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Topographic Map Learning Strategies

An important skill of geology is being able to visualize the landscape using contoured topographic maps. This study investigates how students develop topographic map learning strategies, and apply these strategies toward three-dimensional maps. Participants were geology students from an urban university in the Southwest. A topographic map memory test was developed by the authors using Authorware 6.5. One component of the test required participants to study a two-dimensional map, and then select the corresponding three-dimensional map representation from four possible choices. Another component of the test asked participants to describe their strategy for learning the two-dimensional map.

The results indicate differences between participant topographic map learning strategies. For example, participants who used directional terms (for example, North, South, or center) to describe their map learning strategy were more successful in selecting the corresponding three-dimensional map representation then participants who used geological terms (river, mesa, or hill). Gender differences of map learning strategy were also suggested. In conclusion, a better understanding of how students approach the learning of a topographic map is gained, and implications for further research are defined.