

*A Matrix Model for Designing and
Assessing Network-Enhanced Courses*

Ruben R. Puentedura, Ph.D.

Issues With Current Models

- 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

Ephemerality of Content - The Model

- Two possibilities here:
 - ephemeral (think of music, drama)
 - non-ephemeral (think of painting, sculpture)

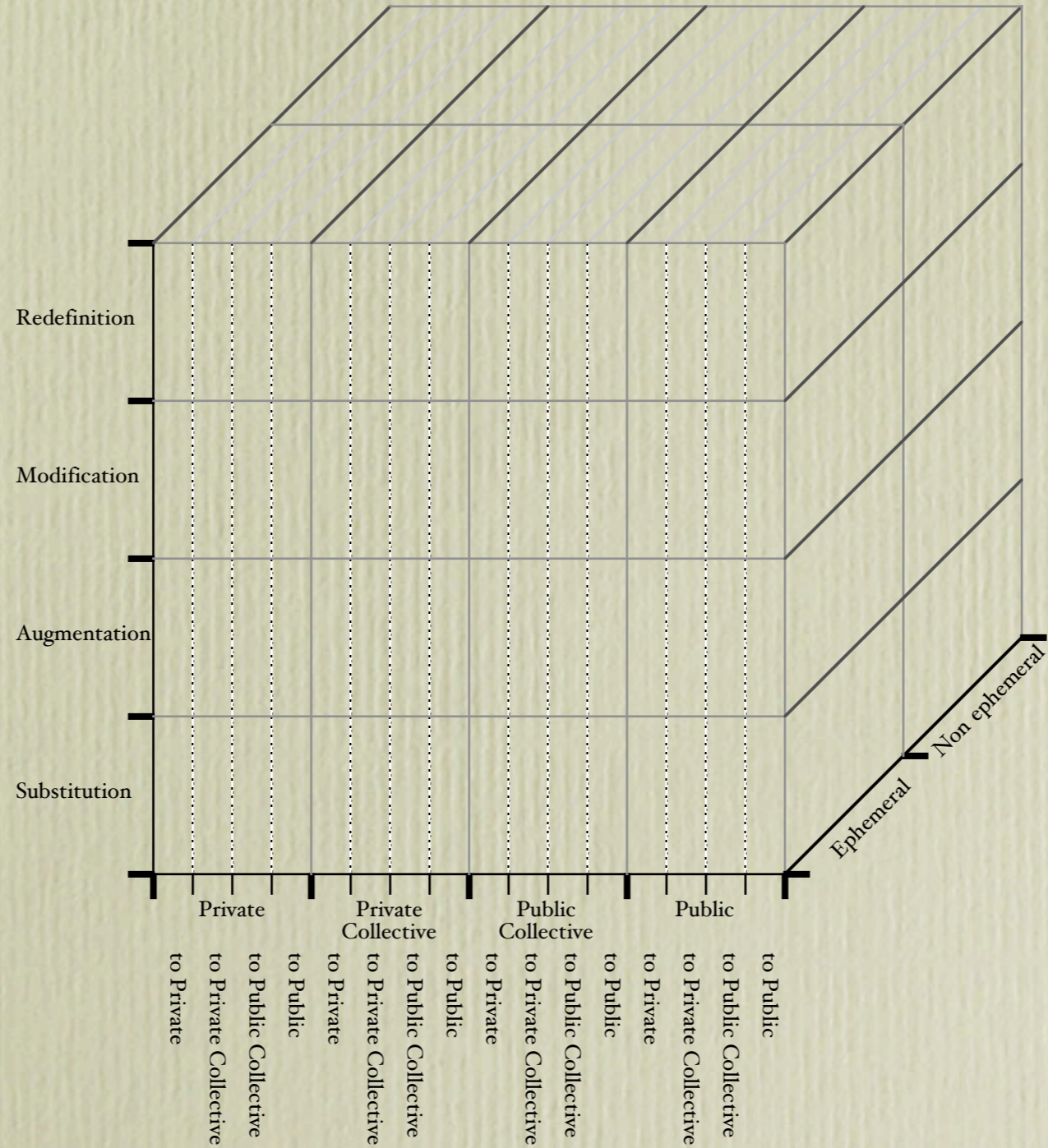
Social Domains of Interaction - The Model

- 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
- Listserv: 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.

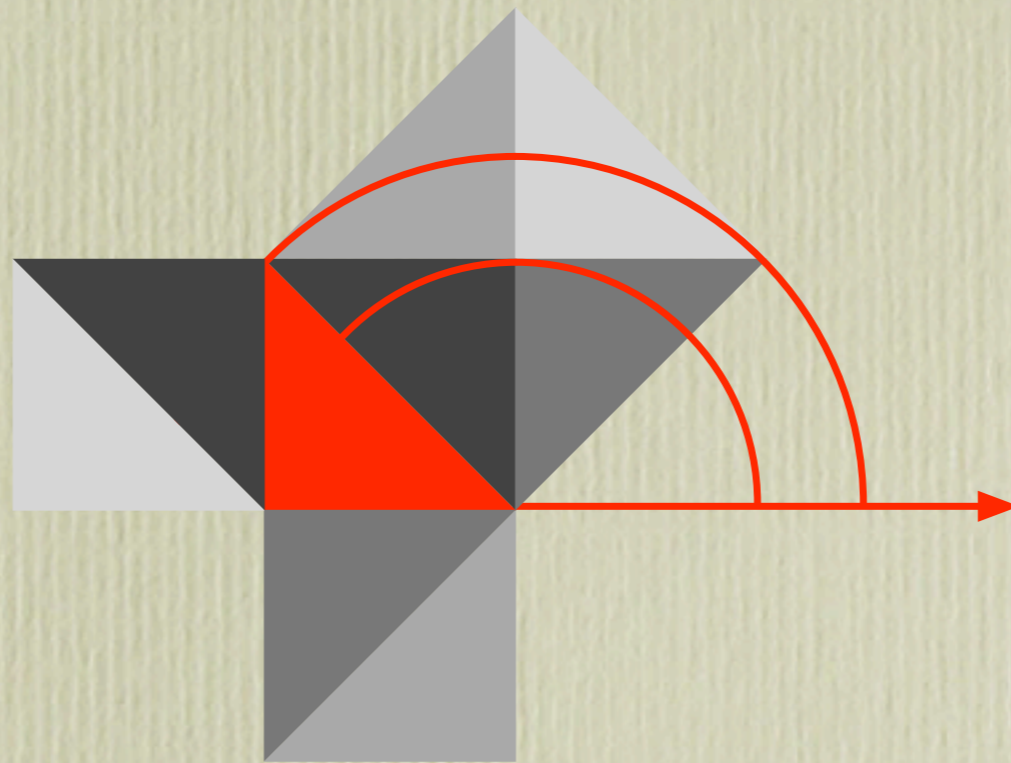
Working Example #1

- 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