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How Goals Affect Evaluations of Animation Effectiveness

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Introduction
Animation commands our attention, it entertains us, but does it instruct us? Recent studies have shown animation is no more effective in instruction than comparable text or static graphics (for a review, see Tversky, Morrison, & Betrancourt, in press). This is particularly surprising because these studies often focus on teaching the kind of information that ought to be animation’s strength, namely, change in time.

Despite the research to the contrary, the perception of animation is that it is an effective means of presenting information, specifically, information regarding movement. Why do these perceptions of animation differ from what research tells us of its effectiveness? The present research shows that the goals one has when evaluating different instructional media affect those evaluations, such that when we must learn from animation we judge effectiveness by our perception of what we have learned, whereas when we are simply evaluating animation we judge on aesthetics.

Media Comparisons

Method
Participants reviewed three learning interfaces, text, text plus static graphics, and text plus animated graphics, each displaying rules of movement through an environment. Thirty-one participants were under instructions to imagine they would be subsequently tested on the information (No Learning group), while 55 were to be tested (Learning group). Following the entire review process, participants rated each interface on three criteria using a 1-7 scale: how effective they thought the interface would be in helping them learn the material, how confident they would be about subsequent tests of the material, and how enjoyable it would be learning from the interface.

Results
For each rating criteria, effectiveness, confidence, and enjoyment, those in the No Learning group rated the interface with animated graphics the highest, followed by the ratings for the static graphics interface and the text interface (Effectiveness: F(2,70)=16.1, p<.01, Confidence: F(2,70)=15.5, p<.01, Enjoyment: F(2,70)=21.6, p<.01). All paired-sample t-tests showing the differences between the three interface types were significant at the p<.001 level (see Figure 1).

Participants in the Learning group showed a different pattern of results in which the ratings in the graphics conditions were indistinguishable. Despite there being overall differences for each rating across the three media

Discussion
Judgments of different instructional media, in terms of their effectiveness, ability to inspire confidence, and enjoyability, differed based on the learner’s goals. The attractiveness of animation, and, secondly, static graphics, influenced judgments of those who were not required to learn the information. Those who were required to learn made judgments that superceded the superficial aspects of the interface and focused instead on accurate perceptions of what had been learned.

References