ADAPTIVE RELEASE IN BB

Lessons learned in 1st year chemistry course
Use of Adaptive Release in student self-testing in 1st year General Chemistry Course.

Background

• 1st year Chemistry students have always found the concept of pH and calculations using equilibrium constants difficult. Exam results and teacher experience confirm this.

• To help resolve this, a couple of short notes were concocted by experienced instructors, but it was not really having any effect, and it was just more of the same (read-and-understand teaching, although with a little user interaction required)

• At this time, Rikke Fröhlich from STLL offered help with e-learning and we decided to use these resources on improving teaching (and hopefully learning outcome) in this particular part of the course.
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What we did...
We decided on two different course of actions:
• Explanatory video lecture about the key concepts (14 min)
• Three Blackboard-based pH self-test exercises using adaptive release, with substantial explanations by wrong (and also right, in case of guessing) answers.
• Our simple philosophy was that we would talk the students through (three, could be more or less) relevant exercises, with 6-8 questions in each exercise, and then ”jointly” reach the right answer for the right reasons.
• Chose it to be an optional offer for all students – this will be reconsidered
• Required very substantial help from BB experts at STLL – THANK YOU!
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A few practical details...

Turned out to be much more elaborate and technically demanding than first anticipated. Seems that Blackboard is not ideally suited for this kind of approach.

I’ll walk you through what a typical student would have to do to answer a single question to show the point.
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Link to Video

Let us try set 3
Use of Adaptive Release in student self-testing in 1st year General Chemistry Course.

Click to start

Explanatory text..
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Use of Adaptive Release in student self-testing in 1st year General Chemistry Course.

Window 3

Question text, and multiple choice answers

Click to answer
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Window 5

System generated text

Click to move on
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Window 6

Question text – I choose the wrong answer...

Feedback window

Click to move on
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Window 7

Return to start window

To move on for another attempt
Use of Adaptive Release in student self-testing in 1st year General Chemistry Course.

Click to start the next attempt
Use of Adaptive Release in student self-testing in 1st year General Chemistry Course.

Click to start the next attempt
Use of Adaptive Release in student self-testing in 1st year General Chemistry Course.

This time the correct answer was given.

Click to accept and move on.
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Click to start next question... And then over again...
Use of Adaptive Release in student self-testing in 1st year General Chemistry Course.

Results

• General feedback from instructors was that it was helpful...
• How many students decided to take advantage of this offer?
  • 89 students replied to the questionnaire. Of those, roughly 50% answered yes (to different extents), 60% watched the video (once or more)
• Concerning video:
  • 75% found it useful to some extent or better
• Concerning self-tests:
  • 60% answered that the material helped the understanding of the pH concepts "very much" or "much", and another 22% that it helped "somewhat".
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Conclusions

• Adaptive release is a very useful teaching tool with large potential benefits, but slightly cumbersome in BB.
• Getting students to use the material requires a lot of legwork – involving instructors is important.
• Critical for success is the creation of relevant questions (LARGE thanks to Emil Møller, who created the questions!) – start in good time is very important!
• This was for 1st year students, who may be more easily persuaded to use such online facilities. If they find out that it works at this point, they are more susceptible to use it in future courses.