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Computer Science Education in Ireland: Capacity, Access and Participation*

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ABSTRACT

Our world is both physical and digital. Students would benefit from understanding how this digital world works, and how algorithms drive it [2]. Students would also benefit from learning computational thinking, and becoming creators and designers of computer systems and applications. These are invaluable skills; not just a means to ensure a skilled workforce [1]. However, diversity, gender balance, and equality are recognized globally as challenges in this field.

Looking through a lens filtered on four components: diversity, inclusion, teacher education and professional development, this study will evaluate current Computer Science (CS) learning opportunities in the Irish primary and post-primary curriculum. It aims to identify the opportunities and key factors for the growth and development of CS in Ireland.

This research is divided into three phases, influenced by the three components of the CAPE model [3] that underpins this study: Capacity for, Access to, and Participation in CS education. Data will be gathered using various means: focus groups (students, teachers, principals and policymakers), and student questionnaires. The analytic approach is mixed, it involves document, thematic and content analysis.

Findings from this study will provide a detailed view of the current landscape relating to CS education in Ireland, particularly its diversity and inclusion. Recommendations on the equitable integration of Computational Thinking/Coding/CS education across the formal education system in Ireland will be provided. This will have implications for educational policy, initial teacher education, and second-level teaching practice in Ireland and beyond.

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KEYWORDS

Computer Science Landscape, CAPE Model, diversity, inclusion, equity.

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1 Content

The proposed poster will outline the purpose of this study, its methodology, and include a diagram that alludes to its overarching framework, the CAPE pyramid [3]. Graphs will display the current CS landscape in Ireland concerning the number of accredited teachers, students, and school numbers. A comparison to other subjects and countries will be shown.

Preliminary findings relate to a review of the Irish educational system's capacity for CS education and a list of school-level factors that determine the access to CS/JC Coding offerings in schools will be documented in graphical and bullet format. Data will also be shown with respect to the students who are participating in CS in Ireland in relation to their location, gender and socio-economic situation. Findings from this study will be of interest to educational policymakers, initial teacher educators, and second-level teachers in Ireland and beyond.

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