

The effect of an online adaptive learning tool on Access to Science & Engineering students



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Access to Science & Engineering

2003-2013

➤ Old structure

- All did sem 1, only Eng did sem 2
- 4/5 weeks devoted to foundations
- 40% (S) & 70% (E) for progression

2013-

➤ New Structure

- All students take maths in both sem
- Broader curriculum (stats & prob)
- 60% (S)



New Initiatives

- 9 hours of pre-course support in MSC
- Interview followed by Diagnostic Test
- Late night opening of MSC, Mon & Wed
- 3-hour intro to RealizeIT software
- 40 days access to RealizeIT

2013-2014 Pilot

Objective

To provide additional academic support in the MSC via the use of technology for at-risk students in the ASE module.



Diagnostic Test

[Access to Science & Engineering Diagnostic test](#)

Demos

[RealizeIT](#)

[RealizeITC](#)

[MyMathLab](#)

[Numbas](#)

[WileyPlus](#)

Pre & Post-test results

Student	Pre-test (out of 15)	Post-test (out of 15)
1	3	13
2	3	9
3	3	6
4	4	11
5	4	10
6	5	13
7	6	15
8	6	14
9	6	11
10	6	10
11	7	15
12	7	14
13	7	14
14	7	13
15	8	14
16	9	15
17	9	14
18	10	15
19	10	15
20	10	13
21	10	11
22	11	15
23	11	14
24	11	13
25	13	14
26	13	14
27	10	8
28	13	11

Focus Group - Learner Experience

- High level of satisfaction
- Use in your own time & at your own pace
- Little (<44 mins) & Often
- Good prep for next lecture
- Improved confidence in math basics
- Useful for catching up if classes missed
- Bite-sized chunks

Feedback

“it greatly improved my ability and confidence in quite a short space of time, my husband has always made fun of my maths abilities and now I can do things he can’t! I definitely put it down to this programme [RealizeIT]. I don’t think I could have achieved such a good mark in my maths assignments without it. To have it at my fingertips was great. You can only do the practice sheets so many times before you remember the answers but for the most part the programme had a large catalogue of questions.”

“I found the system really useful when starting a new topic in maths or when revising a topic to highlight and fill in the gaps.”

Pros

- Determine Knowledge
- Adapts to learners current state of knowledge and ability – Immediate Feedback
- Students' use is flexible (24/7)
- Teacher can adjust objectives, curricula, prerequisite networks, learning content
- Tutors CPD

Cons/Questions/Challenges/Potential

- Instructor must put in some time to design
- Embed or Supplement?
- Promote/align it to other modules!

Where to next?

- 1st Science students - *Introduction to Mathematics* Level 0 module (n=92)
- *Higher Education Access Route* (HEAR) (n=80)
- *Disability Access Route to Education* (DARE) (n=10)
- *Mature Students* (any student not included in the above groups who is 23 years or over on January 1st of their year of University entry) (n=39)
- *International Students* (typically from China and the Middle East) (n=15)
- *Access to Science & Engineering* cohort again (n=35).

Students from 8 colleges & 12 distinct degree programmes, we will examine:

(a) the differences with how students engage with the online tool both outside & inside the “classroom” and

(b) extending the strength of the adaptive tool as a remediating factor.

This study will incorporate a larger and statistically more significant sample (N=270 (approx.)).



Thank You

Any questions?

