A Model for Addressing Navigation Limitations and Metacognitive Constraints in Hypermedia Training Systems

Dr. Glenn Freedman
University of Houston - Clear Lake
December 1990

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The Problem

Hypermedia training tools still suffer from limited navigational systems.

Hypermedia users are constrained by their own metacognitive limitations, schema, lack of knowledge about the developer's schema, and limitations of linking (associational) systems.

The Result

Hypermedia training systems are often difficult to use, to gain optimal value from, and can be downright confusing, unless a person already knows the system, the developer, or the content.

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Sample of Software Problems

1. Difficult to browse through the system
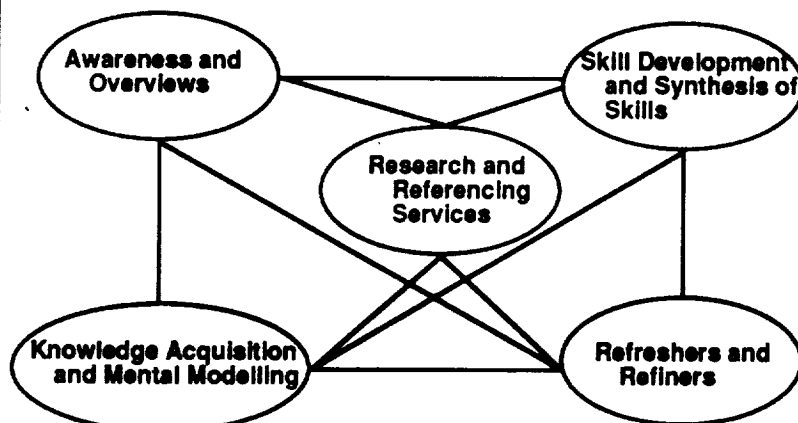2. Difficult to seamlessly link media types
3. Too few associational options

FILTERING, ORGANIZING, BROWSING (CONKLIN, 1987)

Sample of People Problems

1. Easily confused -- lack of cognitive 'gravity'
2. Too hard to remember everything -- can't hold one's place
3. Too many choices
4. Too much information in too many formats

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Hypermedia in Training

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The Three Biggest Challenges

System Design

System Design

System Design

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What Are We Designing?

1. A Database System
2. A Knowledge Representation Scheme
3. A Hypertext System
4. An Instructional System
5. An Interface System
6. A Layered Layout
7. Graphics
8. An Evaluative System
9. A Search and Find System
10. A Model for Teaching
11. A Model for Learning

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Strong Training System

C onfirmability

A bstraction

L ocalization

C ompleteness

I nformation hiding

U niformity

M odularity

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Attributes of a Well Designed System

S afety and security

U nderstandability

P ortability

E fficiency

R eliability

M odifiability

I nteroperability

C orrectness

E xtensibility

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A Design Worksheet

Instructional Goal:

Instructional Objectives:

Target Population:

Setting:

Hardware/Software Requirements:

Time Boundaries:

Proficiency Level:

Prerequisites:

Follow-up:

Node Varieties:

Link Associations:

Level of Abstraction:

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Establishing a
Universe of Discourse

1. Spatial Frames of Reference
2. Temporal Frames of Reference
3. Shared Domains; Coreference
4. Points of Departure
5. New Information
6. Coaching and Mentoring
7. Free Indirect Style
8. Presuppositions
9. Lexicons
10. Rules

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Summary:
Hypermedia Training Systems

Addressing the Metacognitive Issues:
   Training for the training!

Addressing the Navigation Problems:
   From Landsat to Antfarms!

Addressing the Communications Problems:
   Back to the Basics!

Session 3

Issues for Real-World Hypertext Projects

Chair: Robert J. Glushko

Panel: **Three Issues for Real-World Hypertext Projects**

Robert J. Glushko
David Gunning
Bruce Warren