Pytch Junior: Identifying Design Features to Further Ease the Burden of Transitioning from Blocks to Text Using Pytch.

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Abstract
The inclusion of Computer Science in Irish secondary school curriculums from 2018 is indicative of the rising importance of coding education in Ireland. Our UK and US counterparts, having previously introduced coding education in their schools, convey the international interest in the field and provide an insight into why ongoing research in the field is so prolific. The largest gulf in coding education exists when novice programmers make the jump from block-based programming to text-based, setting the stage for so much of this research to be focused on the challenges of such a transition and approaches to overcoming them. Pytch, is part of this research, and one approach to bridging the gap from blocks to text. An intermediary environment for novice programmers to be eased into Python, Pytch supports transitioning to text-based coding, but has scope for additional support.

This work seeks to identify key areas in Pytch that offer room for additional support, to ease the burden of transitioning for novice programmers. It investigates other transitional approaches, to determine what design features, if any, can be incorporated into a new environment to sit between Scratch and Pytch in a programmer’s educational timeline. This work proposes a novel, research-informed design for this environment, known as ‘Pytch Junior’ and provides both a theoretical approach for implementing the design and an evaluation framework for gauging how successful the design is in promoting conceptual understanding of programming, while supporting novice programmers in transition.