

Technology, Research and Practice in Mathematics Education

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The past two decades have seen extraordinary developments of technologies of potential value to mathematics education, including a range of software (such as dynamic geometry systems, graphing software, statistics software and computer algebra systems), a range of devices (such as scientific and graphics calculators, desktop computers, iPods and interactive whiteboards) and a range of environments (such as computer laboratories, microworlds, the Internet and learning management systems), all in various combinations. While there are many hopes, aspirations and opinions on the appropriateness of particular technologies for particular purposes, obtaining credible and helpful evidence on such matters has been difficult; indeed, many researchers have noted the difficulties of studying what is clearly a moving target. In a world in which simplistic views of research abound (as in suggestions or inferences that research will provide the evidence upon which decisions are made), in which decisions by curriculum developers and classroom teachers are subject to a range of influences (including financial, commercial, political and ideological), and in which communications between different educational interest groups are rarely productive, it is hard to see the best way forward. In this presentation, I will attempt to survey some of the achievements and problems of research on technology in mathematics education, in order to understand the limited impact so far of research upon practice and to suggest how we might collectively do better to productively connect technology development, educational research and classroom practice for mathematics education.