

Ability Levels, Implicit Theories of Intelligence, Cognitive Load, and Fluid Intelligence: An Exploration into the Correlation between Spatial Ability and STEM Education

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Abstract

Decades of empirical evidence demonstrates the correlation between spatial ability and STEM education. However, a causal relationship is yet to be confirmed. This talk will present empirical data concerning this relationship gathered across a series of experiments with various focuses such as cognitive ability levels, implicit theories of intelligence, and fluid intelligence. Some findings include the observation of students using problem solving strategies which align with their cognitive abilities and the predictive relationship between a synthesis of visualization, inductive reasoning and memory span with fluid intelligence. Implication of this work will be discussed in the context of educational interventions.