A Matrix Model for Designing and Assessing Network Enhanced Courses

Ruben R. Puenteedura, Ph.D.
Many current models:
- are either too complicated for instructors to use, or too simplistic, or both
- are based upon assumptions inappropriate to the medium

So that many projects:
- fail to significantly enhance the quality of education delivered
- lack clear metrics for the evaluation of their achievements
- fall prey to the Hawthorne effect
A viable model needs to be:

- theoretically consistent
- empirically justifiable and verifiable
- easy to use
- result in clear metrics
Three independent variables suffice to define such a model:

- tiers of tool usage;
- ephemerality of content;
- social domains of interaction.
Tiers of Tool Usage   The model

• Four Tiers:

   I. Substitution
   II. Augmentation
   III. Modification
   IV. Redefinition
Tiers of Tool Usage Example: The Word Processor

• Tier I: Used like a typewriter
• Tier II: Used like a Wang dedicated word processor
• Tier III: Integrated with email, graphing software, etc.
• Tier IV: Integrated with a Content Management System
Two possibilities here:

- ephemeral  think of music, drama
- non ephemeral  think of painting, sculpture
Social Domains of Interaction  The Model

• These are the social domains occupied by:
  • the sender of material
  • the receiver of material

• They can be:
  • private  single author/reader
  • private collective  selected group of authors or readers
  • public collective  nonspecific group of responsive authors/readers
  • public  nonspecific group of passive authors/readers
Networked Tools Example

- Web page: originating in a private sphere, receiving in a public sphere; nonephemeral
- Listserver: originating in a private sphere, receiving in a private collective sphere; nonephemeral
- Personal email: originating and receiving in a private sphere; semi ephemeral
- Weblog: originating in a private sphere, receiving in a public collective sphere; semi ephemeral
- Wiki: originating and receiving in a public collective sphere; semi ephemeral
- Chatrooms: originating and receiving in a public collective sphere; ephemeral
Visualizing the model:
The Resulting Model

• Design and evaluation processes are symmetrical:
  • once a course goal has been decided upon, it is mapped to the most appropriate cell in the grid for its definition;
  • this in turn predicates a set of potential technological tools for its implementation;
  • the parameters defined by the cell selected are mapped back upon actual course results for their evaluation.
Working Example #1

- Course Description: History of Television
- Goals:
  - Extend reach of thoughtful dialogue beyond short weekly discussion sections
  - Improve level of writing
  - Avoid plagiarism
- What tools would you use? Why?
Working Example #2

• Course Description: Games Programming

• Goals:
  • Have students share code, information
  • Have students assume the primary responsibility for coordinating and discussing team activities
  • Allow the instructor to assume a mediating role when necessary
Hippasus

- http://www.hippasus.com
- http://www.hippasus.com/rrpweblog/
- rubenrp@hippasus.com