

Different types of on-line testing, to support students' learning and promote engagement and student retention

The number of engineering students at UWE Bristol has increased substantially over the last few years and this has in part led to challenges in the delivery and monitoring of students taking the Engineering Mathematics module.

We have used e-Assessment in the form of a total of **22 weekly tests** and an **online January exam under controlled conditions** to promote engagement in the module. This approach has enabled us to efficiently identify students who were either struggling with the module or disengaging from it and so allowed us to get some such students back on track with the module in a timely manner.

We use the fully algorithmic in-house **Dewis e-Assessment system** to run all online tests and examinations. We have gained valuable experience in running online examinations over the last three years, holding these for over 300 engineering students in January 2015-2017.

One of the **major advantages** to running exams in this way, as opposed to running a traditional paper-based exercise, is that students are able to receive **rapid feedback** on their work, because their submissions are marked immediately. It also enables academics to **quickly identify those students that are at risk on the module**, enabling them to specifically target such students early on in the year, at a point where interventions are likely to yield positive results.

We have seen **improvements in module pass rates and student engagement** as a result of this e-Assessment strategy.

| year | pass-rate |
|---------|-----------|
| 2013-14 | 66.60% |
| 2014-15 | 80.10% |
| 2015-16 | 73.00% |
| 2016-17 | 75.50% |



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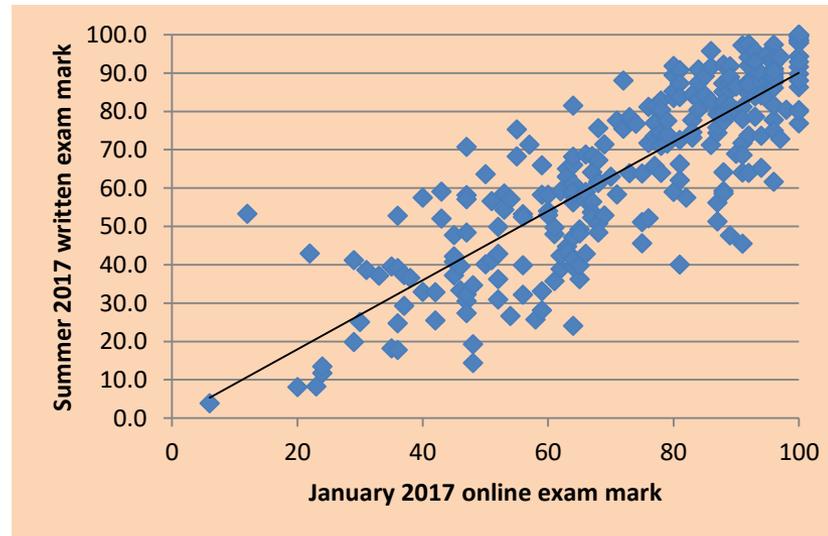
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The plot shows that there is a good correlation between the online January exam marks and the summer written exam marks.

The January exam contains questions taken from the weekly online tests. This not only motivates students to continuously engage with the tests and the important feedback they provide, but also, beside their test mark counting toward an overall coursework mark, they score an engagement mark for achieving over 40% for the test, which they can achieve over multiple attempts within a 2 week period.

Positive student feedback:

Dewis tests were really good and helpful so ensure I understood what was learnt from that week, and great for revision too.

Dewis test show clearly where I have gone wrong and I need to improve.

Dewis tests really help me keep on top of the work.