

Research News

David Beauchamp, Karen Barden and Gill Elliott Research Division, and Gillian Cooke Group Archives

50 years of research at Cambridge Assessment

This year, 2017, marks a particular milestone as the 50th anniversary of an established and permanent research unit which is now an integral part of Cambridge Assessment, previously the University of Cambridge Local Examinations Syndicate (UCLES).

On 1 August 1967 a meeting between representatives of three examination boards, (the University of Oxford Delegacy of Local Examinations, UCLES and the Oxford and Cambridge Schools Examination Board) agreed to the joint establishment of a research unit. A Cambridge location was chosen so that the unit could access the Cambridge Syndicate's IBM 360/30 computer - for one hour a day, possibly three, if evening work could be accommodated. The Test Development Research Unit (TDRU) was subsequently installed at 11 Station Road, Cambridge, on a 5-year lease.

After a great deal of fruitful research, TDRU was disbanded in 1985 as the tension between carrying out test development at speed and research at a sensible pace proved to be too much. However, a new research department was established within UCLES: the Council for Examination Development (CED). CED existed in the heady era of the development of

the GCSE (introduced in 1988) and the IGCSE (introduced in 1989). Even the CED did not really go as far as the organisation wished in terms of pure research, so a study into research in assessment was commissioned. The results were the book *Assessment and Testing: A survey of research* by Robert Wood, and the establishment of the Research and Evaluation Division (RED) in 1994. RED was succeeded by Assessment, Research and Development (ARD) in the mid-2000s. At this time, we began publishing this journal *Research Matters*, a free biannual publication which allows us to share our research with the wider assessment community.

In 2015, the burgeoning possibilities of 'Big Data' led the division to establish a Data and Analytics team, tasked with operationalising analytics for the Group's exam boards and pioneering new applications of Data Science within Cambridge Assessment. The team introduced our series of *Data Bytes* to provide accessible visualisations of research findings to the wider public.

Just three years in, the TDRU Director reflected on his aim for 'No innovation without investigation'. Perhaps we will never know whether this was achieved, but it is a commendable ambition and, what is certain is that, it set a strong tradition for research within Cambridge Assessment which has continued ever since.



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Conference presentations

Association for Language Learning, Nottingham, UK, March 2017

Carmen Vidal Rodeiro, Research Division: *The study of Modern Foreign Languages in England: uptake in secondary school and progression to Higher Education.*

Educational Collaborative for International Schools (ECIS) Leadership Conference, Barcelona, Spain, April 2017

Stuart Shaw, Cambridge International Examinations: *The assessment of collaboration: A 21st century response to a 21st century skill.*

National Conference on Student Achievement (NCSA), Texas, USA, June 2017

Stuart Shaw, Cambridge International Examinations: *Peer Review Submission from the stance and perspective of a UK-based international awarding body.*

British Education Studies Association (BESA), Liverpool, UK, June 2017

Jackie Greatorex, Research Division: *Two taxonomies are better than one: towards a method of analysing a variety of domains and types of thinking.*

European Conference on Social Media (ECSM) Conference, Vilnius, Lithuania, July 2017

Nicole Klir, Tom Sutch and James Keirstead, Research Division: *Tweeting about exams: social media discussion of British school exams.*

Journal of Vocational Education and Training (JVET), Oxford, UK, July 2017

Martin Johnson, Research Division and Tim Oates, Assessment Research and Development: *More like work or more like school? Insights into learning cultures from a study of skate park users.*

International Meeting of the Psychometric Society (IMPS), Zurich, Switzerland, July 2017

Tom Benton, Research Division: *Can artificial intelligence learn to equate?*

European Conference on Educational Research (ECER), Copenhagen, Denmark, August 2017

Nicky Rushton and Gill Elliott, Research Division: *Developing a framework for coding students' spelling errors in English.*

Carmen Vidal Rodeiro and Joanna Williamson, Research Division: *"Meaningful" destinations: using national data to compare progression to higher education, employment and training from different education pathways in England.*

Filio Constantinou, Lucy Chambers, Nadir Zanini and Nicole Klir, Research Division: *Formality in students' writing over time: empirical findings from the UK.*

Frances Wilson, OCR: *Reform of Practical Science Assessment in England: Impact on Teaching and Learning.*

Further information on all conference presentations can be found on our website: www.cambridgeassessment.org.uk/our-research/all-published-resources/conference-papers/

Publications

The following articles have been published since *Research Matters*, Issue 23:

Bramley, T. (2017). Handbook of Test Development – review of Section 2. *Assessment in Education: Principles, Policy & Practice*. Advance online publication available at: <http://dx.doi.org/10.1080/0969594X.2017.1297294>

Bramley, T. (2017). Some implications of choice of tiering model in GCSE mathematics for inferences about what students know and can do. *Research in Mathematics Education*, 19(2), 163–179. Available online at: <http://dx.doi.org/10.1080/14794802.2017.1325775>

Constantinou, F., Crisp, V., and Johnson, M. (2017). Multiple voices in tests: towards a macro theory of test writing. *Cambridge Journal of Education*. Advance online publication available at: <http://dx.doi.org/10.1080/0305764X.2017.1337723>

Darlington, E., and Bowyer, J. (2017). The Mathematics Needs of Prospective Geography Undergraduates. *Journal of Research in Social Sciences (JRSS)*, 5(2), 11–32. Available online at: https://www.researchgate.net/publication/317381079_The_mathematics_needs_of_prospective_geography_undergraduates

Darlington, E. (2017). Coping styles of new undergraduate mathematicians. *Review of Science, Mathematics and ICT Education* 11(1), 5–17. Available online at: <http://resmictc.lis.upatras.gr/index.php/review/article/view/2801>

Darlington, E. and Bowyer, J. (2017). Students' views of A-level Mathematics as preparation for degree-level economics. *Citizenship, Social and Economics Education*, 16(2) 100–116. Available online at: <http://journals.sagepub.com/doi/abs/10.1177/2047173417716423>

Darlington, E. and Bowyer, J. (2017). The role of 'extension papers' in preparation for undergraduate mathematics: students' views of the MAT, AEA and STEP. *Teaching Mathematics and its Applications*. Advance online publication available at: <https://doi.org/10.1093/teamat/hrx009>

Darlington, E. and Bowyer, J. (2017). Decision Mathematics as Preparation for Undergraduate Computer Science. *International Journal of Modern Education and Computer Science*, 9(4), 1–11. Available online at: DOI: 10.5815/ijmecs.2017.04.01

Gill, T., Vidal Rodeiro, C.L., and Zanini, N. (2017). Higher education choices of secondary school graduates with a Science, Technology, Engineering or Mathematics (STEM) background. *Journal of Further and Higher Education*. Advance online publication available at: <http://dx.doi.org/10.1080/0309877X.2017.1332358>

Johnson, M., Constantinou, F., and Crisp, V. (2017). How do question writers compose external examination questions? Question writing as a socio-cognitive process. *British Educational Research Journal* 43(4), 700–719. Available online at: <http://dx.doi.org/10.1002/berj.3281>

Shaw, S. D. (2017). Review of section 1 (foundations) – Handbook of Test Development. *Assessment in Education: Principles, Policy & Practice*. Advance online publication available at: DOI: 10.1080/0969594X.2017.1297293

Vidal Rodeiro, C.L. (2017). The study of foreign languages in England: uptake in secondary school and progression to higher education. *Language, Culture and Curriculum* 30(3), 231–249. Available online at: <http://dx.doi.org/10.1080/07908318.2017.1306069>

Vitello, S. and Williamson, J. (2017). Internal versus external assessment in vocational qualifications: a commentary on the government's

reforms in England. *London Review of Education*. Advance online publication available at: <http://www.cambridgeassessment.org.uk/Images/internal-versus-external-assessment-in-vocational-qualifications.pdf>

Further information on all journal papers and book chapters can be found on our website: www.cambridgeassessment.org.uk/our-research/all-published-resources/journal-papers-and-book-chapters/

Reports of research carried out by the Research Division for Cambridge Assessment and our exam boards, or externally funded research carried out for third parties, including the regulators in the UK and many ministries overseas, are also available from our website: www.cambridgeassessment.org.uk/our-research/all-published-resources/research-reports/

Statistics Reports and Data Bytes

The **Statistics Reports Series** provides statistical summaries of various aspects of the English examination system, such as trends in pupil uptake and attainment, qualifications choice, subject combinations and subject provision at school. The reports, mainly produced using

national-level examination data, are available in both PDF and Excel format on our website: www.cambridgeassessment.org.uk/our-research/all-published-resources/statistical-reports/

The most recent addition to the series is: *Statistics Report Series No. 113: Uptake of GCSE subjects in 2015, by alternative school type classifications*.

Data Bytes is a series of data graphics from Cambridge Assessment's Research Division, designed to bring the latest trends and research in educational assessment to a wide audience. Topics are often chosen to coincide with contemporary news or recent Cambridge Assessment research outputs. All *Data Bytes* can be found at www.cambridgeassessment.org.uk/our-research/data-bytes/

The following *Data Bytes* have been published since *Research Matters*, Issue 23 – Interactive graphics are marked with (I):

- April 2017: *Do grades in one GCSE subject predict results in another?* (I)
- June 2017: *The most popular non-compulsory GCSE subjects in the period 2005–2014*
- July 2017: *European participation in employer-sponsored vocational training*
- September 2017: *Progress towards universal primary education*.