INVITED SYMPOSIUM SIG-DT,
THEME: TEST-ENHANCED
LEARNING MEETS
LEARNING ANALYTICS.

USING ONLINE QUIZZING AND QUIZ RESULTS TO IMPROVE
STUDY SUCCESS

SILVESTER DRAAIJER
VRIJE UNIVERSITEIT AMSTERDAM
ONLINE QUIZZING

Perfect for data-collection of learning activity and acting on it!
Mcdaniel, M. A. et al. (2007)
Karpicke, J. D., & Roediger, H. L. (2008),
Roediger, H. L. I., & Karpicke, J. D. (2006)
Recall test (Short Answer) have stronger effects than recognition tests (MCQ).
E-assessment by design, Nicol, D (2007)


CORRELATIONAL EFFECTS QUIZZING ON EXAM SCORES

> Correlation between participation rate and exam scores

> Correlation between quiz promotion and participation

> Correlation between credit given and participation
  > Kibble, J. D. (2011)


VARIATIONS

> Distributed Learning – Spacing Effect
> Ebbinghaus (1885)

> Collaborative Testing

> Question generation by students

> Lecture Clickers and other Response Systems

> Question Formats
> Various MCQ formats
> Short Answer formats


Answer Untill Correct (AUC) – test-taker selects answer, then receives feedback if correct or not, if not -> test-takers selects next answer etc: http://www.ee.stanford.edu/~russell/howto.html

Discrete Option Multiple Choice (DOMC) - test-taker is only shown one answering option of an mc question at a time, student must select correct answer when it is displayed: http://prov.g.f/1awer

Certainty Based Marking (CBM) – test-taker must provide certainty level of being correct for each option in an mc question: http://www.ucl.ac.uk/lapt/index.htm

NEW! Confidence Based Marking – seems an interesting variant of Certainty Based Marking (but uses the old term of Gardner-Medwin for it unfortunately) – first, the test-takers only see the stimulus, then rates confidence of being able to answer correctly, then is presented all options and then selects the correct option: http://gpol.fatdf

Number right elimination testing (NRET) - a variant of elimination testing (ET) - mark incorrect answers, mark correct answer and provide certainty level for it: http://fets.fiter.fsc/journals/14.4/10.pdf

Liberal (Free-Choice) Multiple-Choice Tests – test-taker may select any option of an mc question but correct option is awarded 3 points, any incorrect selected option is awarded -1 point. Main idea: System discourages guessing: http://parronline.net/pdf/v21n8.pdf, Try it at https://quizslides.com/#0/6

ANALYTICS – ACTING ON THE DATA

> Selection and timing of questions to answer
  > Repeated practice
    > Within minutes/hours/days/weeks/months?
  > Drop-off rate of successfully recalled answers

http://ondemand.blackboard.com/r91_movies/Bb91_evaluation_sending_notifications.htm

Images: http://qstream.com
ANALYTICS – ACTING ON THE DATA

> Timing of feedback – Based on Correct-Incorrectness and Speed
  > Per question
    > Answer again
  > Per group of questions
  > Per test as a whole
    > Directly after, longer and even longer

Image from Assessment Feedback Settings Sakai CLE
Image from Sally Jordan Blog: http://www.open.ac.uk/blogs/SallyJordan/?p=880
# Analytics – Acting on the Data

## Performance Dashboard

The Performance Dashboard provides an up-to-date report on the activities of all students. Information appears in a table format. Click the arrow in the header row of a column to sort the table data by that column.

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<th>Last Name</th>
<th>First Name</th>
<th>Role</th>
<th>Last Course Access</th>
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<th>Enrolled Status</th>
<th>Active Registration</th>
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CONCLUSION

> Assessment in the form of quizzing can be powerful learning aid

> Analytics can help with
  > Promotion of use
  > Decisions for repetition
  > Timing of repetition
  > Timing and type of feedback

> Two more presentations to go:
  > Sharon Klinkenberg, Universiteit van Amsterdam
  > Caroline Timmers, Universiteit Twente

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