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An Embodied Intelligent Tutor for Literal Concepts Recognition

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Abstract

We combine motion captured data with linguistic notions in a game-like intelligent tutoring system, in order to help elementary school students to better differentiate literal from metaphorical uses of motion verbs, based on embodied information. In addition to the thematic goal, we intend to improve young students attention and spatiotemporal memory, by presenting sensorimotor data experimentally collected in our motion capturing labs. Furthermore, we examine the accomplishment of games goals and compare it to curriculums approach. Sixty nine elementary school students were randomly divided in two experimental groups (game and traditional) and one control group. Two way analysis of variance suggests that the experimental groups showed progress in posttests, with game group showing remarkable progress especially in the verbs/actions presented during the intervention. This finding was considered as a first indication of attentional and spatiotemporal memorys improvement, while the games assistance features cultivated students metacognitive perception.