My entirely plausible fantasy: early mathematics education in the age of the touchscreen computer.

Summary: This paper offers an account of what early mathematics education could look like in an age of young digital natives. Each “Tubby,” as the tablets are called, presents Nicole (our generic little child) with stimulating mathematics microworlds, from which, beginning at age 3, she can learn basic math concepts, as well as methods of calculation and number facts. Tubby presents Nicole with mathematics story books, which both she and her adult readers will enjoy. Tubby also offers guidance to parents and teachers on how to promote Nicole’s math learning. On entrance to school, Nicole, along with her peers, experience an organized curriculum that includes real world activities, mathematics microworlds, interactive storybooks, and a textbook, all residing in peace and harmony within Tubby. Tubby has enough energy to help Ben, Nicole’s teacher, to engage in multimedia pedagogy. Finally, Tubby conducts stealth assessment that provides Ben with actionable information on how to tailor his teaching to individual students and also eliminates the need for standardized achievement tests. The virtual world I have described is an attainable fantasy. But the real world stands in the way of the virtual. Without massive investments in professional development and teacher pay, and without a commitment to guarantee high quality education for all children, Tubby will dissolve into virtual nothingness.

Classification: U51 U71 D31

Keywords: pre-school education; early mathematics education; teaching; learning; educational media; media technology; educational technology; touchscreen tablet; learning environments; educational software; microworlds; stealth assessment; interactive storybooks; emergency mathematics services; parent participation; post-textbook textbook

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