

Do parental STEM and gender beliefs affect children's mental rotation performance?

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Abstract

Mental rotation (MR) is the ability to rotate an object in our mind without physically rotating the object (Khooshabeh & Hegarty, 2010). MR skills have been suggested to be an important contribution to success in various science, technology, engineering, and math (STEM) fields. Therefore, it is beneficial to further investigate what may influence a child's MR development. Studies have demonstrated how cultural contexts, such as values, language, and beliefs shared between parent-child dyads, can shape their child's MR development. These impacts are shown to be continuous throughout a child's early development. Muenk et al. (2020) suggest that parents' beliefs about their children's spatial abilities can be influential on their children's spatial performance and likelihood to pursue a STEM career. In Constantinescu et al. (2018), the researchers found that female participants, whose parents had more traditional gender attitudes, performed below average in the mental rotation task. We plan to add to the current understanding of the parental influence on children's (aged 3–6) MR development. Children's MR performance is based on a picture rotation task, and parents' STEM interests and gender attitudes are self-reported via a survey. We hypothesize that: 1. children with parents who are interested in STEM fields will perform better on MR tasks on average, and 2. children with parents who have higher levels of masculine and lower levels of feminine attitudes will perform better on MR tasks on average. We plan to have the preliminary analysis completed prior to the conference date.