



Exams in Moodle

Case: Basic Chemistry Course with 800 students

Opetuksen Digi-iltapäivä / Afternoon for digital teaching

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The Course in a Nutshell

- Web course with optional workshops
- 840 students registered (n. 800 in Finnish, 40 in Swedish), about 120 via Open Uni (Avoin Yliopisto)
- Course divided in 2 parts, each ending with an Exam in Moodle (Moodle Quiz)
- Course content in a Moodle Book
- 6 Week packages on Moodle
 - 6 Moodle Lessons to guide through the Book
 - Non-graded exercises within Lessons
- 6 Weekly exercise packages as Moodle Quiz

Moodle Quiz – Exams on the Course

<u>Exam</u>	<u>#Students</u>
1A	600
1B	400
2A	500
2B	400
<u>Renewals</u>	<u>50</u>

- 2 exams, two attempts allowed for each (= 4 exams instances in total)
- Renew exams after the course
- Exam time: 2 h
- Exam open for 4 h
- 1A with no time limits due to technical problems. 170 used > 2 h.

Moodle Exams: Pros and Cons

PROs

- ü Many students at a time
- ü Deal easily with extra time –students, set up different starting times etc. using groups in Moodle
- ü Starting values can be randomized (within defined limits)
- ü Multiple-choice options can be shuffled
- ü Automatically corrected questions
- ü Correct answers and feedback can be given directly after the exam -> enhance learning
- ü Result of the exam can be published directly after the exam and are summarized in the Grade Book
- ü Grading of questions can be corrected if needed with a few clicks

CONs

- Max nr of students? **UNKNOWN!**
- Making good questions take a lot of time
- A limited amount of typical mistakes can be taken into account in grading
- Answers have to be formatted correctly (practice during the course)
- Complicated to make more advanced calculated questions (e.g., using Stack)
- Open environment in principle enables "cheating"

Exam Timing (1/2): A large course

- Our (almost) tiny disaster
 - ü The first exam was scheduled to be open for exactly 2 h
 - ü 100s of students were **logging in at the same time**, about 10 mins prior to starting time
 - ü Moodle was slowed down substantially (it **did NOT crash**).
- Problem:
 - ü **Exact capacity of Moodle is unknown**. The amount of operations at a time is known but especially login requires several operations.
 - ü **The bottle neck is the login phase**. If 100s of students log in within a few minutes, you might face freezing for a while
- Solution
 - ü We did: Exam open for a longer time (4 h) than what is allowed to use for the exam (2 h) -> **everyone will not login at the same time**

Exam Timing (2/2): Use with care

- Small to Medium-size course (< 100)
 - ü Exam can (probably) be open same time as allowed for writing the exam.
 - ü I would set +5...10 minutes anyway.
 - ü Ask students to log in well in time before
- Large course (100s)
 - ü Everyone at a time, within exactly same time limit (not recommended):
 - ü You have to make sure they log in already a lot before
 - ü Recommended: Quiz open for at least 1 h more than allowed to write the exam
 - ü Ask students not to start immediately when exam is open if they do not have to
 - ü Ask students to log in some time before they want to start
- If uncertain about resources; Contact the Moodle team well in advance

Prepare the Students!

- Make sure they are familiar with Moodle
 - ü Use Moodle in the Course
- Familiarize the students with the Moodle Quiz –system during the course
 - ü weekly exercises or similar
 - ü practice-exam
 - ü Be sure to practice the Moodle question types you want to use in the Exam
- Give clear instructions on formatting the answers
 - ü Numerical format, number of decimals, etc
 - ü How to use units
 - ü Rounding

Preparing Questions

- Questions are made into the Question bank of the course
 - ü Make separate categories for exam questions and copy the questions there
- Reserve enough (**much!**) time to make the questions and for **testing**
- Mathematical Questions:
 - ü Use **randomized starting values** (but within reasonable intervals)
 - ü **Tell in which format** you want to have the answer
- Avoid **short-answer questions** if there are many correct ways to answer
 - ü Instead, make them e.g. multiple-choice
- Multiple Choice:
 - ü **Shuffle** the answer options
 - ü Make options where **typical misconceptions** are used
- Write **feedback** for different partly or completely wrong answers, if needed (Make the exam a learning experience)

Issues to think about

- Test the important things, not the things that are easy to test
 - ü Challenge yourself when making the questions
- Limited amount of attempts for each question or not?
 - ü In exams, we had no limits
- If limited amount of attempts, do the points decrease for each attempt or not?
 - ü In Weekly exercises we limited to 3 attempts, with 33 % decrease in points for each attempt
- What is a suitable total time? Test. Leave the students a couple of minutes extra in case of technical problems
- How to minimize the risk of fellow student assistance?
 - ü Randomized starting values
 - ü shuffle multiple choices
 - ü One question per page

Exam Settings (Technical...)

- Timing/Ajastus:
 - ü Open and Closing times of the Quiz
 - ü Time Limit (for each student)
- Grade / Arviointi
 - ü For instance, set a minimum result to pass the course
- Question behaviour / Kysymysten toiminta
 - ü Shuffle / Sekoita
 - ü Deffered feedback / Palaute tentin lopuksi
- Review options: The exam is visible only during the attempt and again when exam is closed
 - ü During the attempt, only: The attempt (no hints whether answer is correct or not)
 - ü After the attempt, as the quiz is still open: Nothing (prevents from helping your mates)
 - ü After the quiz is closed: You can show everything
- Restrict access / Rajoita pääsy
 - ü If you use groups

Questions, Discussion?

- You can contact me on stefan.taubert@helsinki.fi