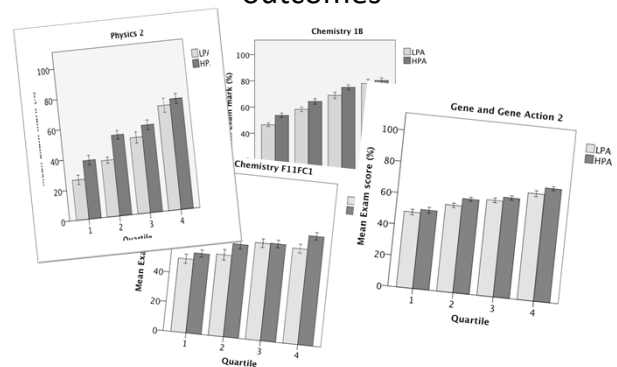
* all scores expressed as percentages

† HPA / LPA denote higher / lower than median PeerWise activity

Correlation with end of course outcomes



Correlation with end of course outcomes



Question quality

Comprehensive categorisation of >50% of repository for two successive academic years

Principal measures to define a 'high quality question'

- cognitive level of question
- explanation quality
- other binary criteria

Cognitive level of question

Category

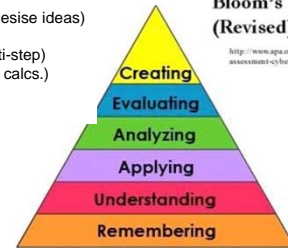
6
5
4
3
2
1

Description

Create (synthesise ideas)
Assess
Analyse (multi-step)
Apply (1-step calcs.)
Understand
Remember

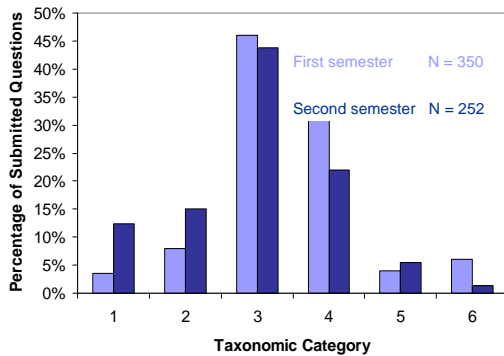
Bloom's Taxonomy (Revised)

<http://www.apa.org/ed/governance/bee/assessment-cy-beguide-v2.pdf>



Based on an APA adaptation of Anderson, L.W. & Krathwohl, D.R. (Eds.) (2001)

Results: Question level Physics 1A / 1B 2011



Do rewards work?

- Badge / achievement system
- Randomised controlled trial ($n > 1000$)

Authoring questions



Evaluating questions



Answering questions



Other



		“badges on” (n=516)	“badges off” (n=515)
Totals	Questions	1311	1309
	Answers	52599	43086
	Days active	3617	3199
Averages	Questions	2.54	2.54
	Answers	101.9	83.6
	Days active	7.01	6.21
Medians	Questions	2	2
	Answers	68	60
	Days active	6	6
Answers correct (%)		69.29%	69.26%

Distribution of answers per student differs significantly between groups: $p < 0.001$
 Distribution of days of activity differs significantly between groups: $p < 0.001$
 No difference between groups with respect to answer correctness

Implications

- Badges can have a measurable positive impact on some student actions
- No negative effects on activity or perceptions: a low-risk proposition



Please join us!



<http://www.peerwise-community.org/>

PeerWise

student generated content for enhanced engagement and learning

4) Q & A

Publications

"Student-generated content: using PeerWise to enhance engagement and outcomes in introductory physics courses"

(S. P. Bates, R. K. Galloway, K. L. McBride), In 2011 Physics Education Research Conference (NS Rebello, PV Engelhardt, C Singh, eds.), Amer. Inst. Physics, volume 1413, 2012. (Physics Education Research Conference, Omaha, NE, 2011)

"Student-generated content: Enhancing learning through sharing multiple-choice questions"

(J. A. Hardy, S. P. Bates, M. M. Casey, K. W. Galloway, R. K. Galloway, A. E. Kay, P. Kirsop, & H. A. McQueen), submitted to International Journal of Science Education

"Assessing the quality of a student-generated question repository"

(S. P. Bates, R. K. Galloway, J. Riise, and D. Homer) in review with Physical Review Special Topics:PER

"The Effect of Virtual Achievements on Student Engagement"

(P. Denny), In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '13), pp 763-772. ACM, 2013.