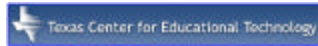


New Media Resistance: Barriers to Implementation of Computer Video Games in the Classroom

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AERA 2006 - San Francisco, California

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Introduction

- Video games are an emerging instructional medium
 - Experiential learning
 - Team building
 - Abstract concepts
- As with other new media, barriers have manifested in tandem with rising interest for classroom use

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Introduction

- A review of papers dealing with educational games and game-like environments identified six areas as barriers to classroom implementation of instructional video games

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Perceptions Among Educators

- VIEs vs. simple games of yore
- Misconception of games as only lower-level (Schrader, Zheng & Young, 2006)
- Notion of violence fostered in games (Anderson & Bushman, 2001; Sherry, 2001)
- Extensive professional development required
 - Constructivist and tech-heavy environments (Dede and Ketelhut, 2003)

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Graphics

- High expectations from students for state-of-the-art (Elliot, Adams, & Bruckman, 2002)
- Modifications of existing environments
 - Revolution (Squire & Jenkins, 2003)
- Use of existing three-dimensional environments such as Active Worlds
 - River City (Dede, Ketelhut, Nelson, Clark, & Bowman, 2004)
 - Quest Atlantis (Barab, Thomas, Dodge, Carteaux & Tuzun, 2002)

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Hardware

- Most teachers have access to a computer in the classroom (NCES, 2000)
- But computers for students may be older and slower, leading to low-resource software (Becker, Ravitz, & Wong, 1999)
- Virtual classroom environments deliberately fashioned for computers dating from 1999 (Jones, 2004)

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Time Divisions in the School Day

- Complex VIEs such as Civilization III may consume hundreds of hours
 - Informal learning environments not adhering to bell schedules may be more suitable for complex VIEs (Squire, 2004)
- Researchers deliberately design games with objectives that can be achieved within 45 minutes (Squire and Jenkins, 2003)

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Lack of Affordances

- Gibson's (1977) Affordance Theory
- Lack of affordances in some 3D environments hinders instruction (Dickey, 2003)
 - Active Worlds lacked limited movement, complex gesturing, drawing on a whiteboard, and other actions available in RL

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Lack of Alignment to Standards

- Squire (2004) developed his own curriculum for Civilization III
 - When teachers have to develop their own curriculum and align to standards, it hinders adoption for the classroom
- Dynamic adjustments a necessary quality for successful adoption of software in the classroom (Deubal, 2002)
 - PowerPoint

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Conclusion

- Commercial VIEs are created for consumers first, with educational considerations a secondary or non-existent issue

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Conclusion

- Training benefits of VIEs in business and military are well documented (Prensky, 2001)
- Pedagogical benefits of educational video games include grasping abstract concepts, team building, and experiential learning
- As greater understanding of benefits and limitations of video games for pedagogy increase, acceptance will increase as well

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