



# Dr Richard Millwood

## Contact

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A creative innovator, teacher and public speaker. A careful analyst, able to straddle the fields of learning & technology with a clear vision for future potential and with the capacity to realise development at scale. Richard is an experienced educator and leader, with the ability to inspire and motivate teams to work collaboratively on innovative projects and find solutions to benefit society. As an educational designer and developer, he has successfully developed and delivered radical schemes for work-focussed higher education award-bearing courses, and supervised five PhDs to completion.

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## Achievements

- 1990 – 2006 **Developing the structure and ethos of Ultralab** - one of the most successful innovation centres in learning and technology in the world and working alongside Prof Stephen Heppell to gain funding of circa £2M per annum.
- 2005 – 2006 **Directing the research and development of Ultralab** to build successful large-scale action research projects, e.g. Ultraversity, a radical online work-based degree with 62 First Class Honours graduates.
- 1990 – 2006 **Leading the intellectual, creative and ethical conceptual thinking** of ultimately a fifty-strong team of researchers, and nurturing their continuing professional development.
- 2013 – 2017 **Directing and delivering the MSc in Technology and Learning** with colleagues in the School of Computer Science and Statistics and the School of Education at Trinity College Dublin and supervising six PhD students.
- 2017 – 2018 **Proposing, developing and leading in practice** the Computers in Education Society of Ireland's community of practice, CESI•CS, by organising regional and national workshops.

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## Career History

- October 2017 – current date **Research Fellow** School of Computer Science & Statistics, Trinity College Dublin
  - built a **national community of practice** for teachers of computing in Ireland;
  - advised and developed a report for the Irish National Council for Curriculum & Assessment on **computational thinking at primary level** and
  - continuing development of the Science Foundation Ireland funded OurKidsCode project to **engage families in creative computing**.
- September 2019 – August 2020 **Computing Lead** at Eedi / Diagnostic Questions researching, developing and maintaining large online multiple-choice question bank for primary and secondary computing.
- September 2013 – September 2017 **Assistant Professor** School of Computer Science & Statistics, Trinity College Dublin – for four years Course Director and Assistant Professor for the MSc in Technology and Learning for a range of students dominated by secondary and primary teachers. Founded the Computational Thinking for Life research group. Supervised six PhD students related to computing and education.

- January 2007 **Core Education UK Ltd**  
 – current date  
**Director and founder** of this not-for-profit consultancy devoted to innovation in learning and technology, across all phases and sectors in education. Past work with Macmillan Cancer Support developed learning needs analysis tools. Other contracts were with UNESCO, the UK Improvement & Development Agency, DfES, QCA and BECTa. Richard is also establishing the National Archive of Educational Computing in this context.
- November 2012 **School of Information Systems, Computing and Mathematics**  
 – September 2013 **Brunel University**  
**Research Fellow** – working with Dr Lampros Stergioulas and Vana Kamtsiou to augment the TEL-Map EU Support Action to develop agile road-mapping for the future of technology enhanced learning in Europe and the HoTEL EU Support Action to support more effective, holistic and faster innovation cycles in European TEL.  
 I also supported Brunel's effort on the ODS (Open Discovery Space) EU project aiming to raise the uptake of TEL in European schools.
- August 2007 **Institute for Educational Cybernetics**  
 – July 2013 **University of Bolton**  
**Reader in Distributed Learning** – working with Professor Oleg Liber, Stephen Powell, former director of the Ultraversity Project to develop the Inter-Disciplinary Inquiry-Based Learning (IDIBL) research and development project. The IDIBL project is designed to create opportunity for those for whom university does not fit, make learning & teaching more fulfilling & delightful, widen participation in higher education and promote life-long learning while making learning meaningful in people's lives. More recently working with Professor Bill Olivier to develop the TEL-Map EU Support Action to develop agile road-mapping for the future of technology enhanced learning in Europe.
- September 1990 **Anglia Ruskin University**  
 – December 2006 **Ultralab**  
 January 2005 **Head of Ultralab** – Responsible for a team of fifty staff including direction, budget, fostering innovation, seeking funding, monitoring progress and day-to-day activity of this innovative university centre. A vital aspect is the delegation of responsibility and the careful creation of 'space' for free- thinking and ideas generation, whilst maintaining progress and delivering outcomes.  
 Ultralab's globally respected team offered major expertise in e-learning through facilitated community online, e-assessment, mobile learning, action research, work-based learning, new software tools, digital creativity and strategic consultancy. Ultralab enjoyed working with partners and was sponsored by governments, charities and companies. It was not-for-profit, but sought sponsorship to sustain and develop its research. Ultralab had a vision to enhance participation and delight in learning with technology, guided by a shared set of learning concepts and values. It had a proven track record inventing small and large-scale projects to explore its ideas. It had grown steadily from its inception in 1988, was based in Essex with a distributed, home-based team UK-wide and strong international links, especially in New Zealand.
- July 2004 **Acting Director of Ultralab** – Took over direction of Ultralab as a consequence of health  
 – December 2004 treatment for the then director. Took responsibility for strategic decision making and day-to-day running for six months.
- September 1998 **Reader in Ultralab** – Promoted to develop a research leadership role in a growing Ultralab  
 – June 2004 team, over fifty personnel at its peak. Mentored staff in conceptualising and strategising research approaches and gave advice on scientific and practical issues. Maintained a hands-on approach to the research and development in a multi-disciplinary manner. In this period, Ultralab developments were characterised by a growth of large-scale action research. Tasked with facilitating the management and support of these projects and their leaders and the management of a multidisciplinary and geographically dispersed development team.

September 1990 – August 1998 **Senior Lecturer** – Partnered Professor Stephen Heppell to develop an international reputation for Ultralab's research and development in the use of information technology in learning. The centre developed multimodal, interactive, participative and communicative approaches to learning using CD-ROM, DVD and internet technological development in all sectors of education. Initiated research and development projects, prepared proposals for funding.

September 1980 – August 1990 **King's College London (and previously Chelsea College London) School of Education**

**Research Fellow and Lecturer in Mathematics Education** – Contributed to the Computers in the Curriculum project over ten years in a number of roles. Responsible for the design, implementation and support of the software tools used by the project in the production of approximately 150 computer aided learning (CAL) units for the secondary school curriculum across a broad range of subjects, both sciences and humanities. Led the detailed design and development of specific units in Biology, Mathematics and Geography. Responsible for the development of staff skills in the design and programming of CAL units developed by the Project and developed extensive knowledge of the factors which contribute to the effective design and development of CAL materials. From April 1986 until September 1989, held the post of Research Fellow for Software Tools at King's College funded by the National Council for Educational Technology (NCET), who were responsible for supporting the use of computers in UK schools. From September 1988 until September 1990 responsible for the creation of an innovative new project called "Modus" to support modelling with computers in the school curriculum. In this same period taught on the Mathematics Secondary Postgraduate Certificate in Education giving lectures and supervising students on school-based practice.

September 1976 – August 1980

**St Marylebone Grammar School and Scott Lidgett School**

**Mathematics and Computer Studies Teacher** – Taught mathematics and computer studies in secondary schools in London. Developed CSE Mode 3 syllabus and examination in Computer Studies. Programmed a simulation of the game of snooker to provide a computer simulation environment for learning the mathematical concept of bearings.

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## Qualifications

1976 **BSc Mathematics and Physics**, Kings College London. Third year modules included Games, Decisions and Gambling (taken at the London School of Economics), War and Science (in the History Department), Neurobiology (Biology Department) and Advanced Computing

2014 **PhD The Design of Learner-centred, Technology-enhanced Education**, University of Bolton by practice – <http://phd.richardmillwood.net/>

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## Professional Qualifications and Appointments

2007 **FBCS CITP** – Fellow of the British Computer Society with Chartered IT Professional status

2006 **FRSA** – Fellow of the UK Royal Society for the Encouragement of Arts, Manufactures and Commerce

2011 Invited member of IFIP WG 9.7 - History of Computing

2011 Invited member of 21st Century Learning Alliance

2006 Invited member of UK Computer Conservation Society

2000 Invited Apple Distinguished Educator

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## Selected Publications

1. Bresnihan, Bray, Fisher, Millwood & Strong (2021) **Parental Involvement in Computer Science Education and Computing Attitudes and Behaviours in the Home: Model and Scale Development** ACM Transactions on Computing Education.
2. Strong G., Higgins C., Bresnihan N., Millwood R. (2017) **A Survey of the Prior Programming Experience of Undergraduate Computing and Engineering Students in Ireland**. In: Tatnall A., Webb M. (eds) Tomorrow's Learning: Involving Everyone. Learning with and about Technologies and Computing. WCCE 2017. IFIP Advances in Information and Communication Technology, vol 515. Springer.
3. Millwood, R., and Oldham, E. (2017) **Computer Science in Schools in England and Ireland – context and current developments in 2017**, 22º Seminário Educação, Tecnologia e Sociedade, Redin - Interdisciplinary Educational Journal, v. 6, n. 1, Brazil, ISSN: 2594-4576.
4. Oldham, E., Cowan, P., Millwood, R., Strong, G., Bresnihan, N., Amond, M., Hegarty, L. (2017) **Developing Confident Computational Thinking through Teacher Twinning Online**. International Journal of Knowledge Society Research.
5. Fisher, L., Oldham, E., Millwood, R., Cowan, P. (2016) **Recognising and addressing inertia affecting teacher education: a case study considering Computer Science in the Republic of Ireland**. Journal of the World Federation of Associations of Teacher Education, 1, (3a), p81 - 102.
6. Bresnihan, N., Millwood, R., Oldham, E., Strong, G., & Wilson, D. (2015). **A critique of the current trend to implement computing in schools**. Pedagogika, 65(3), 292–300.
7. Millwood, R. (2014) **From Mathematics Teacher to Computer Assisted Learning Researcher in: Reflections on the History of Computers in Education**, ed. by Tatnall, Arthur and Davey, Bill, vol. 424, pp. 302-309, Springer Berlin Heidelberg. IFIP Advances in Information and Communication Technology. (ISBN: 978-3-642-55118-5).
8. Millwood, R. (2013) Editor, **Report on good practice of innovative applications of learning theories in TEL**, Deliverable 2.1.1. Hotel European FP7 Project <http://hotel-project.eu/repository>.
9. Millwood, R., Powell, S., Tindal, I. (2008) **Personalised Learning and the Ultraversity Experience. Interactive Learning Environments**, Volume 16, Issue 1, pp. 63 - 81. Routledge.
10. Millwood R. & Terrell I. (2005) Guest Editors, **Innovations in Education and Teaching International, Special Issue: New technology, learning and assessment in higher education**, Volume 42, Number 3, Routledge.
11. Millwood R. (2000) **A new relationship with media?** in Gamble, N & Easingwood, N. (eds) *ICT and literacy: information and communications technology, media, reading and writing*, Continuum, London.
12. Griffiths, D., Heppell S., Millwood R., Mladenova G. (1994) **Translating software: what it means and what it costs for small cultures and large cultures**, *Computers Educ.*, Vol. 22, No.1/2, pp. 9-17
13. Millwood R. and Stevens M. (1989) **What is the Modelling Curriculum?**, *Computer Assisted Learning - Selected Proceedings from the CAL '89 Symposium*, Pergamon Press.
14. Millwood, R. and Squires, D. (1988) **The Influence of New Software Environments on CAL Development**, *Computer Assisted Learning - Selected Proceedings from the CAL '87 Symposium*, Pergamon Press.

A longer list may be found at:

<http://phd.richardmillwood.net/en/portfolio/collections/publications>

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## Selected Conference Presentations and Media Appearances

1. **Mental models to support competence in computer programming** – poster at London Computing Education Research Symposium, London, June 2018.
2. **Shaping Tomorrow Today ...Starting with Yesterday** – keynote in collaboration with Elizabeth Oldham at the the Computers in Education Society of Ireland conference, Dublin City University, March 2018.
3. **Art and programming in pairs to develop computational thinking** – at the Association of Teacher Education in Europe Conference, Dubrovnik, October 2017.
4. **Developing confidence in Computational Thinking** – invited workshop at the Standing Conference on Teacher Education, North and South, Dundalk, October 2017.
5. **LED by the Heart** – keynote at the Art Teachers' Association of Ireland, National Gallery of Ireland, September 2017.
6. **CTwins: Does Computational Thinking win when Coding twins are born?** at the Educational Studies Association of Ireland, Cork, April 2017.
7. **CTwins** – invited presentation to the Instructional Design and Educational Media Association Meeting, Boston, January 2017.
8. **A critique of the current trend to implement computing in schools with reference to the past in UK and Ireland** invited presentation at Computational Thinking in Education: A tribute to the pioneers who transformed CS education 50 years ago, Harvard University, Boston, June 2016.
9. **The Design of Learner-Centred, Technology-Enhanced Education**, presentation at AUCEi meeting, Dublin, July 2014.
10. **Conceptual Framework for Computing**, round table at conference Collabor84Change at BETT, London, January 2012.
11. **Technology Support for the Patchwork Text Assessment Approach**, keynote at conference Patchwork Text: 10 years on, The Centre for Recording Achievement, London October 2010.
12. **Make IT delightful** presentation at conference *EU eLearning Lisboa '07*, Lisbon, October 2007.
13. **The Future of Knowledge Acquisition & Sharing** leading a high-level group of visionaries meeting in Kronberg Germany, commissioned by UNESCO, June 2007.
14. **School Matters: Happiest Days?** presenter & co-developer of a programme highlighting the work of four schools looking to increase the well-being of their pupils, broadcast on *Teachers TV*, March 2007.
15. **The Ultraversity Project** – presentation at conference *The Guardian Higher Education Summit*, London, February 2007.
16. **Incentives and Management for Change** presentation at conference *EU Towards a Learning Society*, Brussels, May 2005
17. **Participation and Delight** presentation at the *IFIP WG 3.1 Informatics and digital technologies in School Education* conference, Manchester, July 2002.
18. **Teaching Touch Typing** on BBC Radio 4, *You and Yours*, May 2001.
19. **What will education be like in 2020?** on BBC Radio 4, *The Learning Curve*, November 1999.
20. **The Death of Distance** presentation at the *Asia-Europe* conference, Ware England, March 1998.
21. **Didactic materials to support competency based training** presentation at the *Ministry of Education conference*, Mexico City, October 1995.
22. **Translating software: what it means and what it costs for small cultures and large cultures** at the *CAL '93 international conference*, York England, April 1993.

23. **Multimedia and Modelling** presentation at the *Children of the Information Age* international conference, Albena Bulgaria, May 1991.
24. Tutor on **Educational Computing** at the UNESCO international summer school, Kotor Montenegro, August 1989.

A longer list may be found at: <http://phd.richardmillwood.net/en/portfolio/collections/conferences>

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## Other Professional Activities

1. **Research Advisor** to two PhD students at Trinity College Dublin and one at the University of Bolton. Previously supervised five students to completion: in 2002 (software to improve homework), 2006 (algorithmic thinking), 2013 (work focussed learning), 2015 (community regeneration) and 2016 (learning organisation). Frequently invited to examine PhD students.
2. **Executive Committee member** of the Computers in Education Society of Ireland 2014 – current date
3. **External examiner** for the Masters in Innovation, Creativity and Leadership at City University 2013 – 2018. Formerly external examiner for the Humanities Information Technology course scheme offered at University of North London and for the M.Ed. / Diploma scheme offered at the University of Wales, 1994 – 1996
4. **Member of the editorial board** of the journals Technology, Pedagogy and Education (formerly Journal of Information Technology in Teacher Education) and the Journal of Computer Assisted Learning, 2004 – 2014.
5. **Regular contributor to international conferences** in the field of educational computing and frequently in demand as a speaker and consultant to a number of educational and computing organisations. Local organising team for CAL 2011 in Manchester, presenting a history of educational computing special feature.
6. **Advisory member** to the European Experts' Network for Education and Technology 2006 – 2014.
7. **Advisory committee member** for the European Network of Excellence i3 (Intelligent Information Interfaces) and an active member of the organising committee of the i3 annual conferences held in Sienna, Italy (1999), Jönköping, Sweden (2000) and Basle, Switzerland (2001).
8. **Programme Committee Member** for the ALT-C 2006 & 2012 conferences.



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## Projects and Partnerships

1. **OurKidsCode** - to develop family creative computing workshops in Irish society. A Science Foundation Ireland funded project to promote STEM in society. A collaboration between Trinity College Dublin and the National Parents Council (Primary), 2018 – to current date.
2. **Review of Literature on Computational Thinking** – for Primary Coding development of the Irish National Council for Curriculum and Assessment, 2018.
3. **CESI-CS** - to develop a national community of practice for teachers of computing in Ireland with Google and the Computers in Education Society of Ireland, 2017 – 2018.
4. **Programmable Embroidery Course** - a Trinity College Dublin Visual Arts & Performance course to create embroidery through programming, 2018.
5. **Wearable Electronics Workshop** - a TCD Visual Arts & Performance course to create articles to wear incorporating craft, electronics and programming, 2017.
6. **CTwins** - a Google CS4HS project to build teachers' confidence in programming through pairing with cross-border colleagues in Ireland, 2016.
7. The **HoTEL** EU Support Action to support more effective, holistic and faster innovation cycles in European TEL, 2013.
8. **ODS (Open Discovery Space)**, an EU project aiming to raise the uptake of TEL in European schools, 2013.
9. **TEL-Map** an EU support action to develop agile roadmapping for stakeholders in Europe to anticipate and thus create better futures for technology enhanced learning, 2012 – 13.
10. **Inter-Disciplinary Inquiry-Based Learning**, a project in the Institute for Educational Cybernetics, University of Bolton to expand and develop the Ultraversity activity described below, 2007 – 2013.
11. **The UK National Archive of Education Computing** - a collection mapping the history of learning technology over the past thirty years, 1991 – current date.
12. **Ultraversity** - the development of an innovative course online, inquiry-based learning at HE level, 2003 – 2006.
13. **Mobile Games-based Learning** – a European funded project to explore simulation and decision making games for learning on mobile phones, 2005 – 2008.
14. **The Executive Learning Workgroup** – a community of educators from the leading business schools in Europe & the US investigating e-learning sponsored and lead by Cisco, 2004 – 2006.
15. **Input BBC** – working with CBBC, the BBC's children's channel to develop strategies for bringing 10 to 14 year-old children's original film making to broadcast, 2002 – 2003.
16. **Creditlink** - working with Higher Education Institutions in the Eastern Region of the UK to develop a lifelong learning award and credit-transfer system to widen participation at that level, 2002 – 2003.
17. **Live Writing Online** - working with creative writing experts to develop new media narratives for talented young writers to develop their skills further in writing.
18. **An Investigation Into Pupils' Creativity Across The Curriculum** - advising the Qualifications and Curriculum Authority on Creativity and ICT, 2002 – 2003.
19. **Insecurity** - an online soap which involved adults in the Chelmsford area in an innovative web site based on creative writing, acting and new media, 2001.
20. **éTui** - an EU funded project involving partners in Norway and Spain to design an educational toy for 4-7 year old children, 1998 – 2000.
21. **Aardvark** - a foreign language learning project funded by Teleste OY, the Finnish company which owns the Tandberg language laboratory company 1994 – 1996.

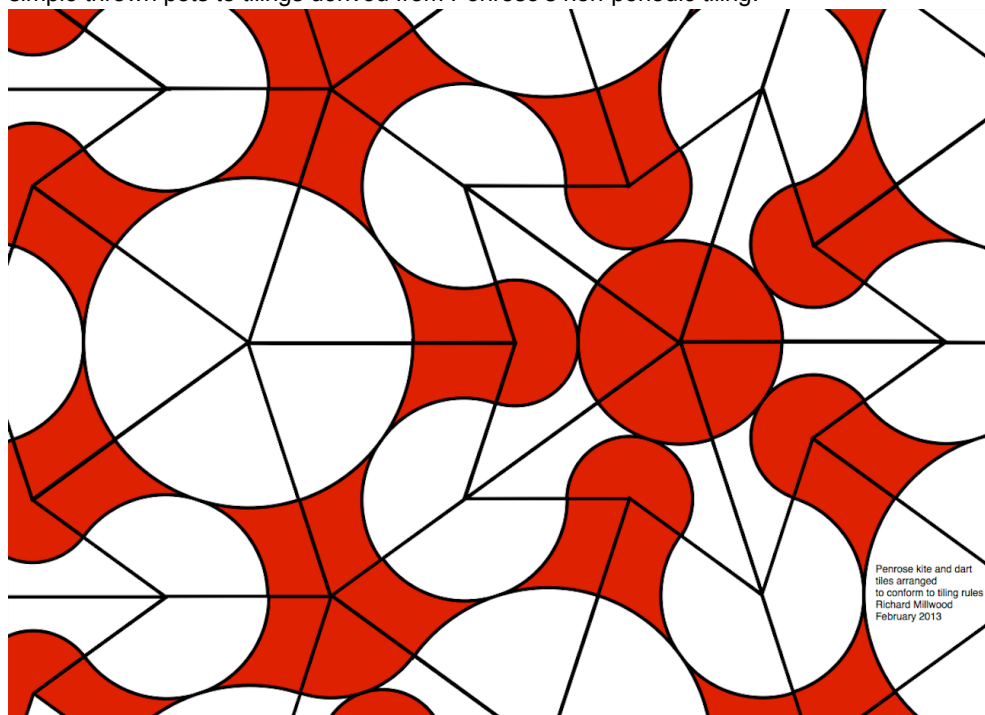
Further projects may be found at:

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**Community  
and leisure  
activities**

1. **Chair of Brentwood & Ongar Constituency Labour Party** 2013 – current date.
2. **Governor of the Sawyers Hall College secondary school** in Brentwood, Essex, overseeing its closure over three years from 2010 – 2012.
3. **Secretary, Friends of the Royal College of Music Junior Department** 2008 – 2010.
4. **Chair of Governors of the Holly Trees Primary School** for seven years. The school obtained a very positive OFSTED report against a background of enormous change and a difficult working environment. Over the seven years, I led the school in the appointment of new head and deputy head teachers, led the amalgamation between infants & juniors to form the primary school and the commission of a new building, 1999 – 2008.
5. **Amateur Ceramicist**, building on my parents tradition and creating diverse objects from simple thrown pots to tilings derived from Penrose's non-periodic tiling:



6. **Fortunate Parent** to three successful boys!