The impact of cognitive style on concept mapping: Visualizing variations in the structure of ideas

Joanna F. Defranco-Tommarello, Kathryn Weed Jablokow, Sven G. Bilen, Andras Gordon

Engineering Division (Great Valley), School of Engineering Design, Technology, and Professional Programs, Electrical Engineering

Abstract

The aim of this exploratory study was to determine whether any links exist between cognitive style and the ways in which students organize their ideas in concept maps. In particular, 77 undergraduate and 51 graduate engineering students completed separate concept maps based on "common knowledge" topics and relevant engineering course topics, respectively; this paper will focus on the "common knowledge" maps. The students' cognitive styles were assessed using the Kirton Adaption-Innovation inventory (KAI), and their concept maps were analyzed using both traditional and holistic scoring approaches. Correlations between the students' KAI results and the metrics obtained from their concept maps were investigated, with some statistically significant correlations observed. These results are discussed, along with the cognitive style distributions of our samples and implications of our findings for the engineering classroom.

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