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An experienced researcher, primary practitioner, IT developer and well-regarded teacher trainer who is passionate about translating research to support all educators to ensure every young learner enjoys and excels at computing.

## **Employment History and Research**

### **2018 – present : Teaching Fellow, Teacher CPD Coordinator Queen Mary University of London**

Responsibilities: Co-ordinating and delivering Queen Mary University of London teacher continuing professional development (CPD) and community events. Teaching computer science undergraduates who are on school experience placements. Included in this role is research to investigate the impact and different teaching approaches introduced in computing CPD.

Achievements: Delivery of the TechPathways teacher CPD courses on time on budget. Organisation of a sold-out 200 teacher conference. Publication of academic paper on Semantic Waves (Waite, Maton, Curzon & Tuttiett, 2019).

### **2015 – present: PhD Student Queen Mary University of London**

Responsibilities: Designing and implementing research activities in the subject area of teaching programming to primary aged pupils. Theoretical frameworks developed, mixed methods used including interviewing primary aged pupils and teachers and surveying educators. Analysis resources include using SPSS for statistical analysis and Nvivo for coding of interviews. As well as working on my own PhD research, I have also undertaken research as part of conference working groups and international collaborations.

Achievements: Publication of journal articles, conference papers, book chapters and magazine articles on teaching programming in primary schools for both academic and teacher audiences (Bell, Curzon, Waite & Dorling., 2019; Csizmadia, Standl & Waite, 2019; Sentence & Waite, 2018, Standl, Futschek, Waite, & Csizmadia, 2018; Waite, 2018, 2019a, 2019b; Waite, Curzon, Marsh & Sentence, 2016, 2017, 2018, 2019; Waite Curzon, Marsh, Sentence & Hawden-Bennett, 2018) .

### **2015 – present: Research Assistant King’s College London and other institutions**

Responsibilities: Developing research questions, method protocols, undertaking interviews, analysis of interviews, statistical analysis of data, and writing up.

Achievements: Co-author on journal and conference papers related to PRIMM (a set of studies in secondary schools investigating a new approach for teaching programming) (Sentence & Waite, 2017; Sentence, Waite & Kalia 2019a, 2019b) and on the introduction of the Micro:bit (Sentence, Waite, Hodges MacLeod & Yeoman 2017; Sentence, Waite, Yeomans & MacLeod, 2017).

### **2015- : Educational Consultant**

Responsibilities: Providing research and consultancy for teacher professional development and resource creation. Writing pedagogy guidance reports, outlining and reviewing primary teacher professional development courses and resource development.

Achievements: Production of the review of pedagogy research for the Royal Society’s review of computing education (Waite, 2017). Design and delivery of the [BCS certificate in computer science education Scratch course](#) (delivered to over 12 online cohorts). Supporting authors and reviewing outputs, on pedagogy and content for the National Centre for Computing Education face to face and online primary courses and resources. Providing guidance and quality assurance on Barefoot professional development and content resources, such as the new research-informed programming

teacher training course. Writing of innumerable [cs4fn](#) articles and [articles in issues 2-6 of Hello World](#).

### **2015 - 2018 - : Project Manager, King's College London & Queen Mary University of London**

Responsibilities: Co-ordinating Computing At School (CAS) work in London. Organising, devising and delivering events and CPD for teachers. Recruiting, mentoring and training master teachers. Facilitating the networking of industry, training groups, Universities & school teams.

Achievements: Delivered all key performance indicators, including teacher and school reach and master teacher recruitment, well above target. Additionally, our conferences, network events and training courses consistently sold out with excellent feedback. Also developed and delivered four cohorts of the very popular Diving Deep into Primary Programming course.

### **2014 – 2015 and 2018- present (contract): Computing CPD author, Barefoot Project, BCS & BT**

Responsibilities: Design and write computational thinking and computer science concept resources and classroom activities for primary teachers. Develop and deliver CPD training material.

Achievements: Worked with academics to develop agreed primary teacher definitions of concepts. Crafted easy to teach fun activities such as the most popular resource, Crazy Characters, to demystify the new curriculum. The resources we created and training materials we developed have now supported more than [50,000 teachers & reached 1.5 million UK school pupils](#).

### **2005 -2015: Primary Teacher & Computing Subject Lead, Brighton & Hove**

I planned and taught lessons to primary pupils from a range of age groups; my teaching was consistently evaluated as 'Outstanding' and my pupils consistently met or exceeded their targets.

### **1990-2005: Various IT roles, Lloyds TSB, St Lucia Air & Sea Port Authority (VSO), Unilever**

Developed systems on time on budget through a range of roles including data architect, project leader, analyst and programmer for business areas such as money laundering, collections, port management & warehousing.

### **1982- 1986: VAT Inspector HM Customs & Excise**

Inspected businesses for compliance with tax regulations, specialising in auditing IT accounting systems.

### **Offices Held**

Member of the CAS Board, including Chair of the Research Working Group: 2019 to present

Member of the BCS Curriculum and Assessment Committee: 2018 to present

Member of Barefoot Content Board: 2018 to present

Member of CAS Assessment Working Group: 2017 to 2019

Member of DfE ITT Primary computing expert panel: 2013-2014

### **Education & Accreditations**

2015 -2021 PhD in Computer Science Education at Queen Mary University of London (in progress)

2017 Chartered IT Professional with the BCS (The Chartered Institute of IT)

2014 - 2015 BCS Certificate in Teaching of Primary Computer Science

2005 - 2007 PGCE in Primary Education from Brighton University (part-time)

1986 - 1989 BSc (Hons) 1<sup>st</sup> Class in Data Processing from Leeds University

1984 - 1986 HND (Distinction) in Computer Science from Leeds Polytechnic

1980 - 1982 'A' levels in Mathematics, Physics, Geography and General Studies

## Publications

Bell, T., Curzon, P., Waite, J. & Dorling, M. , 2019. Computational Thinking. *In The Cambridge Handbook of Computing Education Research*.

Csizmadia, J. A. Standl B. & Waite, J., 2019. Integrating the Constructionist Learning Theory with Computational Thinking Classroom Activities. *Informatics in Education*, 18(1), pp.41–67. Available at: <https://doi.org/10.15388/infedu.2019.03>

Sentance, S. & Waite, J., 2017. PRIMM: Exploring pedagogical approaches for teaching text-based programming in school. *Proceedings of the 12th Workshop on Primary and Secondary Computing Education*. ACM, pp. 113–114. Available at: <https://doi.org/10.1145/3137065.3137084>

Sentance, S. & Waite, J. 2018. Computing in the classroom: Tales from the chalkface, it-Information Technology, De Gruyter Oldenbourg, 2018, 60, 103-112

Sentance, S., Waite, J., Hodges, S., MacLeod, E. & Yeomans, L., 2017. Creating Cool Stuff: Pupils' Experience of the BBC micro: bit. *Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education*. ACM, pp. 531–536. Available at: <https://doi.org/10.1145/3017680.3017749>

Sentance, S., Waite, J., Yeomans, L. & MacLeod, E., 2017. Teaching with physical computing devices: the BBC micro: bit initiative. *Proceedings of the 12th Workshop on Primary and Secondary Computing Education*. ACM, pp. 87–96. Available at: <https://doi.org/10.1145/3137065.3137083>

Sentance, S., Waite, J. & Kallia, M., 2019a. Teachers' Experiences of using PRIMM to Teach Programming in School. *Proceedings of the 50th ACM Technical Symposium on Computer Science Education*. ACM, pp. 476–482. Available at: <https://doi.org/10.1145/3287324.3287477>

Sentance, S., Waite, J. & Kallia, M., 2019b. Teaching computer programming with PRIMM: a sociocultural perspective. *Computer Science Education*, pp.1–41. Available at: <https://doi.org/10.1080/08993408.2019.1608781>

Standl, B. Futschek, G., Waite, J. & Csizmadia, A., 2018. WG1: Constructionist Approaches to Computational Thinking. *E. V & Jasute Dagiene, ed. Constructionism, Computational Thinking & Educational Innovation*. Constructionism 2018, pp. 792–818.

Waite, J., 2017. Pedagogy in teaching Computer Science in schools: A Literature Review. *After The Reboot: computing education in UK Schools*. Available at: <https://royalsociety.org/ /media/policy/projects/computing-education/literature-review-pedagogy-in-teaching.pdf>.

Waite, J., 2018. A continuum of scaffolding: from copying code to tinkering. Available at: <https://blogs.kcl.ac.uk/cser/2018/01/05/a-continuum-of-scaffolding/>.

Waite, J., 2019a. Applying Vygotsky's Mediators to Review the Scaffolding in Unplugged Activities. *Constructivist Foundations*, 14(3), pp.355–356. Available at: <https://constructivist.info/14/3/355.waite>.

Waite, J., 2019b. Design *Encyclopedia of Education and Information Technologies*. A. Tatnall, ed. Cham: Springer International Publishing, pp. 1–12. Available at: [https://doi.org/10.1007/978-3-319-60013-0\\_137-1](https://doi.org/10.1007/978-3-319-60013-0_137-1).

Waite, J., Curzon, P., Marsh, D. & Sentence S., 2016. Abstraction and common classroom activities. *Proceedings of the 11th Workshop in Primary and Secondary Computing Education*. ACM, pp. 112–113. Available at: <https://doi.org/10.1145/2978249.2978272>.

Waite, J., Curzon, P., Marsh, W. & Sentence S., 2017. K-5 Teachers' Uses of Levels of Abstraction Focusing on Design. *Proceedings of the 12th Workshop in Primary and Secondary Computing Education*. ACM, pp. 115–116. Available at: <https://doi.org/10.1145/3137065.3137068>

Waite, J., Curzon, P., Marsh, W. & Sentence S., 2018. Comparing K-5 teachers' reported use of design in teaching programming and planning in teaching writing. *Proceedings of the 13th Workshop in Primary and Secondary Computing Education*. ACM Available at: <https://doi.org/10.1145/3265757.3265761>

Waite, J., Curzon, P., Marsh, W. & Sentence S., 2019. Difficulties with design for teachers of K-5 programming projects. *Manuscript submitted for publication*.

Waite, J., Curzon, P., Marsh, D., Sentence, S. & Hawden-Bennett, A., 2018. Abstraction in action: K-5 teachers' uses of levels of abstraction, particularly the design level, in teaching programming. *International Journal Of Computer Science Education In Schools*. Available at: <https://doi.org/10.21585/ijcses.v2i1.23>

Waite, J., Maton, K., Curzon, P. & Tuttiett L., 2019. Unplugged Computing and Semantic Waves: Analysing Crazy Characters. *The UK and Ireland Computing Education Research Conference*. ACM Available at: <https://doi.org/10.1145/3351287.3351291>