

Animation: Does animation improve comprehension?

Summary:

In 1996 Large, Beheshti, Breuleux, & Renaud found that animation and audio/visual presentations enhance comprehension but did not improve students' ability to recall. Animation seems to be more effective with procedural text than descriptive text (Large, Beheshti, Breuleux, & Renaud, 1994).

Ariew & Ercetin discovered that for intermediate second language learners some video annotations have a negative impact on reading comprehension.

Young learners need a combination of visual and verbal information to maximize comprehension (Panagiotakopoulos & Loannidis, 2002).

Reference

Large, A., Beheshti, J., Breuleux, A., & Renaud, A. (1996). Effect of Animation in Enhancing Descriptive and Procedural Texts in Multimedia Learning Environment. *Journal of the American Society for Information Science*, 47, 437-448.

Population

Grade 6 primary schools students in Montreal area. Majority was 12 year olds but some were 11. A total of 122 students participated.

Purpose/Questions

To determine whether a complex descriptive text is enhanced by animation so long as the animation exhibits close semantic links with the text.

To explore the importance of captions in linking an animation with a descriptive text so as to increase comprehension of the text.

To investigate the relationship between spatial ability and students' ability to recall and comprehend a text or a text enhanced with still images and animation.

Findings

Animation significantly enhanced comprehension of a descriptive text.

The addition of the animation to text did not produce significant gains in students' ability to recall the text, identify its main themes, or answer questions on it.

On average, students with higher spatial abilities performed better than those with low spatial abilities on propositional recall, answering multiple choice questions, thematic recall, and problem solving.

Reference

Brewer, N., Harvey, S., & Semmler, C. (2004). Improving Comprehension of Jury Instructions with Audio-Visual Presentation. *Applied Cognitive Psychology*, 18, 765-776.

Population	
90 law undergraduate students (38 males and 52 females) and 90 legally untrained adults (41 male and 49 female).	
Purpose/Questions	Findings
To examine whether mock-jurors' comprehension of a judge's instructions on the law of self-defense was enhanced by an instructional format that combined audio-visual presentation with a flowchart?	<p>Audio-visual format produced a marked improvement in comprehension: verdict accuracy, a multiple-choice or recognition test, a paraphrase or recall measure, and a scenario measure that involved transfer of legal knowledge to novel fact situations.</p> <p>Audio-visual instructional format produced an improvement in novices' comprehension.</p> <p>The distinctive role of audio-visual instructional format from the visual flow chart was not determinable from this study.</p>
Reference	
Large, A., Beheshti, J., Breuleux, A, & Renaud, A. (1994). Multimedia and Comprehension: A Cognitive Study. <i>Journal of American Society for Information Science</i> , 45, 515-528.	
Population	
120 grade 6 students	
Purpose/Questions	Findings
<p>Does the addition of still images, animation and sound to text enhance any information product?</p> <p>What is the role of complexity and text type (descriptive and procedural) in influencing the impact of animation?</p>	<p>If the learning objective is to understand the principles underlying text, then animation seems to enhance a text.</p> <p>If the objective is to memorize information so that it can be regurgitated as completely and accurately as possible, text alone may be more successful.</p> <p>Animation was more effective when used with procedural rather than descriptive text.</p>
Reference	
Ariew, R. & Ercetin, G. (2004). Exploring the Potential of Hypermedia Annotations for Second Language Reading. <i>Computer Assisted Language Learning</i> , 17, 237-259.	
Population	
103 adult intermediate and advance level adult ESL learners.	
Purpose/Questions	Findings
<p>Do different types of hypermedia annotations facilitate learning?</p> <p>Does this depend on the proficiency</p>	<p>Learners interact with text differently according to their proficiency level and prior knowledge.</p> <p>Video annotations had negative impact on reading</p>

levels of the students?	comprehension for intermediate learners, which suggests that video may be distracting to them.
Reference Panagiotakopoulos, C.T., & Ioannidis, G.S. (2002). Assessing children's understanding of basic time concepts through multimedia software. <i>Computers and Education</i> , 38, 331-349.	
Population 374 nursery and school-aged children in 3 nursery schools and 3 elementary schools in Greece.	
Purpose/Questions What is the role of computers with multimedia software in assessing the perception of the basic time concepts by children?	Findings The presentation method employing the use of multimedia is preferable when: The environment through which the time concept is examined is not static but involves movement or changes 2. There are facets, which can be emphasized through the use of multimedia so as to assist the child and to avoid misleading its judgment 3. A high degree of accuracy and precision is called for, when trying to avoid the introduction of unrelated details likely to mislead the child. When visual and verbal information was combined with sound information, students' comprehension was enhanced.