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Paper Presentation

Instructional design

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Keywords: Experimental studies, Quantitative methods, Instructional design, Student learning, Social sciences, Higher education, Knowledge creation, Comprehension of text and graphics, Environmental education, Multimedia learning, Cognitive skills, Conceptual change, Misconceptions

Sig's: SIG 2 - Comprehension of Text and Graphics, SIG 3 - Conceptual Change, SIG 6 - Instructional Design

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The role of perceptual cues in matrix diagrams

Experimental studies, Quantitative methods, Instructional design, Student learning, Social sciences, Higher education

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An experiment was conducted to assess whether the design of a matrix diagram influences how people study the diagram and whether this has an effect on recall of the presented information. We compared four versions of a matrix diagram on antisocial personality disorder. It consisted of four header cells on top and four on the left, organizing the content in sixteen body cells around four types of personality disorders (antisocial, dependent, schizoid and narcissistic) and four categories within each type (self-image, emotion, behavior, and attitude). Content of the diagram in the four conditions was the same, but the layout was different. Arrows made the orientation of the diagram to be either left-right or top-down, and the personality types were on the left while the categories were on top, or the other way around. 81 participants were asked to study one of these four diagrams for five minutes and do a post-test. Eye movements were recorded to analyze participants' viewing patterns. We found that participants mainly followed the types when reading the diagram. Participants performed better on the questions that were focused on types than on the questions that focused on categories, regardless of the condition they were in.

Mechanisms behind the testing effect