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Author

Ohtsu, Kayoko

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The Effect of the Structural Differences of Concepts on Learning by Drawing versus Reading Diagrams

Kayoko Ohtsu
Waseda University

Abstract: Considerable studies indicate that structuring concepts within a diagram enhances learning (e.g. concept mapping), as opposed to learning by just reading the information. We examine whether the differences in the structure of information (hierarchical or linear string) affect learning based on the formation and drawing of a diagram. In our experiment, participants learned a family tree consisting of 6 members (Hierarchical) or the order of 6 participants in a relay race (Linear). While learning, half of the participants in each condition produced a drawing of the family tree or flow diagram of relay order (Drawing). In contrast, the other half read presented diagrams and wrote down the names (Reading). The results revealed that while participants in Hierarchical- Drawing performed better on the post-test than those in Hierarchical-Reading, there was no difference between the performance of participants in Linear-Drawing and Linear-Reading. That suggests the structural factor would affect the learning.