

SpeechBlocks: Using Literacy Apps as Building Blocks to Analyze Play

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Abstract— Our goal at the Laboratory for Social Machines is to create technology that empowers learners by providing self-expressive, socially collaborative, and playful literacy learning opportunities. We have developed an early literacy learning app called SpeechBlocks, where children can manipulate letter blocks to hear the sounds their words and letters make when they are constructed and deconstructed. Through this app, children are exposed to emergent literacy practices that teach alphabetic principles in personally meaningful ways. We piloted SpeechBlocks with 16 preschool students and found that it is an effective literacy learning tool that inspires creativity and supports organic social interactions. During the pilot, we instrumented the mobile devices and classroom environment to collect a corpus of rich qualitative and quantitative data. We are using the results from this pilot to explore how we can go beyond learning analytics in early education by introducing what we are calling play analytics, data-driven analysis of free play. We are examining the potential for open-ended, child-driven technology, like SpeechBlocks, to serve as an unstructured playground to collect and combine contextual and behavioral data. The analysis of this data, through play analytics, may have implications for researchers, educators, and parents by providing a more descriptive view of children’s learning processes and literacy skills. Such analysis may also help us build automatic scaffolding tools into our apps to provide personalized learning activities that are child-driven, machine-guided.