

The effects of ubiquitous computing on student learning: a systematic review

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1 Rationale

- Increasing use of technology in schools
- School one-to-one computing initiatives increasing
- Lack of consistent or existent evidence to support links between hope-for outcomes and one-to-one interventions
- Existing evidence diverse in terms of design, quality, and findings: need for synthesis
- Need to extract “lessons learned” from literature

6 Further Study

- Conduct new searches of scholarly and grey literature
- Categorize articles according to a variety of study features
- Compare outcomes to study features to determine when, where, how, and why intervention is successful
- Develop strategies for analyzing various types of “grey literature”
- Develop qualitative synthesis of literature

2 Methodology

- Develop and refine terms and definitions related to the research question
- Conduct literature search of scholarly and “grey” literature
- Develop and apply an inclusion/exclusion strategy
- Synthesize quantitative, qualitative, and review literature
- Develop strategies to synthesize studies of varying quality and type, and to address publication/selection bias

The Research Question:

How, to what extent, and under what circumstances does one-to-one computing impact K-12 student achievement, student and teacher technology use and technology proficiency, and student and teacher attitudes toward technology?

5 Preliminary Conclusions

- Gains in technology integration, use, and proficiency, in attitudes towards technology and the promise of technology for learning; limited gains in engagement and motivation.
- No automatic gain in student achievement
- Technology best suited to affecting improvements in some areas and with some students more than with others.
- The best results when one-to-one computing is one part of a well-planned technological integration strategy
- Change management is a critical ingredient for success

3 Challenges

- Traditional search and retrieval strategies ineffective at locating “grey” literature
- Studies of greater diversity than originally anticipated - synthesis presents unique challenges
- Publication/Selection bias - while publication bias is always a problem in scholarly literature, in some of the grey literature, especially the evaluation literature, no difference or negative findings almost never get released to the public

4 Preliminary Findings

