



CENTER FOR CHILDREN & TECHNOLOGY

EDUCATION DEVELOPMENT CENTER INC

Response to
*Learning Context:
Gaming, Simulations, and
Science Learning in the Classroom*

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Prior research demonstrates that adaptation is a persistent part of the implementation process.

- Adaptation is driven by:
 - Logistical, practical, and infrastructure constraints (institutional capacity);
 - Teacher beliefs, existing content knowledge, and pedagogical content knowledge (personal capacity);

But also by:

- Building-level perceptions of alignment of local goals and priorities to perceived purpose and goals of the innovation (existing priorities);
- Teacher perceptions of the match between the innovation and chronic student hurdles (existing needs).

Quality and scope of adaptation appears to be influenced by a series of factors that can be accommodated in the design process.

- Consider technological tools that have found success in classrooms: graphing calculators, probeware, and smartboards (see Roschelle, Patton & Tatar, 2007)
- These tools:
 - are discrete, freestanding pieces of technology.
 - address specific challenges or sticking points in learning that teachers are very familiar with.
 - flexible and adaptable to multiple curricular contexts.
 - can be used simply at first, with growing sophistication over time.

Designing for incremental change

- Co-creation: The design process needs to be informed by expert teacher perspectives so games can address and support both teachers and learners.
- Mobilization: Teachers will need extensive time and support to explore connections between specific electronic games and their curriculum and teaching goals.

Implications for research agenda

- What to address?
 - What are the bottlenecks that both researchers and teachers recognize as particularly difficult moments in the evolution of children's *conceptual* knowledge?
- Where to put it?
 - Where and when in the daily practice of classrooms, and where and when in the learning cycle, can games be best positioned to play a feasible and meaningful role as a support to teaching and learning?