

USING EYE TRACKING TECHNOLOGY TO EVALUATE THE STRATEGIES APPLIED BY MENTAL RETARDATION POPULATION TO RESOLVE ANALOGICAL PROBLEMS

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Eye Tracking system are widely used to track participants eye movements during different tasks (such as: reading, face recognitions, emotion regulations). In the current study we recruited the eye tracking technology together with inhouse analyses computer software tools to study what strategies intact and deficit population apply to resolve analogical problems presented as set of images. Eighteen adults with intellectual disability (ID) and 20 children with typical development (TD) matched for cognitive level, participated in a study. Participants solved perceptual and conceptual analogies (from the Conceptual and Perceptual Analogical Modifiability Test—CPAM) while having their eye movements monitored. As predicted, the overall percent of correct answers was significantly higher for the TD group compared to that of the ID group. Comparison of the eye movement pattern of each group while solving the analogies revealed that in addition to the quantitative difference between the groups, there is a qualitative difference in the process of solving the analogies. The difference in the scanning pattern between the TD and the ID groups is interpreted as a reflection of two different types of strategies, Constructive matching and Response elimination, respectively. Constructive matching involves planning, observation and construction of an optimal answer which is then compared to the response alternatives of the response choice. That is, the participants analyze the components of the task prior to solving the problem, and only then search for the alternative answers. This strategy was found to be used by higher ability participants.