

Developing Computing Teacher Guidance on GenAI

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Abstract

Generative AI (GenAI) is becoming widely available for use in schools by teachers and students. While many educators appreciate the potential benefits of GenAI for enhancing learning, there are also significant concerns about authorship, authenticity, plagiarism, ethics, biases, and the broader implications of their use in education. For computing teachers in schools, these issues can be even more acute. In this project, we established a working group of practising computing teachers to bring together a range of views and experiences. Initial results of the project led to a booklet for computing teachers on how to use GenAI, illustrating the effectiveness of teacher-researcher partnerships in developing resources for school use. This project will be followed by further work on computing teachers' actual experience of GenAI in practice.

CCS Concepts

• **Social and professional topics** → **K-12 education**.

Keywords

generative AI, AI education, K-12 education, teachers

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1 Introduction and Background

Organisations, including the Department for Education in England, have issued school guidance on the use of GenAI (e.g. [2]). Meanwhile, researchers have reported on the use of GenAI in university computing education (e.g. [4]), and in GenAI for K-12 education (e.g. [1]), but there is a specific need to support school computing teachers in their adoption of these technologies. Computing teachers are at the forefront of the rapid pace of technological change impacting on schools, being increasingly aware of the potential of AI tools in their teaching practice and that of their colleagues.

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There is also a shift towards the teaching and learning of AI and data science (as a subject) at the K-12 school levels, but teachers may lack confidence in both the use of AI and the teaching of AI.

In this context, researchers and teachers worked together to develop guidance for K-12 computing teachers on the use of GenAI, answering the questions (i) How can GenAI benefit school computing education, and what impact will it have on pedagogy, curriculum, and assessment? and (ii) How can computing teachers support their schools as they grapple with these issues?

2 Methods

This project used participatory research and design, an approach which includes user and stakeholder voices within the design process of products that will affect them, and emphasises parity and participation of teachers on projects [3]. A working group of eight teachers, four local researchers and four other stakeholders worked collaboratively to share their understanding and experience of classroom GenAI. Through three workshops, guidance content and overarching themes were developed. Audio data were recorded, with consent, and analysed iteratively. Ethical clearance was obtained.

3 Results and Conclusion

Five themes were identified through discussions with the working group: a) Students and teachers need to understand how GenAI works; b) GenAI can be used to teach computing more effectively; c) GenAI can be used to teach any subject more effectively; d) GenAI can be used by teachers for productivity and to reduce workload; and e) Action is needed at the school level to support professional development, revised policies and guidance for teachers on the use of GenAI. The initial output of this ongoing project was guidance for computing teachers around the use of GenAI in school. Further work will investigate how the guidance is utilised in practice.

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