

Hierarchical Structures in Hypertext Learning

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What is the influence of different manifestations of hierarchical structures for learners with different levels of prior knowledge in hypertext learning environments?

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The effect of Graphical Organizers

- Learners with low prior knowledge learn best when hypertext has a *hierarchical* graphical organizer and/or has a *hierarchical* structure (DeStefano & LeFevre, 2007).
- Learners with high prior knowledge learn equally well irrespective of the structure of the graphical organizer and/or the structure of hypertext itself (e.g. linear, hierarchical, network)
- Instructional interventions beneficial for novices lose their effectiveness, or even have detrimental effects for advanced learners (Kalyuga, Chandler, & Sweller, 2003)).



Design and Analysis

Four conditions (four different hypertext environments):

1. interactive graphical organizer with navigation restriction
2. interactive graphical organizer with no navigation restriction
3. static graphical organizer with navigation restriction
4. static graphical organizer with no navigation restriction

Mixed model repeated measures design:

- Between subjects variable: type of hypertext
- Within subject variable: knowledge score (levels: pre- en post-test)



Expectations

- Learners with low prior knowledge are hypothesised to show the best learning outcomes in hypertext with an interactive graphical organizer where navigation is restricted, followed by interactive graphical organizer with no restriction on navigation. The worst learning outcomes are expected in the two conditions with a static graphical organizer.
- For learners with higher levels of prior knowledge, the picture which emerges should be the exact opposite.



Open Question

How should mental effort be included in the analysis?

(It will be measured every 5 minutes)



Thank you for your attention!

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