Does Multimedia Work

DCTE745
Multimedia Systems
Dr. Tim Ellis

Theoretically Sound

Communication Channels & Multimedia

• Daniels (1995)
• Multi-channel communication
  – Humans have many communication channels
    • Visual
    • Auditory
    • Tactile
  – The more channels stimulated, the more likely communication will occur
Learning Styles & Multimedia
• McCarthy’s (1997) distinct approaches to learning
  - Type 1: The highly imaginative student who learns by feeling and reflecting.
  - Type 2: The analytic student who learns through reflecting and thinking.
  - Type 3: The common-sense learner who learns through thinking and doing.
  - Type 4: The dynamic learner who learns through creating and acting.

Interactivity and Multimedia
• Jacobson and Spiro (1995)
  • Impact of hypertext in a computer-aided learning environment.
  • Programs offering fewer links tended to be more effective in promoting the acquisition of facts.
  • Programs offering extensive hyperlinking were more conducive to developing critical thinking skills.

Freedom to Experiment & Multimedia
• Hatfield (1996)
  • Certain things are inherently not easily conveyed via traditional educational means.
  • Activity-based learning models rather than the more traditional passive learning models.
  • Interactive multimedia promoted freer experimentation.
Improved Attitude & Multimedia

- Teachers, students and administrators testing a multimedia-enhanced environment all reported improved
  - attitude
  - retention
  - enthusiasm
  - transferability of learned material
  - ability to work in a team.

Experiments, on the Other Hand

Lack of Measurable Improvement in Learning

- Wise and Groom (1996)
- Inclusion of multimedia in grades K-12 classrooms did not result in an appreciable change in student performance as measured by grades
Again, No Measurable Difference

- Pruisner's (1995)
- Effect of the use of color in educational materials on students' learning
- No significant correlations between use of color and performance on assessment instruments.

Yet More Bad News

- Wegner and Payne (1994)
- Study of reading education
- No differences in recall or retention in students using a multimedia-enhanced program versus those using an exclusively text-based system.

References


