

Self-tests with Certainty-Based-Marking in Early Years of Medical Course

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BACKGROUND

Although our Medical intake students are bright and highly motivated, they need and seek help in adapting to the differences between teaching and learning in the medical course and what they experienced at school. Even the best-achievers quickly discover that in the medical course they will not be able to learn everything presented to them, as many felt they could do with their school curriculum. Consequently, new students commonly want more (and more) guidance about the level and breadth of knowledge expected of them.

To help fill this need within the 6-Yr medical Course at Imperial College London, we have developed Self-tests using the LAPT system (www.ucl.ac.uk/LAPT, Gardner-Medwin (1995)).

Self-tests are a set of exercises, each on a specific course or topic within Yr1 and 2 of our 6-yr Medicine program.

Most of the Self-tests were written by students (a 'grass-roots' project), then checked by an academic expert.

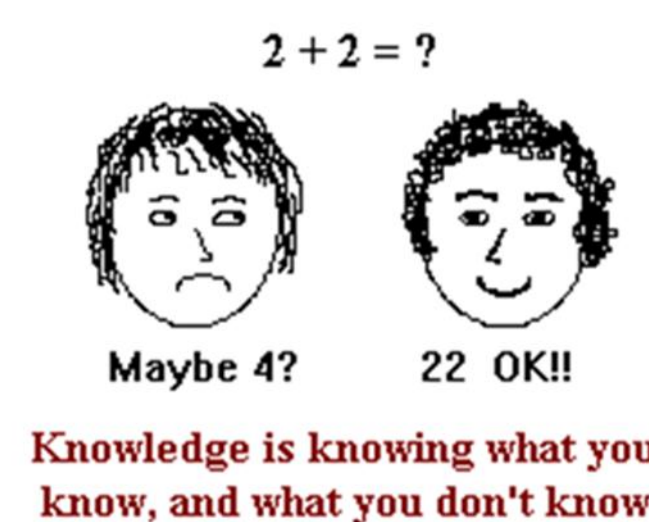
Reference

Gardner-Medwin AR (1995). *ALT-J (Association for Learning Technology Journal)* 3, 80-85.

Certainty Based Marking

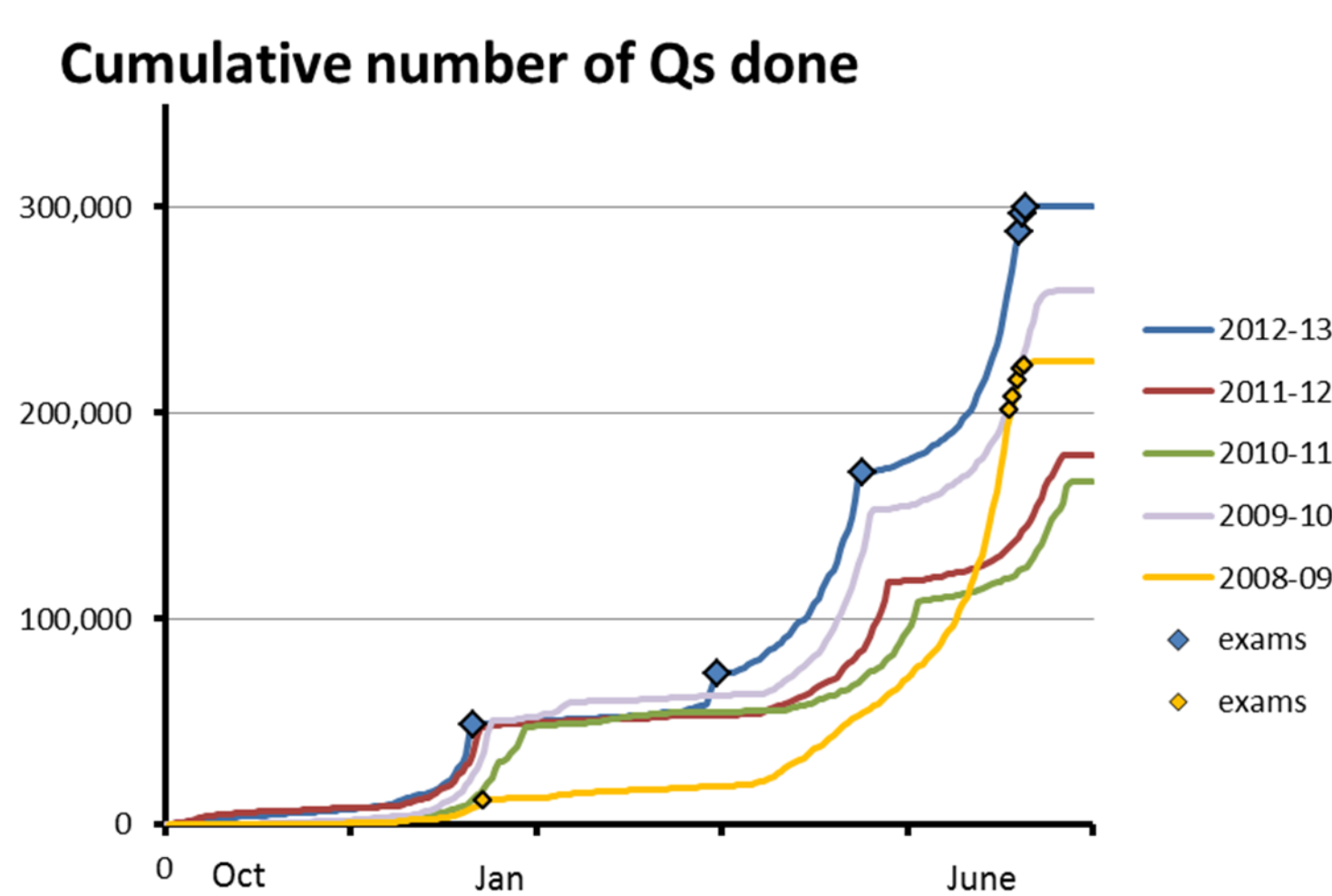
An important feature of the LAPT system is use of Certainty Based Marking (CBM) in which the student's answer is marked so as to reward not only correctness, but also identification of whether they think their knowledge is secure. The mark scheme ensures honest reporting of uncertainty.

Certainty level:	C=1	C=2	C=3	No reply
Mark if correct	1	2	3	0
Penalty if incorrect	0	-2	-6	0



The students easily grasp the rationale: "knowledge is knowing what I know, and what I don't know". It is particularly important in medicine: "As a doctor, I must recognize when I am sure enough to act, and when I need more information or help. Guessing can be a disaster for my patients."

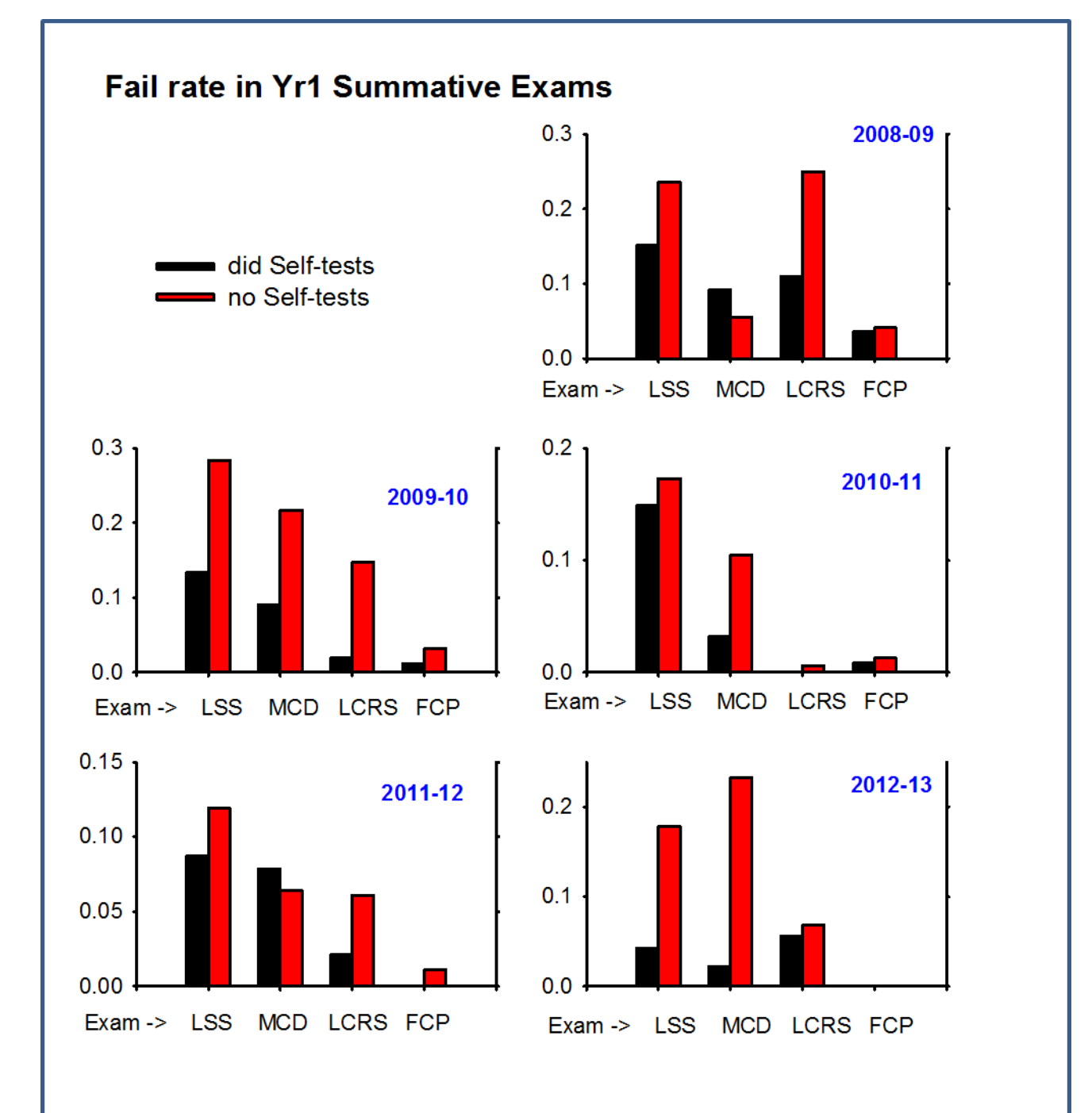
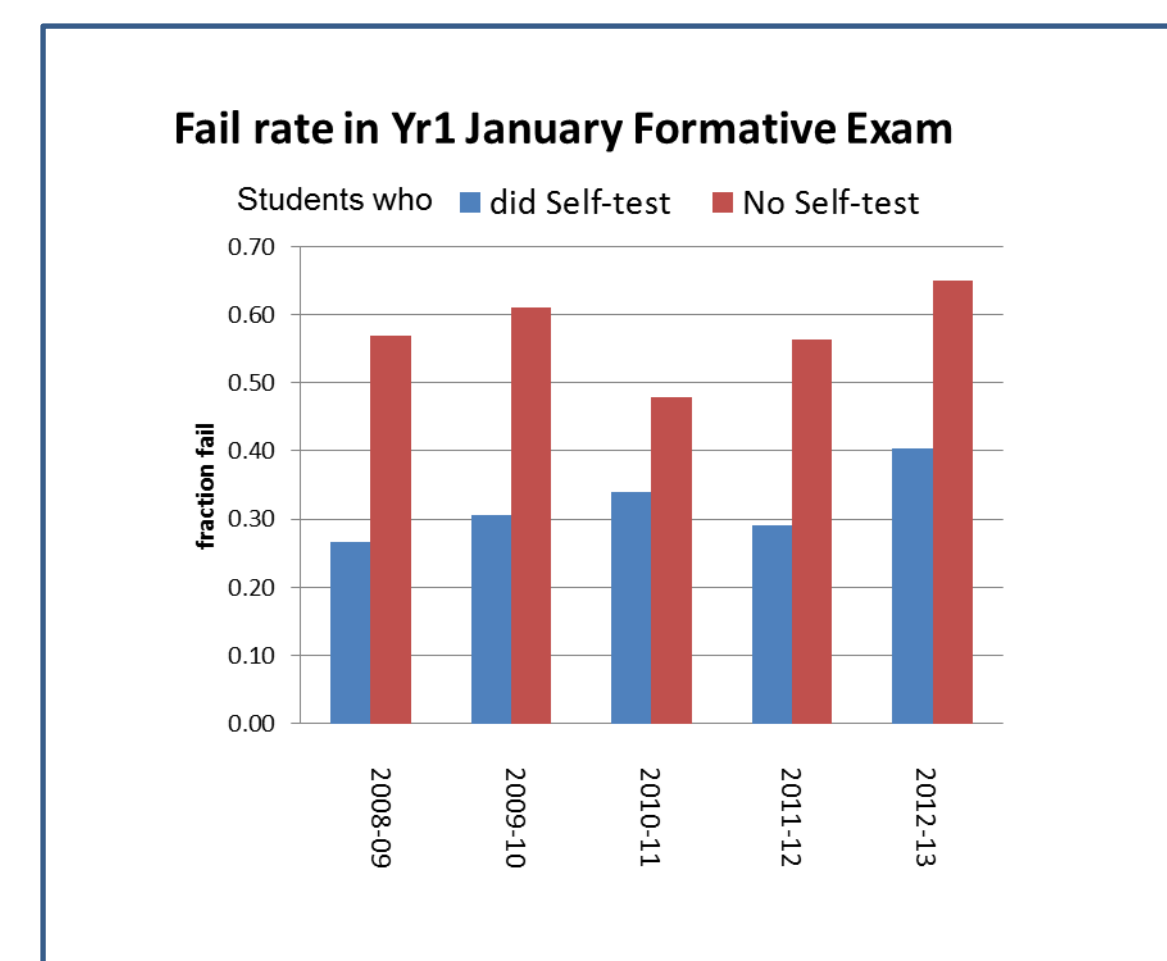
Use of Self-tests by Yr1 Medical Students. Self-tests are popular with students. Use builds up before exams.



year	2008-09	2009-10	2010-11	2011-12	2012-13
Use to Jan (% class)	49	64	48	57	64
Use to June (% class)	93	91	90	86	87
#Qs to June	225k	259k	166k	179k	300k

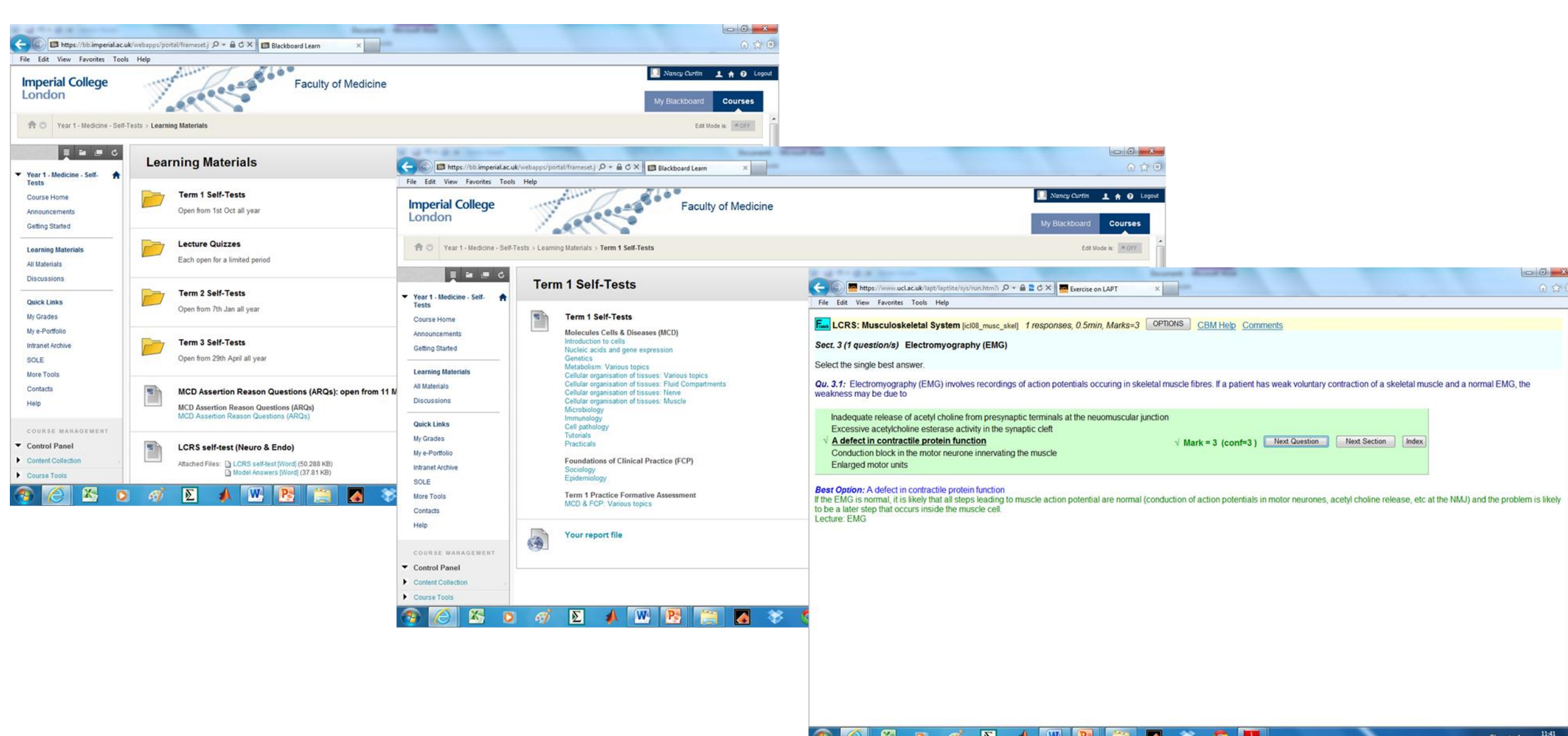
Self-test Use and Exam Performance

Performance comparisons show that the students who do the Self-tests generally have better exam results than students who do not do the Self-tests.



Features for Students include:

- *Links via BlackBoard Learn for use on personal computers or tablets,
- *Approximately 2,100 questions in 58 exercises that map onto the Imperial course,
- *Can do any number of repeat attempts,
- *Instant marking of each answer as it is entered,
- *Instant explanations of answers,
- *Student comments are shared, anonymous, and linked to each exercise,
- *Personalized spread-sheets of performance, including certainty.



Features for Teaching Staff include:

- *Many questions types can be used (SBA, EMQ, ARQ, T/F, etc.)
- *Summary spread-sheets of student performance,
- *Analysis of correctness and certainty for each question,
- *Editing facilities (which also can be available to students on a wiki basis),
- *Comments emailed to designated staff for each Self-test.

