



CENTER FOR TEXTUAL STUDIES AND DIGITAL HUMANITIES

DIGH 402 - Instructional Design and e-Learning

Spring Semester 2016

Week 7 - Extra

design and development in e-Learning

personalisation principle 3 - author visibility

- considers the benefit to learning of improved author visibility
- instructional text often formal and impersonal
 - Paxton, R. 2002. 'The influence of author visibility on high school students solving a historical problem.' Cognition and Instruction 20. PP.197-248.
- giving a voice to the text
 - Beck, I. McKeown, M.G., Sandora, C., Kucan, L., and Worthy, J. 1996. 'Questioning the author: A year-long classroom implementation to engage students in text.' Elementary School Journal 96. PP.385-414.
- visible author principle in both synchronous and asynchronous forms of e-Learning

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personalisation principle 3 - author visibility

- factual summary of research

A. Review of Richard Mayer's Research by Kiewra and Creswell, 2000

"Another example of Mayer's systematic approach to writing review articles is seen in his article 'Multimedia Learning: Are We Asking the Right Questions?' (Mayer, 1997). Here Mayer reviews research showing that (a) multimedia delivery systems are better than verbal explanations alone, (b) instructional methods involving coordinated verbal and visual explanations are better than explanations separated by time or space (c) effects are strongest for students with low prior knowledge and high spatial ability" (p. 144)

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- personal style using an interview format

B. Interview of Richard Mayer by Suomala & Shaughnessy

Q: What are you currently researching?

A: For the past decade, my colleagues and I at Santa Barbara have been studying multimedia learning. Multimedia learning occurs when material is presented in more than one format, such as in words and in pictures. In particular we have been tracking down the conditions under which multimedia presentations concerning scientific explanations lead to meaningful, constructivist learning. We have found, for example, that adding animation to narration improves learners' understanding, and we have identified six principles for how to combine visual and verbal materials (p. 478)

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"To those of us looking back at the ancient past, Julius Caesar remains one of the most controversial figures. I, for one, still have a hard time determining if he was a great leader, or a terrible dictator. Other historians have the same problem. Let's see what you think."

- Paxton, R. 2002. 'The influence of author visibility on high school students solving a historical problem.' Cognition and Instruction 20. PP.197-248.

- transcripts or video clips of interviews with famous scholars...

- Inglese, T., Mayer, R.E., and Rigotti, F. 2007. 'Using audiovisual TV interviews to create visible authors that reduce the learning gap between native and non-native speakers.' Learning and Instruction 16. PP.67-77.

- 'Chicana por mi Raza: Mapping Chicana Feminisms (1960-1990)' project by Maria Coteria at University of Michigan

- [sample interview with Martha Coteria](#)

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personalisation principle 3 - psychological reasons for author visibility

- promotion of learner motivation
- "a personal guide through an otherwise difficult domain"

- Nolen, S. 1995. 'Effects of a visible author in statistical texts.' Journal of Educational Psychology 87. PP. 47-65.

- "a human-to-human relationship between author and reader is encouraged by the presence of a visible author"

- Paxton, R. 2002. 'The influence of author visibility on high school students solving a historical problem.' Cognition and Instruction 20. P.202.

- social presence in the learner, conversational presence with the author
- social presence encourages deeper cognitive processing during learning
- take care to avoid violating the coherence principle
- balance in design is important

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segmenting principle - creating smaller segments in a lesson

- identify when material is overly complex or might overload a learner's cognitive system
- consider the number of elements or concepts and the number of interactions
- bicycle pump example
 - five main elements to consider
 - relations a simple chain
 - two simple segments
- lightning formation example
 - more complex and detailed
 - sixteen segments each describing one or two major steps

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segmenting principle - psychological reasons

- complex lesson with many interacting elements, presented at a fairly rapid pace
 - miss one pertinent point and causal chain will no longer make sense
 - unfamiliar material needs additional time to consolidate
- unfamiliar learner and many interrelated concepts often leads to overloaded cognitive system
- too much essential processing now required
- insufficient cognitive capacity to engage in essential processing required to understand the material
- segment a lesson into manageable parts
- present pertinent information with user option to progress
- process of 'segmenting'

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segmenting principle - evidential support

- lightning formation example

- Mayer, R.E., and Chandler, P. 2001. 'When learning is just a click away: Does simple user interaction foster deeper understanding of multimedia messages?' Journal of Educational Psychology 93. PP.390-397.

- workings of an electric motor

- Mayer, R.E., Dow, G., and Mayer, S. 2003 'Multimedia learning in an interactive self-explaining environment: What works in the design of agent-based microworlds?' Journal of Educational Psychology 95. PP. 806-813.

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pre-training principle - getting up to speed

- related concept to segmenting
- provision of pre-training in the names and characteristics of the key concepts in a lesson
- technical terms or related concepts covered prior to specific course
- orientation of facilities, tools, and course exercises...
- generalised concepts prior to a specific applied concept

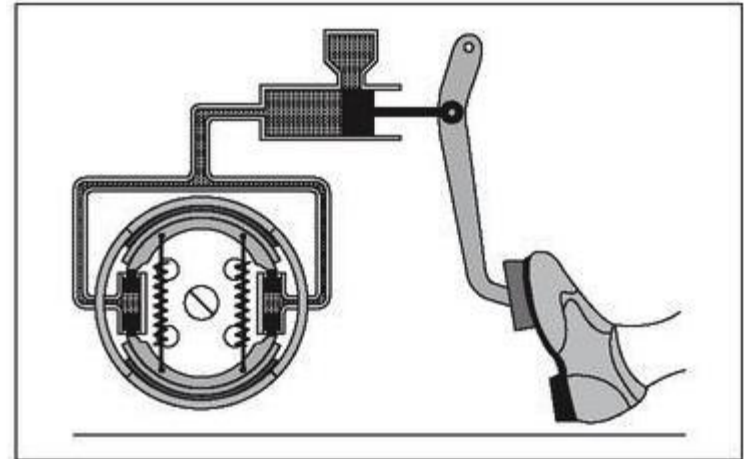
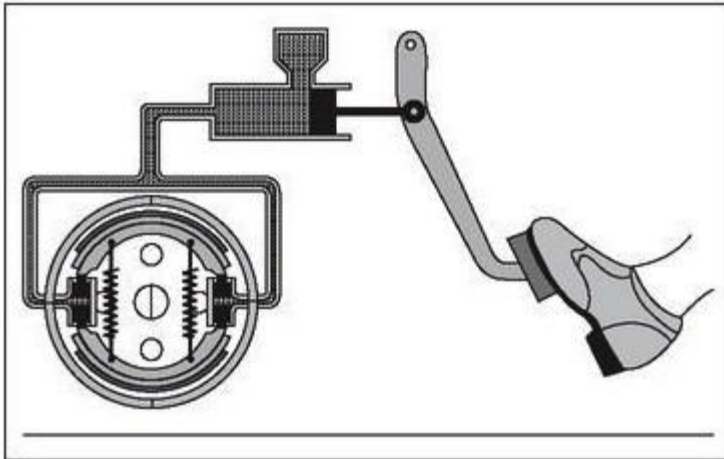
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pre-training principle - psychological reasons

- applicable where material would overwhelm a learner's cognitive system
- helpful if some processing can be done in advance
- cause and effect model
- fully understand each part of the model
- helps beginners manage processing of complex material
- can reduce the amount of essential processing necessary during the presentation
- pre-training can be redistributed in the lesson structure and time
- evaluate procedures and processes necessary for teaching the material
- identify key concepts and features prior to teaching

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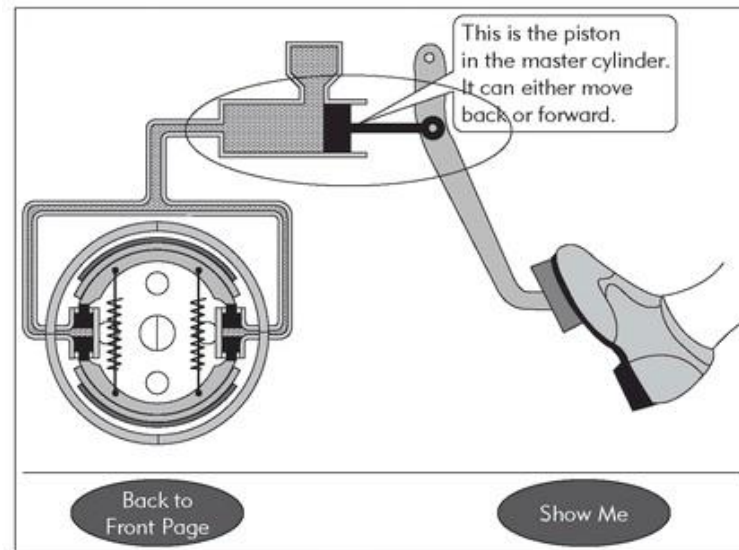
pre-training principle - evidential support



- Mayer, R.E., Mathias, A., Wetzell, K. 2002. 'Fostering understanding of multimedia messages through pretraining: Evidence for a two-stage theory of mental model construction.' Journal of Experimental Psychology: Applied 8. PP.147-154.

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pre-training principle - evidential support



- Mayer, R.E., Mathias, A., Wetzell, K. 2002. 'Fostering understanding of multimedia messages through pretraining: Evidence for a two-stage theory of mental model construction.' *Journal of Experimental Psychology: Applied* 8. PP.147-154.

- safety tests for electrical appliances

- Pollock, E., Chandler, P., and Sweller, J. 2002 'Assimilating complex information.' *Learning and Instruction* 12. PP. 61-86.

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segmenting and pre-training principles - concerns, further work...

- research for both principles not as deep as other principles
- need a larger research base
- examine with different materials, learners, learning contexts...
- size of a segment?
- how much control to offer a learner
- identification of key concepts included in pre-training
- depth and breadth of pre-training to consider