

# Computer-based Test Brunel University

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## Abstract

Brunel is well advanced in promoting good practice in the use of Computer Aided Assessment (CAA). The diagnostic tests are of CAA type, delivered on-screen with full animation at the testing level required (post-GCSE or post A-Level). 200 students are involved on programmes ranging from financial computing to mathematics.

## The Execution

The diagnostic tests are of Computer Aided Assessment (CAA) type delivered on-screen with full animation at the testing level required (post-GCSE or post-A-Level). 200 students are involved on programmes ranging from financial computing to mathematics.

## The Results

Brunel has Level Zero and Level One start levels and the capacity to assess/re-assess which level is more suitable for an individual student. Level Zero is largely consolidatory but at Level One students are taught study skills, e.g. preparing a weekly time-plan, and there is (for mathematics) some re-teaching of A-Level in a more axiomatic manner. Formative assessments are used to follow up the diagnostic tests at Level Zero, with Mathematics and paper tests at Level One.

Certainly deficiencies in students' knowledge have arisen in recent years, so diagnostic test results with student profiles go to the individual tutors with collective class profiles going to the Level One co-ordinator.

## The Barriers

All surveys appear to indicate that lack of student knowledge at the outset is a barrier to the easy progression that might have been followed in earlier years. Budgets may prevent a level of support that some students might need.

## The Enablers

The budgetary and educational barriers do not influence the smooth running of the diagnostic tests, which operate most efficiently. Every effort, via e/mailing, etc, is made to approach the individual student with his/her learning needs. Although there is no 'walk-in' centre, ad hoc arrangements are made for 1-1 fixed time slots prior to examinations and there are Level One bridging or catch up classes in the first semester only. There are links for budgetary support to the newly funded FDTL4 Physics Project at Reading University, acting in co-operation with the LTSN Maths, Stats & OR Network, to continue with the CAA development started with Mathematics.

## How Can Other Academics Reproduce This?

Brunel has been most active in promoting Mathematics (see p8) and has made a CD-ROM freely available. At least 10 other institutions have adopted some of the testing material. A new Web-based version is planned for 2003. With 5000+ questions now available the way is now being prepared for the next generation of questions/tests, which will be based upon Question Mark Perception rather than Question Mark Designer. This will allow generics to be input, e.g. MCQs to solve quadratic equations with random inputs for the coefficients (doubtless within specified margins and real/integer type).

## Quality Assurance

Brunel is well advanced in promoting good practice in the use of CAA. It was interesting to see the diagnostic test used in action. Students came in and departed, up to 70 at a time, with minimal supervision. This shows tried and tested robustness that other institutions might be wise to emulate.

Expand:  $(2v + 3)(2v - 1)(3v - 2)$

$12v^3 + 12v^2 - 5v + 6$

I don't know

$12v^3 + 4v^2 - 17v + 6$

$12v^3 + 18v^2 - 8v + 6$

$12v^3 - 14v^2 - 17v + 6$

$12v^3 + 4v^2 - 5v + 6$



Continue

Example of Mathematics question